

**DOGUE CREEK BRIDGE REHABILITATION  
FINAL ENVIRONMENTAL ASSESSMENT**



**U.S. ARMY GARRISON FORT BELVOIR**

**JUNE 2020**

**DOGUE CREEK BRIDGE REHABILITATION  
ENVIRONMENTAL ASSESSMENT**

**U.S. ARMY GARRISON FORT BELVOIR  
DECEMBER 2019**

**DOGUE CREEK BRIDGE REHABILITATION**  
**ENVIRONMENTAL ASSESSMENT**

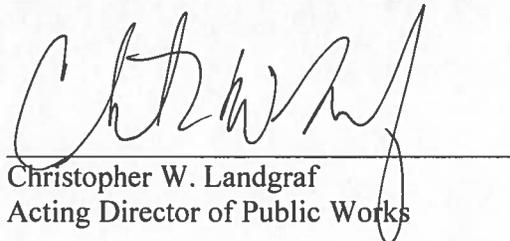
Reviewed by:  
U.S. Army Garrison Fort Belvoir



*F. Mariani 22 Jan '20*

Felix M. Mariani  
Chief, Environmental Division

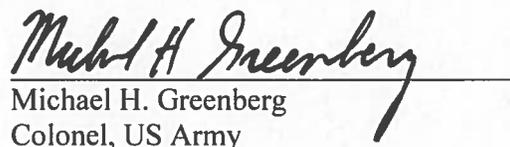
Recommended for Approval:  
U.S. Army Garrison Fort Belvoir



*Christopher W. Landgraf*

Christopher W. Landgraf  
Acting Director of Public Works

Approved by:  
U.S Army Garrison Fort Belvoir



*Michael H. Greenberg*

Michael H. Greenberg  
Colonel, US Army  
Commanding

**Final Finding of No Significant Impact**  
**Dogue Creek Bridge Rehabilitation**  
**Environmental Assessment**  
**U.S. Army Garrison, Fort Belvoir**  
**Directorate of Public Works Environmental Division**  
**Fort Belvoir, Virginia**

**Name of Action:** Dogue Creek Bridge Rehabilitation Environmental Assessment

**Description of Proposed Action and Need:** The Proposed Action entails rehabilitating Dogue Creek Bridge by removing and replacing the bridge's superstructure. The bridge's substructure will remain in place. The Proposed Action would involve the following:

- Set up detour route and close bridge to vehicular and pedestrian traffic;
- Install traffic barricades on the east and west sides of existing bridge;
- Trim trees (grubbing not anticipated);
- Remove existing truss bridge and sidewalk structure;
- Clear dirt and debris from abutment beam seats;
- Replace existing bearings;
- Set new bridge superstructure;
- Replace concrete sidewalks at east and west ends of bridge walkway (replace existing concrete sidewalk with new sidewalk);
- Install new W-beam guardrail on bridge and approaches (existing W-beam traffic barrier would be removed); and
- Relocate existing utilities.

Removal and replacement of the superstructure would be completed by use of an approximately 30-foot tall crane placed on Mount Vernon Road. The existing truss bridge would be removed in separate pieces and laid on Mount Vernon Road just behind the crane. This laydown area would also be used for material storage, material handling, bridge assembly and disassembly. The area just south of the laydown area would be used for further material storage, a turnaround for equipment and a secondary crane location. This adjacent area would also be used for a convex for tools, equipment and fuel storage and parking for construction employees.

Personnel of PRIME AE Group, Inc. conducted an inspection of the Dogue Creek Bridge on 14 November 2018. A report was prepared in February 2019. According to this inspection, Dogue Creek Bridge is in poor condition. If action is not taken, the bridge will continue to deteriorate and will eventually be unsafe for vehicle and/or pedestrian traffic. This situation could either result in closure of the bridge due to safety concerns or a potentially catastrophic failure causing injury or fatality. The approximately 68 acre parcel of South Post located east of Dogue Creek will be isolated from the main portion of South Post, resulting in the loss of Walker Gate as an access point to all of South Post and increasing traffic at the other South Post access points. Walker Gate would serve only as an access point for River Village and the marina facilities.

The purpose of the Proposed Action is to prevent further deterioration of the Dogue Creek Bridge by repairing and rehabilitating it to meet the National Bridge Inspection Standards and Army

Regulation (AR) 420-1. Repairing and rehabilitating the bridge will improve safety conditions for vehicle and pedestrian traffic. With Dogue Creek Bridge remaining in place and safe for vehicle and pedestrian traffic, traversing Dogue Creek will continue to be possible for the people who use Walker Gate as an access point to South Post, the residents of River Village, and patrons of the marina.

**Alternatives:** The Environmental Assessment (EA) evaluated the Proposed Action and the No Action Alternative. Implementation of the No Action Alternative would not satisfy the purpose and need to provide a safe means of traversing Dogue Creek on Fort Belvoir's South Post. Dogue Creek Bridge would continue to be out of compliance with the National Bridge Inspection Standards and AR 420-1, *Army Facility Management*.

**Environmental Consequences:** The EA, which is attached hereto and incorporated by reference into this Finding of No Significant Impact (FNSI), examines the potential effects of the Proposed Action and the No Action Alternative on the following resource areas: air quality; surface water; wetlands; floodplains; vegetation; fish and wildlife; rare, threatened and endangered species; coastal zone; noise; soils; cultural resources; socioeconomics; environmental justice; protection of children; traffic and transportation; infrastructure; utilities; hazardous materials and waste; visual and aesthetic resources; safety and occupational health; and recreational facilities. No impact or negligible impacts to the following resources are anticipated and were not analyzed in detail in the EA: groundwater; land use; geology and topography.

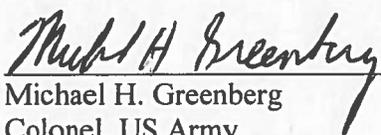
**Summary of Environmental Impacts:** It is anticipated that the Proposed Action would result in no or negligible impacts to groundwater; wetlands; floodplains; rare, threatened and endangered species; coastal zone; land use; geology and topography; socioeconomics; environmental justice and protection of children. Minor short-term adverse impacts to air quality and noise would be anticipated from the use of construction equipment during bridge removal and construction. Minor short-term adverse impacts to surface water would be anticipated from bridge dust and debris and earth disturbance and potential for increased erosion from clearing dirt and debris from abutments. Minor short-term adverse impacts to vegetation would be anticipated from tree trimming. Minor short-term adverse impacts to wildlife would be anticipated from the tree trimming and minor short-term adverse impacts to fish and wildlife would be anticipated due to noise disturbance during construction. Minor short-term adverse impacts to soils would be anticipated from earth-moving/grading from clearing dirt and debris from abutments and near the laydown area during bridge removal and construction. Moderate long-term adverse impacts to cultural resources would be anticipated due to removal of historic property and will be mitigated through the Memorandum of Agreement that has been developed in accordance with Section 106 of the National Historic Preservation Act of 1966 (as amended). Minor short-term adverse impacts to traffic and transportation would be anticipated from road closures and detours during construction and moderate long-term beneficial impacts due to new weight restrictions allowing emergency vehicles to use the new bridge. Moderate long-term beneficial impacts to infrastructure would be anticipated from upgraded modifications made to the bridge. Minor short-term adverse impacts to utilities are anticipated from the disconnection and reconnection of telecommunication cables from the current bridge to the new bridge. Minor short-term adverse impacts to hazardous materials and wastes are anticipated from the lead-based paint located on the current bridge and moderate long-term beneficial impacts since the new bridge will contain no lead-based paint or other hazardous materials and wastes. Minor short-term adverse impacts to visual and aesthetic resources would be

anticipated from the use of a crane during bridge removal and construction. Minor short-term adverse impacts to safety and occupational health would be anticipated from disturbance of lead-based paint and moderate long-term beneficial impacts due to management of lead-based paint on Fort Belvoir. Minor short-term adverse impacts to recreational facilities would be anticipated from the blockage of a portion of Dogue Creek during bridge removal and construction. No significant cumulative impacts are anticipated. No significant impacts on human health or the environment are expected to result from the Proposed Action.

**Notice of Availability:** A Notice of Availability was published on {insert date} in the Fort Belvoir Eagle, Springfield Connection, Mount Vernon Gazette, Washington Times, and Washington Post Fairfax Edition with comments due on {insert date}. Copies of the EA and Draft FNSI were available for review at the Van Noy Library, Fort Belvoir, Virginia; the Lorton Branch of the Fairfax County Library in Lorton, Virginia; and the Sherwood Regional Branch, John Marshall Branch, and the Kingstowne Branch of the Fairfax County Library in Alexandria, Virginia.

**Response to Comments:** Comments from federal, state, and local agencies and the public received during the public review period will be considered by Fort Belvoir for inclusion into the Final EA. For more information, contact the Fort Belvoir Directorate of Public Works Environmental Division at 703-806-3193.

**Conclusion:** Pursuant to the Council on Environmental Quality (CEQ) regulations; Title 40, CFR Section 1500-1508 regarding procedural implementation of the National Environmental Policy Act (NEPA) of 1969; and implemented for the Army by Title 32 CFR 651, Environmental Analysis of Army Actions, it is anticipated that the Proposed Action would not have a significant effect on the environment and that this FNSI is appropriate. An Environmental Impact Statement (EIS) will not be prepared.

  
\_\_\_\_\_  
Michael H. Greenberg  
Colonel, US Army  
Commanding

7/9/20  
\_\_\_\_\_  
Date

# ENVIRONMENTAL ASSESSMENT

**Lead Agency:** Department of Army

**Title of Proposed Action:** Environmental Assessment for the Dogue Creek Bridge Rehabilitation at Fort Belvoir, Virginia

**Affected Jurisdiction:** Fort Belvoir, Virginia

**Prepared By:** Directorate of Public Works Environmental Division, Fort Belvoir, Virginia

**Approved By:** Colonel Michael H. Greenberg, Commander, Fort Belvoir, Virginia

**Abstract:** This Environmental Assessment (EA) analyzes and documents the impacts of the Proposed Action at Fort Belvoir to rehabilitate Dogue Creek Bridge by removing and replacing the bridge's superstructure. A No Action Alternative is also evaluated to serve as a baseline against which the impacts of the Proposed Action are evaluated. None of the predicted impacts of the Proposed Action would result in significant impacts at Fort Belvoir. Best Management Practices, however, would be employed to reduce or minimize impacts. Moderate long-term adverse impacts to cultural resources would be mitigated through a Memorandum of Agreement. As a result, it is anticipated that preparation of an Environmental Impact Statement is not required and a Finding of No Significant Impact (FNSI) will be published in accordance with the National Environmental Policy Act of 1969.

**Review Period:** Interested parties are invited to review and comment on the EA and draft FNSI during a 30 day period. Please submit any comments to Commander, U.S. Army Garrison Fort Belvoir, ATTN: Directorate of Public Works Environmental Division, Building 1442, 9430 Jackson Loop, Fort Belvoir, VA 22060-5116 or email your comments to [usarmy.belvoir.imcom-atlantic.mbx.enrd@mail.mil](mailto:usarmy.belvoir.imcom-atlantic.mbx.enrd@mail.mil). For further information, contact Mr. Felix Mariani, Chief of Environmental Division at 703-806-3193 or visit <https://home.army.mil/belvoir/index.php/about/Garrison/directorate-public-works/environmental-division>.

The EA and draft FNSI were also available for review at the following libraries:

MWR Library  
9800 Belvoir Road, Building 220  
Fort Belvoir, Virginia 22060

Fairfax County Library  
Lorton Branch  
9520 Richmond Highway  
Lorton, Virginia 22079-2124

Fairfax County Library  
Sherwood Regional Branch  
2501 Sherwood Hall Lane  
Alexandria, Virginia 22306-2799

Fairfax County Library  
John Marshall Branch  
6209 Rose Hill Drive  
Alexandria, Virginia 22310

Fairfax County Library  
Kingstowne Branch  
6500 Landsdowne Centre  
Alexandria, Virginia 22315-5011

## EXECUTIVE SUMMARY

### ES. 1 INTRODUCTION

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, and 32 Code of Federal Regulations (CFR) Part 651, Fort Belvoir has prepared an Environmental Assessment (EA) to evaluate potential environmental and cultural effects associated with the proposed rehabilitation of the Dogue Creek Bridge by removing and replacing the bridge's superstructure. This EA has been prepared in accordance with NEPA (Title 42, United States Code [USC] §4321 et seq.), NEPA-implementing regulations of the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] Parts 1500–1508), and the Army's NEPA-implementing regulations (32 CFR Part 651, *Environmental Analysis of Army Actions*). This EA was prepared concurrently with and integrated with environmental impact analyses and related surveys and studies required by the Fish and Wildlife Coordination Act (16 USC §661 et seq.), the National Historic Preservation Act of 1966 (16 USC 470 et seq.), the Endangered Species Act of 1973 (16 USC §1531 et seq.), and other environmental review laws (and their implementing regulations), and Executive Orders.

Dogue Creek Bridge is a vehicular and pedestrian bridge located along Mount Vernon Road to the west of Walker Gate on the South Post of Fort Belvoir. The bridge was placed into position in November 1958 and is the only means of traversing Dogue Creek on Fort Belvoir. It provides the most direct vehicular and pedestrian means for connecting the main portion of Fort Belvoir's South Post with an approximately 68-acre parcel of South Post located on the east side of Dogue Creek. This parcel, which is contiguous to South Post and only separated from it by Dogue Creek, includes Walker Gate, a major access point to South Post; a residential area known as River Village; and the garrison's marina facilities. By vehicle, the only other way to access this approximately 68-acre parcel from the main portion of South Post is to exit Fort Belvoir through another gate, drive on public roads, and re-enter at Walker Gate. Vehicle count reports were taken from 4 December to 17 December 2017 and recorded an average of 4,930 vehicles per work day entering and exiting Fort Belvoir through Walker Gate and crossing Dogue Creek Bridge (Fort Belvoir, 2017).

### ES. 2 PROPOSED ACTION

The Proposed Action involves rehabilitating Dogue Creek Bridge by removing and replacing the bridge's superstructure. The bridge's substructure will remain in place. The Proposed Action would involve the following:

- Set up detour route and close bridge to vehicular and pedestrian traffic;
- Install traffic barricades on the east and west sides of existing bridge;
- Trim trees (grubbing not anticipated);
- Remove existing truss bridge and sidewalk structure;
- Clear dirt and debris from abutment beam seats;
- Replace existing bearings;
- Set new bridge superstructure;
- Replace concrete sidewalks at east and west ends of bridge walkway (replace existing concrete sidewalk with new sidewalk);
- Install new W-beam guardrail on bridge and approaches (existing W-beam traffic barrier would be removed); and

- Relocate existing utilities.

Removal and replacement of the superstructure would be completed by use of an approximately 30-foot tall crane placed on Mount Vernon Road. The existing truss bridge would be removed in separate pieces and laid on Mount Vernon Road just behind the crane. This laydown area would also be used for material storage, material handling, bridge assembly and disassembly. The area just south of the laydown area would be used for further material storage, a turnaround for equipment and a secondary crane location. This adjacent area would also be used for a connex for tools, equipment and fuel storage and parking for construction employees.

### **ES. 3 PURPOSE AND NEED**

Personnel of PRIME AE Group, Inc. conducted an inspection of the Dogue Creek Bridge on 14 November 2018. A report was prepared in February 2019. According to this inspection, Dogue Creek Bridge is in poor condition. If action is not taken, the bridge will continue to deteriorate and will eventually be unsafe for vehicle and/or pedestrian traffic. This situation could either result in closure of the bridge due to safety concerns or a potentially catastrophic failure causing injury or fatality. The approximately 68 acre parcel of South Post located east of Dogue Creek will be isolated from the main portion of South Post, resulting in the loss of Walker Gate as an access point to all of South Post and increasing traffic at the other South Post access points. Walker Gate would serve only as an access point for River Village and the marina facilities.

The purpose of the Proposed Action is to prevent further deterioration of the Dogue Creek Bridge by repairing and rehabilitating it to meet the National Bridge Inspection Standards and Army Regulation (AR) 420-1. Repairing and rehabilitating the bridge will improve safety conditions for vehicle and pedestrian traffic. With Dogue Creek Bridge remaining in place and safe for vehicle and pedestrian traffic, traversing Dogue Creek will continue to be possible for the people who use Walker Gate as an access point to South Post, the residents of River Village, and patrons of the marina.

### **ES. 4 ALTERNATIVES**

This EA evaluates the Proposed Action and the No Action Alternative. The No Action Alternative would not satisfy the purpose and need to provide a safe means of traversing Dogue Creek on Fort Belvoir's South Post. Dogue Creek Bridge would continue to be out of compliance with the National Bridge Inspection Standards and AR 420-1, *Army Facility Management*.

Alternatives considered but eliminated from further consideration included performing minor bridge maintenance, closing the existing bridge in place, adding a new bridge crossing in a new location and replacing the existing bridge with new substructure and superstructure. These alternatives were eliminated due to safety, access, logistics, natural resources and economic reasons.

### **ES. 5 ENVIRONMENTAL CONSEQUENCES**

**Environmental Consequences:** This EA examines the potential effects of the Proposed Action and the No Action Alternative on the following resource areas: air quality; surface water; wetlands; floodplains; vegetation; fish and wildlife; rare, threatened and endangered species; coastal zone;

noise; soils; cultural resources; socioeconomics; environmental justice; protection of children; traffic and transportation; infrastructure; utilities; hazardous materials and waste; visual and aesthetic resources; safety and occupational health; and recreational facilities. It was found that there would be no impact or negligible impact to the following resources, which were not further analyzed in the EA: groundwater; land use; geology and topography.

**Summary of Environmental Impacts:** It is anticipated that the Proposed Action would result in no or negligible impacts to groundwater; wetlands; floodplains; rare, threatened and endangered species; coastal zone; land use; geology and topography; socioeconomics; environmental justice and protection of children. Minor short-term adverse impacts to air quality and noise would be anticipated from the use of construction equipment during bridge removal and construction. Minor short-term adverse impacts to surface water would be anticipated from bridge dust and debris and earth disturbance and potential for increased erosion from clearing dirt and debris from abutments. Minor short-term adverse impacts to Resource Protection Areas (RPAs) would be anticipated because of Dogue Creek and its tidal wetlands buffers in the project area. Minor short-term adverse impacts to vegetation would be anticipated from tree trimming. Minor short-term adverse impacts to wildlife would be anticipated from the tree trimming and minor short-term adverse impacts to fish and wildlife would be anticipated due to noise disturbance during construction. Minor short-term adverse impacts to soils would be anticipated from earth-moving/grading from clearing dirt and debris from abutments and near the laydown area during bridge removal and construction. Moderate long-term adverse impacts to cultural resources would be anticipated due to removal of historic property. Minor short-term adverse impacts to traffic and transportation would be anticipated from road closures and detours during construction and moderate long-term beneficial impacts due to higher weight restrictions allowing emergency vehicles to use the bridge. Moderate long-term beneficial impacts to infrastructure would be anticipated from upgraded modifications made to the bridge. Minor short-term adverse impacts to utilities are anticipated from the disconnection and reconnection of telecommunication cables during construction. Minor short-term adverse impacts to hazardous materials and wastes are anticipated from the disturbance of lead-based paint (LBP) located on the current bridge and moderate long-term beneficial impacts after construction since the bridge will no longer contain LBP or other hazardous materials and wastes. Minor short-term adverse impacts to visual and aesthetic resources would be anticipated from the use of a crane during bridge removal and construction. Minor short-term adverse impacts to safety and occupational health would be anticipated from disturbance of LBP and moderate long-term beneficial impacts due to the removal of LBP. Minor short-term adverse impacts to recreational facilities would be anticipated from the blockage of a portion of Dogue Creek during bridge removal and construction. No significant cumulative impacts are anticipated. No significant impacts on human health or the environment are expected to result from the Proposed Action (Table ES-1).

## ES. 6 CONCLUSIONS

Pursuant to CEQ regulations, 40 CFR Parts 1500-1508 regarding procedural implementation of the NEPA, and implemented for the Army by 32 CFR Part 651, *Environmental Analysis of Army Actions*, it is anticipated that the Proposed Action would not have a significant effect on the environment and that a Finding of No Significant Impact (FNSI) is appropriate. An Environmental Impact Statement (EIS) will not be prepared.

**Table ES-1: Summary of Impacts of the Proposed Action and the No Action Alternative**

<b>Resource</b>	<b>Resource Evaluated in Detail in the EA</b>	<b>Proposed Action</b>	<b>No Action Alternative</b>
<b>Air Quality</b>	Yes	Minor short-term adverse impacts from construction equipment.	No Impacts
<b>Ground Water</b>	No	No Impacts	No Impacts
<b>Surface Water</b>	Yes	Minor short-term adverse impacts during construction from bridge dust and debris and earth disturbance and potential for increased erosion from clearing dirt and debris from abutments. Temporary erosion and sediment control measures would be employed to mitigate stormwater runoff. Best Management Practices (BMPs) would be used on bridge to minimize escape of pollutants from bridge debris.	Minor long-term adverse impacts from LBP dropping into Dogue Creek from the existing bridge.
<b>Wetlands</b>	Yes	No impacts. All wetlands will be avoided. Minor short-term adverse impacts to RPAs due to Dogue Creek and associated tidal wetlands buffers in project area.	Minor long-term adverse impacts from LBP dropping into Dogue Creek from the existing bridge.
<b>Floodplains</b>	Yes	No impacts. The rehabilitated bridge would continue to lie in the one percent annual chance coastal flood hazard area.	Minor long-term adverse impacts from LBP dropping into Dogue Creek from the existing bridge.
<b>Vegetation</b>	Yes	Minor short-term adverse impacts from tree trimming.	No Impacts
<b>Fish and Wildlife</b>	Yes	Minor short-term adverse impacts from tree trimming and noise disturbance during bridge removal and construction.	No Impacts
<b>Rare, Threatened and Endangered Species</b>	Yes	No impacts. Tree trimming would take place outside of the active period for the northern long-eared bat.	No Impacts
<b>Coastal Zone</b>	Yes	Negligible impacts. The Proposed Action would be consistent with the Virginia Coastal Zone Management Policy.	No Impacts
<b>Land Use</b>	No	No Impacts	No Impacts
<b>Noise</b>	Yes	Minor short-term adverse impacts from construction equipment.	No Impacts
<b>Soils</b>	Yes	Minor short-term adverse impacts from earth-moving/grading from clearing dirt and debris from abutments and near the laydown area during bridge removal and construction.	No Impacts

<b>Resource</b>	<b>Resource Evaluated in Detail in the EA</b>	<b>Proposed Action</b>	<b>No Action Alternative</b>
<b>Geology and Topography</b>	No	No Impacts	No Impacts
<b>Cultural Resources</b>	Yes	Moderate long-term adverse impacts due to removal of historic property.	No Impacts
<b>Socioeconomics</b>	Yes	Negligible short-term beneficial impacts from the temporary hiring of construction workers. There would be no increase in the permanent workforce.	No Impacts
<b>Environmental Justice</b>	Yes	No Impacts	No Impacts
<b>Protection of Children</b>	Yes	No Impacts	No Impacts
<b>Traffic and Transportation</b>	Yes	Minor short-term adverse impacts during bridge removal and construction from road closures and re-routing of traffic. Moderate long-term beneficial impacts following construction completion due to higher weight restrictions allowing emergency vehicles to use the bridge.	Moderate long-term adverse impacts, as no emergency vehicles or any vehicles will be able to use the bridge over time.
<b>Infrastructure</b>	Yes	Moderate long-term beneficial impacts from improvements to the bridge.	Moderate long-term adverse impacts from continued deterioration of the bridge eventually creating unsafe conditions for vehicle and pedestrian traffic.
<b>Utilities</b>	Yes	Minor short-term adverse impacts from the disconnection and reconnection of telecommunication cables during bridge removal and construction.	No Impacts
<b>Hazardous Materials and Wastes</b>	Yes	Minor short-term adverse impacts from mobilization of LBP on bridge. BMPs would minimize human health and environmental impacts. Moderate long-term beneficial impacts after construction since the bridge will no longer contain any LBP or other hazardous materials and wastes.	Minor long-term adverse impacts from LBP dropping into Dogue Creek from the existing bridge.
<b>Visual and Aesthetic Resources</b>	Yes	Minor short-term adverse impacts from presence of construction equipment in project area, including an approximately 30 foot crane.	No Impacts

<b>Resource</b>	<b>Resource Evaluated in Detail in the EA</b>	<b>Proposed Action</b>	<b>No Action Alternative</b>
<b>Safety and Occupational Health</b>	Yes	Minor short-term adverse impacts due to disturbance of LBP, moderate long-term beneficial impacts after construction since the bridge will no longer contain any LBPs or other hazardous materials and wastes.	No Impacts
<b>Recreational Facilities</b>	Yes	Minor short-term adverse impacts of recreational fishing and boating opportunities in construction area due to temporary restriction to recreational navigation traffic under bridge.	Moderate long-term adverse impacts due to the potential closing of the bridge because of continued deterioration.

# TABLE OF CONTENTS

1.0	PURPOSE AND NEED .....	1-1
1.1	INTRODUCTION .....	1-1
1.2	STUDY AREA LOCATION.....	1-1
1.3	BACKGROUND .....	1-1
1.4	PURPOSE AND NEED FOR THE PROPOSED ACTION .....	1-4
1.5	THE NEPA PROCESS.....	1-4
1.6	AGENCY AND PUBLIC PARTICIPATION.....	1-5
1.6.1	Scoping.....	1-5
1.6.2	EA Public Review .....	1-5
1.7	ENVIRONMENTAL LAWS AND REGULATIONS.....	1-6
2.0	DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES.....	2-1
2.1	PROPOSED ACTION.....	2-1
2.2	ALTERNATIVES .....	2-1
2.2.1	No Action Alternative .....	2-1
2.3	ALTERNATIVES CONSIDERED BUT ELIMINATED .....	2-3
2.3.1	Continue Maintenance.....	2-3
2.3.2	Close Bridge in Place .....	2-3
2.3.3	New Crossing in New Location .....	2-3
2.3.4	Replace Substructure and Superstructure.....	2-3
3.0	AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.....	3-1
3.1	INTRODUCTION .....	3-1
3.2	RESOURCES NOT EVALUATED IN THIS ENVIRONMENTAL ASSESSMENT...3-2	
3.3	AIR QUALITY .....	3-2
3.3.1	Affected Environment .....	3-3
3.3.2	Environmental Consequences .....	3-6
3.4	WATER RESOURCES .....	3-7
3.4.1	Affected Environment .....	3-7
3.4.2	Environmental Consequences .....	3-11
3.5	BIOLOGICAL RESOURCES.....	3-13
3.5.1	Affected Environment .....	3-13
3.5.2	Environmental Consequences .....	3-16

3.6	COASTAL ZONE .....	3-16
3.6.1	Affected Environment .....	3-17
3.6.2	Environmental Consequences .....	3-17
3.7	NOISE.....	3-17
3.7.1	Affected Environment .....	3-17
3.7.2	Environmental Consequences .....	3-18
3.8	SOILS .....	3-18
3.8.1	Affected Environment .....	3-18
3.8.2	Environmental Consequences .....	3-20
3.9	CULTURAL RESOURCES .....	3-18
3.9.1	Affected Environment .....	3-21
3.9.2	Environmental Consequences .....	3-22
3.10	SOCIOECONOMIC CHARACTERISTICS.....	3-22
3.10.1	Affected Environment .....	3-23
3.10.2	Environmental Consequences .....	3-24
3.11	TRAFFIC AND TRANSPORTATION.....	3-24
3.11.1	Affected Environment .....	3-24
3.11.2	Environmental Consequences .....	3-25
3.12	INFRASTRUCTURE .....	3-25
3.12.1	Affected Environment .....	3-25
3.12.2	Environmental Consequences .....	3-25
3.13	UTILITIES.....	3-26
3.13.1	Affected Environment .....	3-26
3.13.2	Environmental Consequences .....	3-26
3.14	HAZARDOUS MATERIALS AND WASTES .....	3-26
3.14.1	Affected Environment .....	3-26
3.14.2	Environmental Consequences .....	3-27
3.15	VISUAL AND AESTHETIC RESOURCES .....	3-27
3.15.1	Affected Environment .....	3-27
3.15.2	Environmental Consequences .....	3-28
3.16	SAFETY AND OCCUPATIONAL HEALTH.....	3-28
3.16.1	Affected Environment .....	3-28
3.16.2	Environmental Consequences .....	3-29

3.17	RECREATIONAL FACILITIES .....	3-29
3.17.1	Affected Environment .....	3-29
3.17.2	Environmental Consequences .....	3-29
3.18	CUMULATIVE EFFECTS .....	3-30
4.0	FINDINGS AND CONCLUSIONS.....	4-1
4.1	UNAVOIDABLE ADVERSE IMPACTS.....	4-1
4.2	BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES .....	4-2
4.3	PERMITS AND OTHER REQUIREMENTS.....	4-2
4.4	CONCLUSION.....	4-3
5.0	REFERENCES.....	5-1
6.0	ACRONYMS AND ABBREVIATIONS.....	6-1

**FIGURES**

Figure 1-1:	Project Location Map .....	1-2
Figure 2-1:	Proposed Action Layout .....	2-2
Figure 3-1:	Wetlands and Resource Protections Areas .....	3-10
Figure 3-2:	Floodplains .....	3-12
Figure 3-3:	Soils .....	3-19

**TABLES**

Table 1-1:	NBI Condition State Ratings .....	1-3
Table 1-2:	Compliance with Federal Environmental Statutes and Executive Orders .....	1-7
Table 3-1:	Ambient Air Quality Standards .....	3-3
Table 3-2:	Emissions for Permitted Stationary Sources in 2018 (tons) .....	3-5
Table 3-3:	Total Annual Emissions from the Proposed Action .....	3-7
Table 3-4:	Subwatersheds of the Dogue Creek Watershed .....	3-8
Table 3-5:	Projects Near Dogue Creek Bridge.....	3-30
Table 4-1:	Summary of Impacts of the Proposed Action and the No Action Alternative.....	4-3

**APPENDICES**

- Appendix A: Draft Routine Bridge Inspection Report, Facility Number: 01590, NBI Structure No.: DAPMDWBEL001590, Ft. Belvoir, VA
- Appendix B: Agency Coordination
- Appendix C: Air Quality Record of Non-Applicability
- Appendix D: Draft Joint Permit Application
- Appendix E: Coastal Zone Federal Consistency Determination

**THIS PAGE INTENTIONALLY LEFT BLANK**

## **1.0 PURPOSE AND NEED**

### **1.1 INTRODUCTION**

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, and 32 Code of Federal Regulations (CFR) Part 651, Fort Belvoir has prepared an Environmental Assessment (EA) to evaluate potential environmental and cultural effects associated with the proposed rehabilitation of the Dogue Creek Bridge.

### **1.2 STUDY AREA LOCATION**

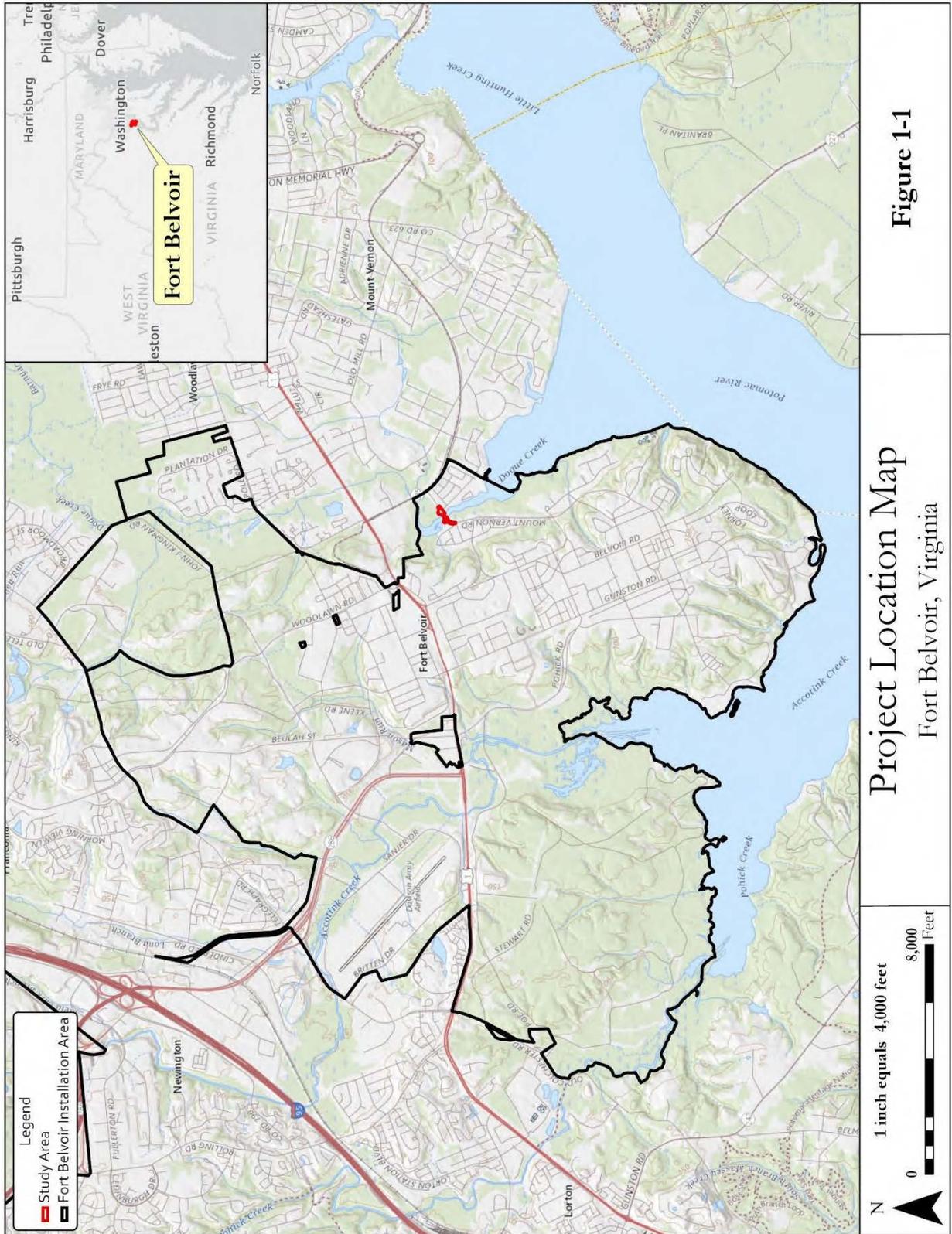
Dogue Creek Bridge is a vehicular and pedestrian bridge located along Mount Vernon Road to the west of Walker Gate on the South Post of Fort Belvoir (Figure 1-1). Mount Vernon Road connects to Mount Vernon Memorial Hwy (Route 235) outside of Walker Gate, an access control point for entering onto Fort Belvoir's Main Post. Route 235 is a significant roadway that links a mixture of commercial and residential uses, as well as, offers access to public transportation to and from Fort Belvoir. Vehicle count reports were taken from 4 December to 17 December 2017 and recorded an average of 4,930 vehicles per work day entering and exiting Fort Belvoir through Walker Gate and crossing Dogue Creek Bridge (Fort Belvoir, 2017).

Dogue Creek Bridge provides the most direct vehicular and pedestrian means for connecting the main portion of Fort Belvoir's South Post with an approximately 68 acre parcel of South Post located on the east side of Dogue Creek. This approximately 68 acre parcel that is contiguous to South Post and only separated from it by Dogue Creek includes Walker Gate, a major access point to South Post; a residential area known as River Village; and the Garrison's marina facilities. Emergency response vehicles frequent Walker Gate for access to residential surroundings and ease of access to South Post. The bridge and its current location ensures that emergency response times are within allowable limits. By vehicle, the only other way to access this approximately 68 acre parcel from the main portion of South Post is to exit Fort Belvoir through another gate, drive on public roads, and re-enter at Walker Gate.

### **1.3 BACKGROUND**

Dogue Creek Bridge consists of two-vehicular lanes and a pedestrian walkway. A steel grid construction placed into position in 1958, Dogue Creek Bridge includes steel trusses and floor beams with concrete abutments. The top of the bridge is not joined together with lateral cross braces, characteristic of a pony truss bridge. Instead, it is a single span metal truss, with isosceles triangular panels with verticals on alternating panel points. The bridge measures 160 feet in length and has a width of 32 feet. Documentation indicates that 80 cubic yards of steel reinforced concrete were required for the bridge abutments. Additionally, a special design feature of this bridge was the use of approximately 10,000 self-locking rib bolts that required the design and fabrication of specialized wrenches.

**Figure 1-1: Project Location Map**



**Figure 1-1**  
**Project Location Map**  
 Fort Belvoir, Virginia

Dogue Creek Bridge was rehabilitated in the 1980’s. A 1981 *Castle* newspaper article stated that the rehabilitation work was necessary because “the superstructure of the bridge has rusted and deteriorated.” Each of the supporting beams were replaced and the entire bridge was sandblasted and painted. A temporary Bailey Bridge was erected to provide access over Dogue Creek while the bridge was being repaired.

Extensive rehabilitation work also occurred in 1997. Work included the replacement of deteriorated or missing bearings and truss connection bolts, the installation of new guardrails, and the cleaning and painting of all structural steel. The 1997 project also included the replacement of deteriorated timber planks on the existing deck walkway and the replacement of the existing sidewalk at each pedestrian approach.

A routine inspection of the Dogue Creek Bridge was performed by personnel of PRIME AE Group, Inc. on 14 November 2018 in accordance with CFR, Title 23, Part 650, Subpart C – National Bridge Inspection Standards (NBIS) and AR 420-1 *Army Facility Management*, Chapter 7 *Transportation Infrastructure and Dams* (Appendix A). The inspection found Dogue Creek Bridge is in poor condition overall (NBI Rating = 4). See Table 1-1 for NBI Condition State Ratings.

**Table 1-1: NBI Condition State Ratings**

<b>Condition State</b>	<b>Condition</b>	<b>Physical Description</b>
9	Excellent	A new bridge.
8	Very good	No problem noted.
7	Good	Some minor problems.
6	Satisfactory	Structural elements show some minor deterioration.
5	Fair	All primary structural elements are sound but may have minor section loss, deterioration, spalling or scour.
4	Poor	Advanced section loss, deterioration, spalling, scour.
3	Serious	Loss of section, etc. has affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	Critical	Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed structural support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	Imminent failure	Major deterioration or loss of section in critical structural component or obvious vertical or horizontal movement affecting structural stability. Bridge is closed to traffic but corrective action may put back in light service.
0	Failed	Out of service. Beyond corrective action.

Dogue Creek Bridge's condition has not changed significantly since the previous inspection on 14 November 2016. The following is a list of the most important findings:

- No Military Load Classification posting signs in place;
- Civilian posting signs do not meet current standards;
- No Type 3 Object Markers in place;
- Bridge railings and approach guardrail transitions do not meet current Virginia Department of Transportation (VDOT) standards;
- Section loss and missing/broken bars throughout steel grid deck;
- Holes due to section loss throughout steel curbs;
- Timber sidewalks have several rotten planks and areas of severe section loss throughout stringers;
- Compression joint seal at North Abutment has failed; and
- Areas of corrosion and severe section loss throughout superstructure.

Based on these deficiencies, it was recommended that rehabilitation and repairs be made to the bridge.

#### **1.4 PURPOSE AND NEED FOR THE PROPOSED ACTION**

Personnel of PRIME AE Group, Inc. conducted an inspection of the Dogue Creek Bridge on 14 November 2018. A report was prepared in February 2019. According to this inspection, Dogue Creek Bridge is in poor condition. If action is not taken, the bridge will continue to deteriorate and will eventually be unsafe for vehicle and/or pedestrian traffic. This situation could either result in closure of the bridge due to safety concerns or a potentially catastrophic failure causing injury or fatality. The approximately 68 acre parcel of South Post located east of Dogue Creek will be isolated from the main portion of South Post, resulting in the loss of Walker Gate as an access point to all of South Post and increasing traffic at the other South Post access points. Walker Gate would serve only as an access point for River Village and the marina facilities.

The purpose of the Proposed Action is to prevent further deterioration of the Dogue Creek Bridge by repairing and rehabilitating it to meet the National Bridge Inspection Standards and Army Regulation (AR) 420-1. Repairing and rehabilitating the bridge will improve safety conditions for vehicle and pedestrian traffic. With Dogue Creek Bridge remaining in place and safe for vehicle and pedestrian traffic, traversing Dogue Creek will continue to be possible for the people who use Walker Gate as an access point to South Post, the residents of River Village, and patrons of the marina.

#### **1.5 THE NEPA PROCESS**

NEPA established the national policy for the environment and the Council on Environmental Quality (CEQ), and provides for the consideration of environmental issues in federal agency planning and decision-making. To implement the NEPA policies, CEQ promulgated *the Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR Parts 1500-1508, referred to as the CEQ Regulations). Both NEPA and the CEQ Regulations require that federal agencies establish procedures to comply with the intended purpose

of NEPA. Both also require federal agencies to encourage and facilitate public involvement as part of the NEPA process.

Army procedures to comply with NEPA are set forth in 32 CFR Part 651, *Environmental Analysis of Army Actions*. As such, these regulations establish the Army policies and responsibilities to integrate environmental considerations early in the decision making process. Instructions on preparing NEPA documentation and carrying out public and agency coordination are provided in the subject regulations.

Under the guidance provided in NEPA and in 32 CFR Part 651, either an Environmental Impact Statement (EIS) or an EA must be prepared for a major federal action. Actions that are determined to be exempt by law, emergencies, or categorically excluded do not require the preparation of an EA or EIS. If an action may significantly affect the environment, a Notice of Intent to prepare an EIS is issued. The contents of an EA include the need for the proposed action and alternatives, environmental consequences of the proposed action and alternatives, and documentation of agency coordination.

An evaluation of the environmental consequences of the proposed action and alternatives includes direct, indirect, and cumulative effects, as well as qualitative and quantitative (where possible) assessment of the level of significance of these effects. The EA results in either a Finding of No Significant Impact (FNSI) or a Notice of Intent (NOI) to prepare an EIS. If Fort Belvoir determines that this proposed action may have a significant impact on the quality of the human environment, then an EIS will be prepared.

## **1.6 AGENCY AND PUBLIC PARTICIPATION**

### **1.6.1 Scoping**

Fort Belvoir corresponded with the U.S. Fish and Wildlife Service (USFWS) and the Virginia Department of Historic Resources (VDHR) along with several other agencies and interested parties. Coordination with Architectural Review Agencies has and will occur throughout the process. These agencies and stakeholders include (but are not limited to) VDHR and the National Capital Planning Commission (NCPC). All correspondence is included in Appendix B.

### **1.6.2 EA Public Review**

Public participation opportunities with respect to this EA and decision making on the Proposed Action are guided by 32 CFR Part 651. The EA was made available to the public for 30 days, along with a Draft FNSI. A Notice of Availability was published on {insert date} in the Fort Belvoir Eagle, Springfield Connection, Mount Vernon Gazette, Washington Times, and Washington Post Fairfax Edition with comments due on {insert date}. Copies of the EA and Draft FNSI were available for review at the MWR Library, Fort Belvoir, Virginia; the Lorton Branch of the Fairfax County Library in Lorton, Virginia; and the Sherwood Regional Branch, John Marshall Branch, and the Kingstowne Branch of the Fairfax County Library in Alexandria, Virginia. Copies of the EA and Draft FNSI were also available for review at <https://home.army.mil/belvoir/index.php/about/Garrison/directorate-public-works/environmental-division>.

## 1.7 ENVIRONMENTAL LAWS AND REGULATIONS

This EA has been prepared in accordance with the NEPA as amended (Title 42, United States Code [USC] §4321 et seq.), NEPA-implementing regulations of the Council on Environmental Quality (40 Code of Federal Regulations [CFR] Parts 1500–1508), and the Army’s NEPA implementing regulations (32 CFR Part 651, *Environmental Analysis of Army Actions*).

Army decisions that affect environmental resources and conditions occur within the framework of numerous laws, regulations, and Executive Orders (EO). Some of these authorities prescribe standards for compliance while others require specific planning and management actions to protect environmental values potentially affected by Army actions. Key provisions of appropriate statutes and EOs are described in more detail throughout the text of this EA and are listed in Table 1-2. Fort Belvoir is in full compliance of all appropriate statutes and EOs.

**Table 1-2: Compliance with Federal Environmental Statutes and Executive Orders**

<b>ACTS</b>
American Indian Religious Freedom Act of 1987 (42 United States Code [U.S.C.] ch. 21 subch. I §§1996 & 1996a)
Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469-469c)
Archaeological Resources Protection Act, as amended (16 U.S.C. §§470aa-470mm)
Bald and Golden Eagle Protection Act (16 U.S.C. §668 et seq.)
Clean Air Act, as amended (42 U.S.C. ch. 85, subch. I §7401 et seq.)
Clean Water Act, as amended (33 U.S.C. ch. 23 §1151)
Coastal Zone Management Act (16 U.S.C. ch. 33 §1451 et seq.)
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. §9601 et seq.)
Emergency Planning and Community Right-to-Know Act (42 U.S.C. ch. 116 §§11001-11050)
Endangered Species Act of 1973, as amended (16 U.S.C. ch. 35 §1531 et seq.)
Energy Independence and Security Act of 2007 (42 U.S.C. ch. 152 §17001 et seq.)
Energy Policy Act of 2005 (42 U.S.C. ch. 149 §15801 et seq.)
Fish and Wildlife Conservation Act of 1980 (16 U.S.C. §2901 – 2912)
Fish and Wildlife Coordination Act, as amended (16 U.S.C. §661-667e)
Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. ch. 38 §1801 et seq.)
Migratory Bird Treaty Act (16 U.S.C §§703-712, et seq.)
National Environmental Policy Act of 1969 (42 U.S.C. §4321 et seq.)
National Flood Insurance Act of 1968, as amended and Flood Disaster Protection Act, as amended (42 U.S.C. §4001 et seq.)
National Historic Preservation Act of 1966, as amended (16 U.S.C. ch. 1A, subch.II §470 et seq.)
Native American Graves Protection and Repatriation Act of 1979 (25 U.S.C. ch. 32 §3001 et seq.)
Noise Control Act of 1972, as amended (42 U.S.C. §§4901-4918, et seq.)
Occupational Safety and Health Act (29 U.S.C. ch. 15 §651 et seq.)
Resource Conservation and Recovery Act (42 U.S.C. ch. 82 §6901 et seq.)
Safe Drinking Water Act, as amended (42 U.S.C. §300f)
Toxic Substances Control Act of 1976 (15 U.S.C. ch.53, subch. I §§2601-2629)
<b>EXECUTIVE ORDERS</b>
Chesapeake Bay Protection and Restoration (Executive Order [EO] 13508)
Efficient Federal Operations (EO 13834)
Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (EO 12898)
Floodplain Management (EO 11988)
Indian Sacred Sites (EO 13007)
Invasive Species (EO 13112)
Promoting Energy Independence and Economic Growth (EO 13783)
Protection of Children from Environmental Health Risks and Safety Risks (EO 13045)

**THIS PAGE INTENTIONALLY LEFT BLANK**

## **2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

### **2.1 PROPOSED ACTION**

The Proposed Action involves rehabilitating Dogue Creek Bridge by removing and replacing the bridge's superstructure. The bridge's substructure will remain in place. The Proposed Action would involve the following:

- Set up detour route and close bridge to vehicular and pedestrian traffic;
- Install traffic barricades on the east and west sides of existing bridge;
- Trim trees (grubbing not anticipated);
- Remove existing truss bridge and sidewalk structure;
- Clear dirt and debris from abutment beam seats;
- Replace existing bearings;
- Set new bridge superstructure;
- Replace concrete sidewalks at east and west ends of bridge walkway (replace existing concrete sidewalk with new sidewalk);
- Install new W-beam guardrail on bridge and approaches (existing W-beam traffic barrier would be removed); and
- Relocate existing utilities.

Removal and replacement of the superstructure would be completed by use of an approximately 30-foot tall crane placed on Mount Vernon Road. The existing truss bridge would be removed in separate pieces and laid on Mount Vernon Road just behind the crane. This laydown area would also be used for material storage, material handling, bridge assembly and disassembly. The area just south of the laydown area would be used for further material storage, a turnaround for equipment and a secondary crane location. This adjacent area would also be used for a connex for tools, equipment and fuel storage and parking for construction employees (Figure 2-1).

### **2.2 ALTERNATIVES**

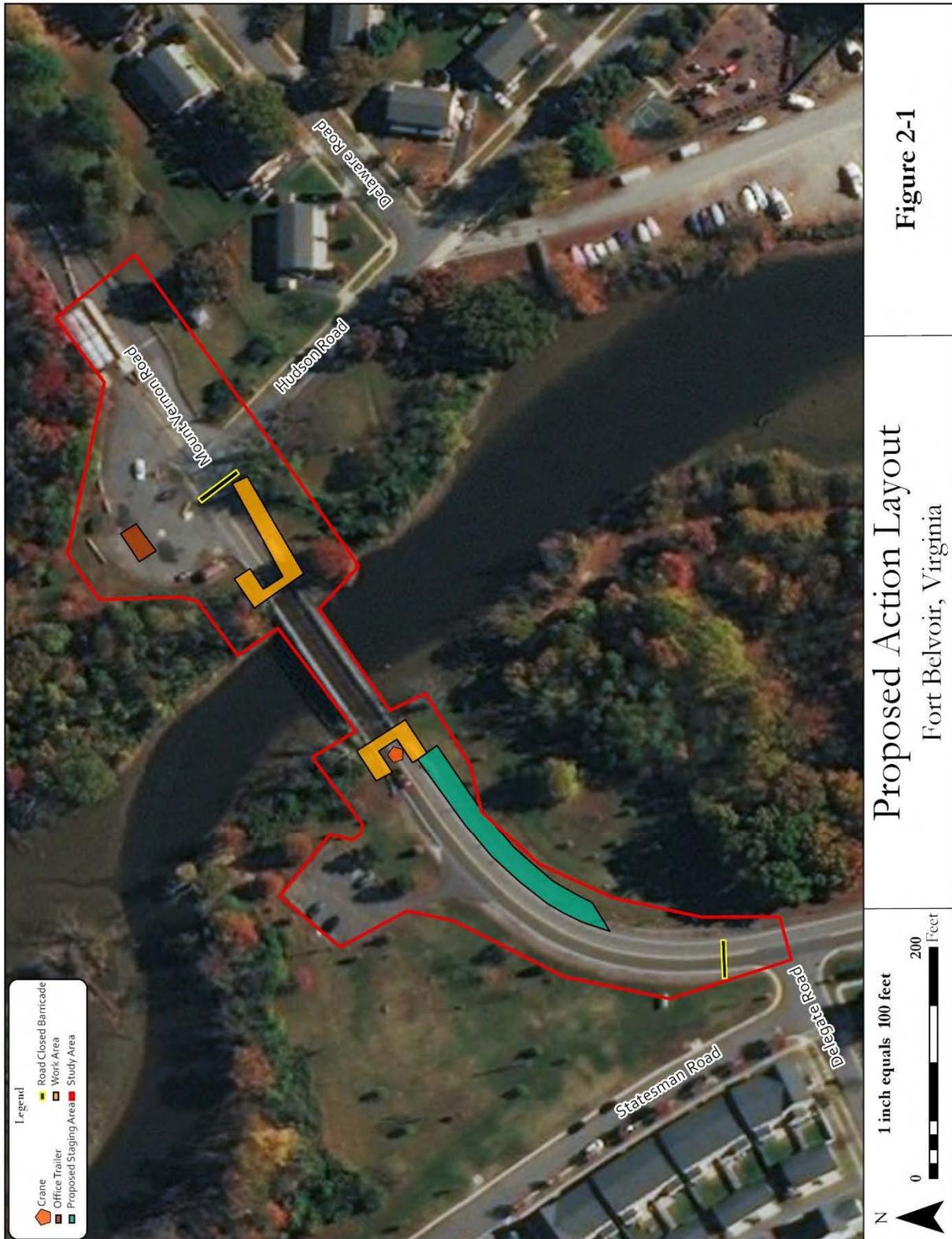
#### **2.2.1 No Action Alternative**

NEPA regulations refer to the continuation of the present course of action without the implementation of, or in the absence of, the Proposed Action, as the "No Action Alternative." Inclusion of the No Action Alternative is the baseline against which Federal actions are evaluated, and is prescribed by the CEQ regulations and 32 CFR 651.

Under the No Action Alternative, Fort Belvoir would forego the proposed rehabilitation of the Dogue Creek Bridge, thereby maintaining the current unsafe conditions and allowing deterioration of the bridge to continue. This situation would eventually result in the permanent closure of the existing bridge due to safety concerns or in a catastrophic failure of the bridge resulting in injury or fatality.

Implementing the No Action Alternative would not satisfy the purpose and need to provide a safe means of traversing Dogue Creek on Fort Belvoir's South Post. Dogue Creek Bridge would

Figure 2-1: Proposed Action Layout



continue to be out of compliance with the National Bridge Inspection Standards and AR 420-1, *Army Facility Management*.

## **2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED**

In selecting possible alternatives for the Dogue Creek Bridge, Fort Belvoir evaluated alternatives that met the following screening criteria:

- Safety
- Fort Belvoir Access Control Points
- Logistics
- Natural Resources
- Economics

The following potential alternatives that might meet the purpose and need were considered:

### **2.3.1 Continue Maintenance**

This alternative would involve continuing to perform minor maintenance on Dogue Creek Bridge. This type of maintenance would prolong the use of the bridge by light vehicles, but would have continued deterioration and safety concerns. More restrictive weight restrictions would be placed on the bridge over time.

### **2.3.2 Close Bridge in Place**

This alternative would prevent all traffic from crossing the bridge and abandon the existing bridge in-place. Emergency response times to the enclaved village would be greater than allowable. This alternative would eliminate one Access Control Point to Main Post – Walker Gate. Without Walker Gate, remaining Access Control Points would not meet the demands of the heavy volume of vehicular traffic entering the installation.

### **2.3.3 New Crossing in New Location**

This alternative would include creating a new access to post from Walker Gate around the north/west sides of George Washington Village. With locations of George Washington Village, River Village, and adjacent private properties, the existing location of Dogue Creek Bridge is the only feasible option. This alternative would involve significant disturbance through natural areas including Dogue Creek, wetlands and other environmentally sensitive areas. This alternative would not be economically feasible, as it would not be cost effective to create a new access to post from Walker Gate around the north/west sides of George Washington Village.

### **2.3.4 Replace Substructure and Superstructure**

This alternative would entail full replacement of the substructure and approach slabs in addition to replacing the existing steel superstructure with a new steel superstructure. This alternative would also include: new bearings and expansion joints at both ends of the bridge, approach railings on

all four corners of the bridge, and a pedestrian walkway on the downstream side of the bridge. This alternative would create extensive environmental impacts during construction.

## 3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

### 3.1 INTRODUCTION

This chapter identifies the affected environment and to disclose the potential environmental consequences of the Proposed Action and the No Action Alternative.

The affected environment includes the existing conditions of the environmental resources that may be potentially impacted by the alternatives. The first step in describing the affected environment is to establish the geographic area where potential impacts are expected to take place by identifying a study area. The study area is the geographic area where the potential impacts of the alternatives retained for further study are analyzed. The extent of the study area depends upon the environmental resource being evaluated. For the purposes of this EA, the study area is the Dogue Creek Bridge and vicinity around the bridge, as illustrated in Figure 2-1.

The potential effects of the alternatives (Proposed Action and No Action Alternative) on the affected environment are also assessed within this section of the EA. The method used for evaluating the overall importance of effects, also referred to as impacts, is based on the following three fundamental criteria:

1. Nature (beneficial or adverse);
2. Duration (short-term or long-term);
3. Intensity (negligible, minor, moderate, significant).

**Nature of Impact.** The nature of the impact can be described as beneficial or adverse. Beneficial impacts enhance the quality or access to a resource, while adverse impacts degrade the quality or limit access to the resource.

**Duration of Impact.** The duration of an impact can be short-term or long-term.

**Intensity of Impact.** The intensity of an impact concerns the scale or size of the impact on a resource. Intensity is evaluated as negligible, minor, moderate, or significant. A description of each measure of intensity is as follows:

- *Negligible.* This term indicates that the environmental impact is barely perceptible or measurable, remains confined to a single location, and will not result in a sustained recovery time for the resource impacted (days to months).
- *Minor.* This term indicates that the environmental impact is readily perceptible and measurable; however, the impact will be temporary and the resource should recover in a relatively short period of time.
- *Moderate.* This term indicates that the environmental impact is perceptible and measurable, and may not remain localized, impacting areas adjacent to the proposed action. Under the impact, recovery of the resource may require several years or decades.

- *Significant.* This term indicates significant impacts would occur. Under a significant impact, a resource may not recover and mitigation measures are considered to minimize the impact.

### 3.2 RESOURCES NOT EVALUATED IN THIS ENVIRONMENTAL ASSESSMENT

To the extent possible, analyses of the various resources presented in this EA are streamlined based on the anticipated level of potential impact. The focus of this EA is on the potential environmental impacts associated with the proposed project to rehabilitate Dogue Creek Bridge by removing and replacing the bridge's superstructure. The following resource areas are not analyzed in this EA because the Proposed Action either has no potential to affect them or the potential impacts would be negligible:

- **Groundwater** – The Federal Safe Drinking Water Act, as amended in 1986, provides for protection of groundwater drinking supplies. Groundwater is not used as a potable water supply at Fort Belvoir or in adjacent areas. Potable water on-post is obtained from Fairfax County Water Authority (a non-profit water utility). Minimal excavation and grading, and minimal change in impervious surface would occur. Groundwater resources would not be disturbed and therefore is not analyzed in this EA.
- **Land Use** – CEQ regulations for implementing NEPA require consideration of a Federal action on future land uses, as well as land use plans. Fort Belvoir is depicted as being zoned R-C (Residential-Conservation) on Fairfax County's Official Zoning Map, although it is a U.S. Military Installation. Implementation of the Proposed Action would not impact current or future land use because bridge rehabilitation and telecommunications relocation would not change land use designations from the Fort Belvoir plan. The NCPC, which provides planning guidance for federal land and building in the National Capital Region, will be afforded the opportunity to review this EA to further ensure that the Proposed Action is compatible with federal land use goals and initiatives. As a result, impacts to land use are not analyzed in this EA.
- **Geology and Topography** – The natural geologic character and the general topography of the project area would be only negligibly impacted under the Proposed Action. Minimal excavation, filling, or grading of land is required under the Proposed Action and no long-term impacts to geology and topography are anticipated. As a result, impacts to geology and topography are not analyzed in this EA.

### 3.3 AIR QUALITY

Air Quality is protected by the Clean Air Act (CAA). In the following sections, air quality in and around the Bridge are described, applicable laws and regulations are explained, and potential impacts are disclosed. The study area for this analysis includes Fairfax County as a portion of the Washington, D.C., Maryland-Virginia airshed.

### 3.3.1 Affected Environment

The U.S. Environmental Protection Agency (USEPA) defines ambient air in 40 CFR Part 50 as: “that portion of the atmosphere, external to buildings, to which the general public has access.” In compliance with the 1970 CAA and the 1977 and 1990 CAA Amendments, the USEPA has promulgated National Ambient Air Quality Standards (NAAQS). The NAAQS were enacted for the protection of the public health and welfare, allowing for an adequate margin of safety. To date, the USEPA has issued NAAQS for the following criteria pollutants: carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), particulate matter (particles with a diameter less than or equal to a nominal 10 micrometers [PM<sub>10</sub>] and particles with a diameter less than or equal to nominal 2.5 micrometers [PM<sub>2.5</sub>]), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), and lead (Pb).

#### 3.3.1.1 Air Quality General Conformity

Federal regulations designate Air Quality Control Regions (AQCRs) in violation of the NAAQS as nonattainment areas. According to the severity of the pollution problem, nonattainment areas can be categorized as marginal, moderate, serious, severe, or extreme. Severity categories have not yet been applied to PM<sub>2.5</sub> nonattainment areas. The USEPA classifies AQCR 47, which includes Fairfax County, as in marginal nonattainment for O<sub>3</sub> and as in nonattainment for PM<sub>2.5</sub>. Fairfax County is in attainment for all other criteria pollutants. AQCR 47 was previously in nonattainment for CO, however, that portion of the airshed does not include Fairfax County.

AQCR 47 is also in the Ozone Transport Region. The Ozone Transport Region includes states in the northeast United States that must adhere to stricter conformity thresholds for nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs), which are precursors for O<sub>3</sub>.

The NAAQS for PM<sub>2.5</sub> and O<sub>3</sub> are listed in Table 3-1.

**Table 3-1: Ambient Air Quality Standards**

Pollutant	Federal Standard	Virginia Standard
PM <sub>2.5</sub> – 24-hour average	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>
Ozone – 8-hour average	0.070 ppm	0.075 ppm

Sources: USEPA (2019b), Commonwealth of Virginia (2012)

Notes: µg/m<sup>3</sup> – micrograms per cubic meter; ppm – parts per million

To regulate the emission levels resulting from a project, federal actions located in nonattainment or maintenance areas are required to demonstrate compliance with the general conformity guidelines established in 40 CFR Part 93, *Determining Conformity of Federal Actions to State or Federal Implementation Plans* (the Rule).

AQCR 47 is in nonattainment for O<sub>3</sub> and PM<sub>2.5</sub>; therefore, a General Conformity Rule applicability analysis to evaluate any impact to air quality is required. A summary of the analysis results is presented below, while detail of the methodology and calculations can be found in Appendix C. Emissions have been estimated for the O<sub>3</sub> precursor pollutants NO<sub>x</sub> and VOCs, along with PM<sub>2.5</sub>. Annual emissions for these compounds were estimated for the project actions (bridge demolition and construction) and compared to the *de minimis* levels established in the Rule. The *de minimis*

level for marginal O<sub>3</sub> nonattainment areas is 100 tons per year for NO<sub>x</sub> and 50 tons per year for VOCs. Sources of NO<sub>x</sub> and VOCs associated with the proposed project would include emissions from construction equipment and construction worker commuter vehicles.

On July 11, 2006 USEPA established *de minimis* levels for PM<sub>2.5</sub>. The final rule established 100 tons per year as the *de minimis* emission level for directly emitted PM<sub>2.5</sub> and each of the precursors that form it (sulfur dioxide [SO<sub>2</sub>], NO<sub>x</sub>, VOCs, and ammonia). This 100 tons per year threshold applies separately to each precursor, meaning that if an action's direct or indirect emissions of PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>x</sub>, VOC, and ammonia cumulatively exceed 100 tons per year, but the emissions of no single precursor exceeds 100 tons per year, a general conformity determination would not be required. Neither the USEPA nor Virginia have found VOCs or ammonia to be a significant precursor of PM<sub>2.5</sub> in AQCR 47; therefore, VOCs and ammonia are not required to be evaluated for PM<sub>2.5</sub> under the Rule. Ammonia is not further addressed in this EA (VOCs are addressed as an O<sub>3</sub> precursor).

### 3.3.1.2 Air Permit Requirements

#### **Title V Permit**

The Virginia Department of Environmental Quality (VADEQ) administers a program for permitting the construction and operation of new, existing, and modified stationary sources of air emissions in Virginia. Air permitting is required for many industries and facilities that emit regulated pollutants. The VADEQ sets permit rules and standards for emissions sources on the basis of the age and size of the emitting units, attainment status of the region where the source is located, dates of equipment installation and/or modification, and type and quantities of pollutants emitted.

As a major stationary source for emissions, Fort Belvoir operates under a Title V Permit. The current installation-wide Title V Permit had an expiration date of March 21, 2008, but because Fort Belvoir submitted a renewal application by the regulatory deadline, the current permit does not expire until the VADEQ either issues or denies a renewal permit, which it has not done to date. All terms and conditions of the Title V Permit issued on March 21, 2003, remain in effect. The installation is required to submit a comprehensive emission statement annually.

### 3.3.1.3 Air Emissions at Fort Belvoir

As part of its Title V Permit, Fort Belvoir calculates permanent source emissions annually. Construction and vehicle emissions are not included in the calculation of annual emissions because these emission sources are temporary and not regulated by Title V of the CAA. Total emissions from significant sources at Fort Belvoir for 2018 are shown in Table 3-2.

**Table 3-2: Emissions for Permitted Stationary Sources in 2018 (tons)**

<b>SO<sub>2</sub></b>	<b>CO</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>NO<sub>x</sub></b>	<b>VOC</b>
<b>0.13</b>	<b>21.35</b>	<b>2.01</b>	<b>2.00</b>	<b>46.44</b>	<b>2.60</b>

Source: Fort Belvoir (2019)

Note: Emission totals do not include emissions from stationary sources that are not significant under Title V and/or otherwise subject to permit terms or restrictions.

### 3.3.1.4 Greenhouse Gases

There is broad scientific consensus that humans are changing the chemical composition of the earth's atmosphere. Activities, such as fossil fuel combustion, deforestation, and other changes in land use, are resulting in the accumulation of trace greenhouse gases (GHGs), such as CO<sub>2</sub>, in our atmosphere. An increase in GHG emissions is said to result in an increase in the earth's average surface temperature, which is commonly referred to as global warming. Global warming is expected, in turn, to affect weather patterns, sea level, ocean acidity, chemical reaction rates, and precipitation rates, all of which is commonly referred to as climate change.

GHGs include water vapor, CO<sub>2</sub>, methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), O<sub>3</sub>, and several hydrocarbons and chlorofluorocarbons (CFCs). Each GHG has an estimated global warming potential, which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth's surface. A gas's global warming potential (GWP) provides a relative basis for calculating its carbon dioxide equivalent (CO<sub>2</sub>e), which is a metric measure used to compare the emissions from various GHGs based upon their global warming potential. CO<sub>2</sub> has a global warming potential of 1 and is therefore the standard to which all other GHGs are measured. CH<sub>4</sub> is estimated to have a GWP of 28-36 over 100 years. CH<sub>4</sub> emitted today lasts about a decade on average, which is much less time than CO<sub>2</sub>, but CH<sub>4</sub> also absorbs much more energy than CO<sub>2</sub>. The net effect of the shorter lifetime and higher energy absorption is reflected in the GWP. The CH<sub>4</sub> GWP also accounts for some indirect effects, such as the fact that CH<sub>4</sub> is a precursor to ozone, and ozone is itself a GHG. N<sub>2</sub>O has a GWP 265-298 times that of CO<sub>2</sub> for a 100-year timescale. N<sub>2</sub>O emitted today remains in the atmosphere for more than 100 years, on average. CFCs, hydrofluorocarbons, hydrochlorofluorocarbons, perfluorocarbons and sulfur hexafluoride are sometimes called high-GWP gases because, for a given amount of mass, they trap substantially more heat than CO<sub>2</sub>. The GWPs for these gases can be in the thousands or tens of thousands (USEPA, 2019a).

Water vapor is a naturally occurring GHG and accounts for the largest percentage of the greenhouse effect. However, it has a short residence time in the atmosphere and little water vapor occurs in the high, cold regions of the atmosphere from which infrared radiation escapes and where changes in water vapor could be of concern for climate change. Therefore, anthropogenic increases in water vapor are of negligible concern to global climate. Next to water vapor, CO<sub>2</sub> is the second-most abundant GHG. Uncontrolled CO<sub>2</sub> emissions from power plants, heating sources, and mobile sources are a function of the power rating of each source, the feedstock (fuel) consumed, and the source's net efficiency at converting the energy in the feedstock into other useful forms of energy (e.g., electricity, heat, and kinetic). Because CO<sub>2</sub> and the other GHGs are relatively stable in the atmosphere and essentially uniformly mixed throughout the troposphere and stratosphere, the climatic impact of these emissions does not depend upon the source location on the earth (i.e., regional climatic impacts/changes will be a function of global emissions).

## Regulatory Climate

In April 2007, the U.S. Supreme Court determined that the USEPA has the regulatory authority to list GHGs as pollutants under the federal CAA. Congress has considered numerous proposals and bills to regulate GHGs but has not adopted any legislation.

Currently, federal agencies address emissions of GHGs by reporting and meeting reductions mandated in laws, executive orders, and policies. The most recent of these are EO 13834, *Efficient Federal Operations*, of May 17, 2018.

The Energy Policy Act of 2005, Energy Independence and Security Act of 2007, and EO 13834 require an installation to adhere to specific energy improvements, which address waste reduction and improvements in efficiency. Specifically, the DoD Strategic Sustainability Performance Plan contains strategies to reduce energy waste and improve efficiency (DoD, 2015).

## Baseline Greenhouse Gas Emissions at Fort Belvoir

GHG emission sources at Fort Belvoir include vehicle use, boilers, chillers, water heaters, and emergency generators. CO<sub>2</sub> emissions at Fort Belvoir in 2018 were 26,216 metric tons. The emission total is the amount reported annually under the requirements of 40 CFR Part 98 and does not include GHG emissions from mobile sources or emergency generator use.

### 3.3.2 Environmental Consequences

#### 3.3.2.1 *Impacts of No Action Alternative*

Under the No Action Alternative, there would be no rehabilitation of the Dogue Creek Bridge. No additional emissions would be generated from Fort Belvoir, and as a result, there would be no impacts to air quality.

#### 3.3.2.2 *Impacts of Proposed Action*

A General Conformity Applicability Analysis was performed for the Proposed Action, which estimated the level of potential air emissions (CO, NO<sub>x</sub>, VOC, SO<sub>2</sub>, and PM<sub>2.5</sub>). Appendix C contains a detailed description of the assumptions and methodology used to estimate the potential emissions for the project.

Emissions related to the demolition and construction of the Bridge project would be temporary and only occur during the time it takes to complete the project. Emissions from the demolition and construction are shown in Table 3-3. Emissions would occur in a period of less than twelve months, but are presented in tons per year for comparison with Conformity thresholds. The temporary impacts to air quality would be minor temporary impacts that are not regionally or locally significant.

**Table 3-3: Total Annual Emissions from the Proposed Action**

Construction Activity	Total Annual Emissions [2018] (tons per year)				
	CO	NO <sub>x</sub>	VOC	PM <sub>2.5</sub>	SO <sub>2</sub>
Use of chainsaws	0.07	0.00	0.02	0.00	0.000
Construction vehicles	2.19	10.16	0.82	0.72	0.004
<b>Conformity Threshold</b>	50.00	100.00	100.00	100.00	100.00
<b>Total Emissions from Demolition and Construction</b>	<b>2.25</b>	<b>10.16</b>	<b>0.84</b>	<b>0.72</b>	<b>0.004</b>

### Greenhouse Gases

Under the Proposed Action Alternative, short-term GHG emissions would be produced as a result of the project activities. The contribution to CO<sub>2</sub> emissions is estimated at 376.8 metric tons, approximately a one percent increase over the GHG level reported for Fort Belvoir for 2018. As such, this increase is short-term and essentially negligible. Long-term GHG emissions would not increase under this alternative; therefore, the Proposed Action Alternative would have no significant, adverse impacts on GHG emissions.

The conclusion is that air quality impacts would not be significant on either a local or regional level from the Bridge activity of the Proposed Action. All emissions would be below *de minimis* levels and would also not be regionally significant for the pollutants of concern. The Record of Non-Applicability is in Appendix C.

## 3.4 WATER RESOURCES

Water resources are protected by the Clean Water Act (CWA), EOs, and state laws and regulations. In the following sections, the water resources around Dogue Creek Bridge are described, applicable laws and regulations are explained, and potential impacts are disclosed. The study area for this analysis includes portions of Dogue Creek and wetlands adjacent to where construction would occur.

### 3.4.1 Affected Environment

#### 3.4.1.1 Surface Water

Fort Belvoir is located on the Potomac River, within the Chesapeake Bay watershed. There are three named tributaries to the Potomac River on the installation: Accotink Creek, Pohick Creek, and Dogue Creek. The Dogue Creek watershed is approximately 19.5 square miles in area, and includes four subwatersheds (Table 3-4). Approximately 5.8 square miles (30 percent) of the watershed lies within Fort Belvoir. Total stream length within the watershed is 31.9 miles (Fairfax County, 2011).

**Table 3-4: Subwatersheds of the Dogue Creek Watershed**

<b>Subwatershed</b>	<b>Area (square miles)</b>	<b>Stream Length (miles)</b>
Barnyard Run	2.4	5.3
Mainstem	5.9	10.2
North Fork	4.4	9.8
Piney Run	2.7	6.6

Source: Fairfax County (2011)

Dogue Creek and Potomac River are two tidal freshwater surface water resources in the vicinity of the proposed project (Chesapeake Bay Program, 2019). Water depths in Dogue Creek near the proposed project are mapped as approximately 4 feet deep mean low water.

Laws and regulations have been implemented to protect water quality. The CWA establishes water quality standards for restoring and maintaining the integrity of the nation’s water. “Water quality standards define the goals for a water body by designating its uses, setting criteria to measure attainment of those uses, and establishing policies to protect water quality from pollutants.”

Section 305(b) of the CWA, requires that states report on the status of water quality of their navigable waters every two years. Section 303(d) requires that states identify impaired waters; waters where the water quality does not meet standards for the designated use. Section 303(d) also requires that the state identify impaired waters for which Total Maximum Daily Loads (TMDLs) will be developed to improve water quality. A TMDL “is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards.”

Water quality problems in the waterways on the installation relate mostly to urbanization, including issues related to bacteria, changes in stream morphology from increased impervious surface, and sedimentation. Within Fort Belvoir, according to the 2016 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report (VADEQ, 2018), Dogue Creek is listed as impaired for recreation because of the presence of *Escherichia coli* (*E. coli*) bacteria. A TMDL has been developed for Polychlorinated Biphenyls (PCBs) in the tidal Potomac River and its tidal tributaries (Interstate Commission on the Potomac River Basin, 2007). The watershed load allotment for Dogue Creek Watershed is 20.2 grams of PCB per year (Commonwealth of Virginia, 2012).

#### 3.4.1.2 *Wetlands and Chesapeake Bay Preservation Areas*

Construction in jurisdictional wetlands and streams is regulated by the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the CWA as implemented in regulations contained in 33 CFR, Parts 320–330. Impacts to state waters, including wetlands, are regulated by the Virginia Water Protection Permit Program (9 Virginia Administrative Code [VAC] 25-210-10 et seq.), which serves as Virginia’s 401 Water Quality Certification Program for federal Section 404 Permits, administered by the Virginia Department of Environmental Quality. The Virginia Marine Resources Commission regulates activities in submerged lands, marine fisheries, and coastal resources (tidal wetlands and coastal sand dunes/beaches) under the Code of Virginia Title 28.2, Chapters 12, 13, and 14.

Virginia's Chesapeake Bay Preservation Act (CBPA), Virginia Code 10.1-2100 et seq., and its implementing Chesapeake Bay Preservation Area Designation and Management Regulations, 9 VAC 10-20-120 et seq., protect certain lands, designated as Chesapeake Bay Preservation Areas, which, if improperly developed, could result in substantial damage to the water quality of the Chesapeake Bay and its tributaries. Projects that occur on lands that are protected under the CBPA must be consistent with the Act and may be subject to the performance criteria for Resource Protection Areas (RPAs), as specified in 9 VAC 10-20-130 of the regulations. Under the CBPA, Fairfax County adopted a Chesapeake Bay Preservation Ordinance that designates RPAs and Resource Management Areas (RMAs) within in the county.

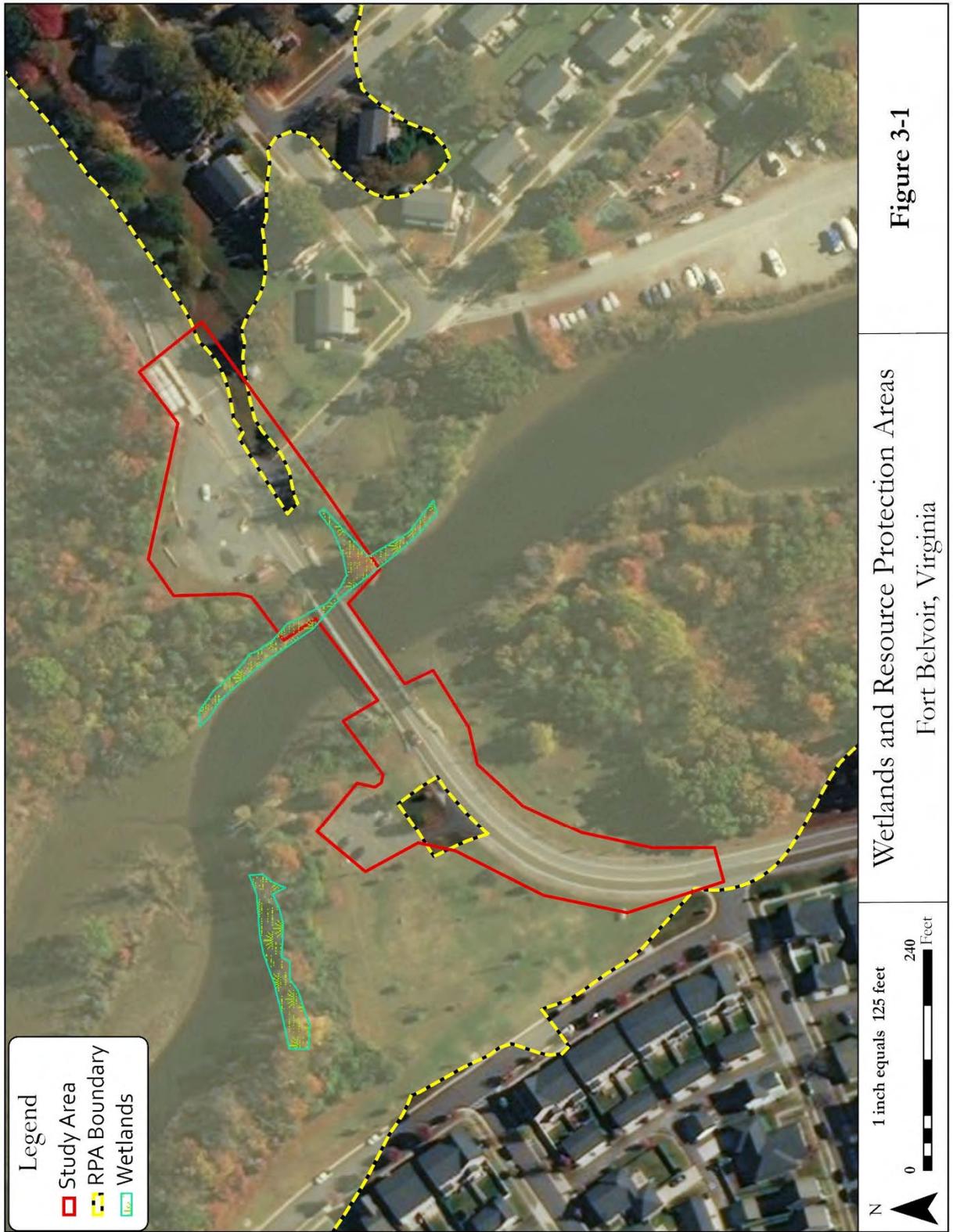
RPAs are sensitive lands at or near the shoreline or streambank that have an intrinsic water quality value due to the ecological and biological processes they perform. RPAs include tidal wetlands, tidal shores, nontidal wetlands connected by surface flow and contiguous to tidal wetlands or tributary perennial streams, and a minimum 100-foot buffer landward of the previous RPA components, riparian areas, and major floodplains. All lands not designated as RPAs in Fairfax County are classified as RMAs. Fort Belvoir recognizes the RPA designation; but, being a federal entity, is not subject to the provisions of the Fairfax County ordinance. As a result, Fort Belvoir does not use RPA maps produced by Fairfax County; instead, the Army delineates the RPA on the installation. In addition to RPA areas, Fort Belvoir places a 35-foot buffer around all intermittent streams (Figure 3-1).

A field delineation of wetlands was performed as part of the project by KCI Technologies on 23 January 2019. The delineation included the limits of wetlands for the east shore of Dogue Creek. One riverine tidal wetland was mapped within the Project Area. The wetland is approximately 0.132 acres and runs along the stream bank directly below Dogue Creek Bridge both to the north and south. The wetlands along the west shore of Dogue Creek were mapped from another Fort Belvoir project delineation in 2016. KCI Technologies field verified this delineation during their 2019 delineation. The 2016 delineation extended from the JoAnn Blanks Child Development Center (CDC) to Jadwin Road. This delineation covered roadways to the west of Dogue Creek, the west shore of Dogue Creek and areas around the Dogue Creek Marina. One palustrine emergent wetland was mapped just north of the Dogue Creek Bridge Project Area. The wetland is approximately 0.103 acres. Figure 3-1 shows the limits of wetlands for the Project Area and adjacent vicinity.

#### 3.4.1.3 *Floodplains*

EO 11988, *Floodplain Management*, was issued "... in order to avoid, to the extent possible, the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative...". The EO was issued in furtherance of NEPA, the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973. Floodplains were defined as follows in EO 11988:

Figure 3-1: Wetlands and Resource Protections Areas



“The term ‘floodplain’ shall mean the lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year.”

One of the amendments to EO 11988 regards the definition of a floodplain. Instead of establishing the floodplain based on the area subjected to a one percent or greater chance in any given year, the floodplain shall be:

(i) the elevation and flood hazard area that result from using a climate-informed science approach that uses the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate science. This approach will also include an emphasis on whether the action is a critical action as one of the factors to be considered when conducting the analysis;

(ii) the elevation and flood hazard area that result from using the freeboard value, reached by adding an additional 2 feet to the base flood elevation for non-critical actions and by adding an additional 3 feet to the base flood elevation for critical actions;

(iii) the area subject to flooding by the 0.2 percent annual chance flood; or

(iv) the elevation and flood hazard area that result from using any other method identified in an update to the FFRMS [Federal Flood Risk Management Standard].

Dogue Creek has a floodplain near the project area on the west and east banks mapped by the Federal Emergency Management Agency (FEMA). On the 2010 Flood Insurance Rate Map, FEMA identifies the base flood elevation for the 1 percent annual chance flood event (“100-year floodplain”) as 10 feet elevation (North American Vertical Datum of 1988). The location of the project in relationship to mapped floodplains are shown in Figure 3-2.

### **3.4.2 Environmental Consequences**

#### *3.4.2.1 Impacts of No Action Alternative*

Under the No Action Alternative, there would be no rehabilitation of the Dogue Creek Bridge. As a result, minor long-term adverse impacts from lead-based paint (LBP) dropping into Dogue Creek from the existing bridge are anticipated.

#### *3.4.2.2 Impacts of Proposed Action*

##### *Surface Water*

Streams would not be disturbed from the Proposed Action as there are no proposed activities within Dogue Creek and appropriate temporary erosion and sediment control measures would be employed for work near Dogue Creek.

Figure 3-2: Floodplains

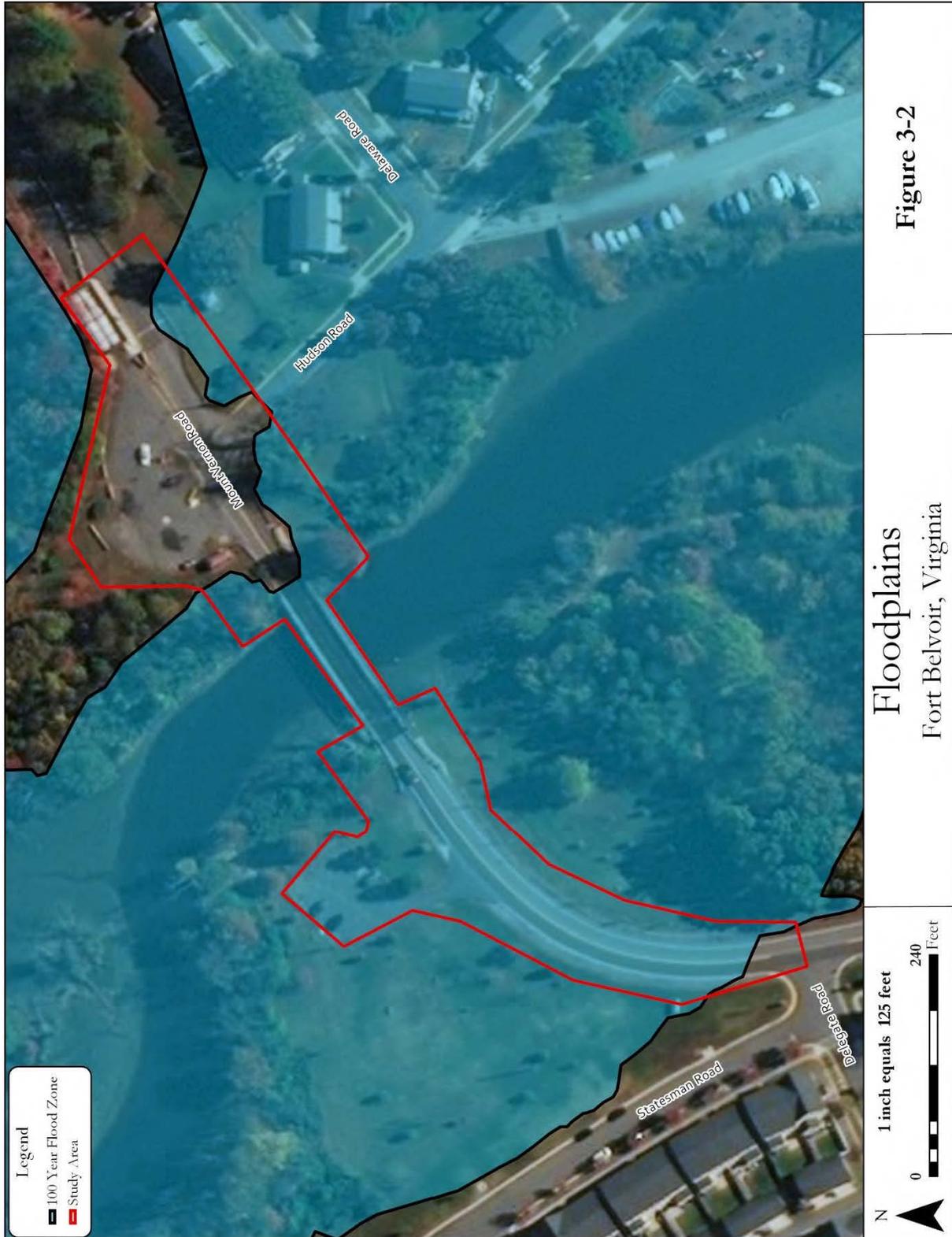


Figure 3-2

Floodplains  
Fort Belvoir, Virginia

Minor short-term adverse impacts would occur from the Proposed Action on surface water quality from bridge dust, earth disturbance, potential for increased erosion and stormwater runoff. Appropriate temporary erosion and sediment control measures will be employed to minimize impacts to water quality from disturbance during construction. Monitoring of the outfalls would occur to ensure water quality is maintained during and after construction.

#### *Wetlands and Chesapeake Bay Preservation Areas*

The Proposed Action would avoid all wetlands; therefore, would result in no direct impacts to wetlands. A Joint Permit Application (JPA) will be filed with the VADEQ. A copy of the Draft JPA may be found in Appendix D. Minor short-term adverse impacts to RPAs are anticipated since Dogue Creek and associated tidal wetlands buffers are located within the project area. Fort Belvoir recognizes the RPA designation and in addition to RPA areas, Fort Belvoir places a 35-foot buffer around all intermittent streams.

#### *Floodplains*

The Proposed Action is located within the 100-year floodplain, but would not result in an impact to the floodplain with regard to water storage capacity or elevation. The Proposed Action would not involve building a new structure in the floodplain, but rather, replacing a structure with the same footprint. The rehabilitated bridge would continue to lie in the one percent annual chance coastal flood hazard area, but would not result in any increases to flood elevations on Dogue Creek. A Finding of No Practicable Alternative (FONPA) is not required.

### **3.5 BIOLOGICAL RESOURCES**

Potential impacts to plants, wildlife, and fish are evaluated in accordance with applicable regulations including, but not limited to, the Endangered Species Act of 1973 (ESA), the Fish and Wildlife Conservation Act of 1980, the Magnuson-Stevens Fishery Conservation and Management Act, as amended, the Migratory Bird Treaty Act, and EO 13112, *Invasive Species*. The study area for biological resources includes the proposed project site, which encompasses Dogue Creek Bridge and vicinity.

#### **3.5.1 Affected Environment**

##### *3.5.1.1 Vegetation*

Approximately 60 percent of Fort Belvoir (Main Post and Fort Belvoir North Area combined) is undeveloped and supports predominantly forest communities. The other major native vegetation community types are tidally flooded marsh and shrub-scrub communities. Vegetative cover in the remaining 40 percent of Fort Belvoir consists primarily of improved grounds associated with the installation's developed land uses. Within the metropolitan Washington DC area, Fort Belvoir represents a significant tract of native vegetation in terms of size, diversity, and position relative to the location of off-post tracts of native vegetation.

The proposed project area and adjacent areas are mostly urban land, forested and some areas are located within the 100-year floodplain of Dogue Creek and non-tidal wetlands. None of the vegetative communities in the proposed project area are considered rare by the Commonwealth of Virginia (USAG Fort Belvoir, 2018).

### 3.5.1.2 *Fish and Wildlife*

The quality of the natural habitat on Fort Belvoir is reflected by the diverse fish and wildlife documented on post. Fort Belvoir provides habitats for 43 species of mammals, 277 species of birds, 32 species of reptiles, 27 species of amphibians and 65 species of fish. More than 3,300 acres of land have been set aside on Fort Belvoir for wildlife including the Accotink Bay Wildlife Refuge, the Jackson Miles Abbott Wildlife Refuge, T-17 Refuge, the Accotink Creek Conservation Corridor, and Fort Belvoir Forest and Wildlife Corridor. Fort Belvoir also participates in the Partners in Flight Program. Partners in Flight is a partnership between federal and state agencies, industry, non-governmental organizations and others, with the goal of conserving North American birds (USAG Fort Belvoir, 2018).

The proposed project area is not within any wildlife corridors, refuges, or Partners in Flight habitat areas, though all of the upper Dogue Creek stream corridor is within the Jackson Miles Abbott Wildlife Refuge. With the broad variety of habitats and food sources adjacent to Dogue Creek, some of the wildlife species associated with forests on Fort Belvoir can be found near the project site.

A number of aquatic species and their habitat exist in Dogue Creek and wetlands within or near the proposed project. A full listing of species and habitat are found in the installation's INRMP (USAG Fort Belvoir, 2018).

### 3.5.1.3 *Rare, Threatened and Endangered Species*

The ESA requires federal agencies to ensure that their action is not likely to jeopardize the continued existence of any endangered or threatened species (animal and plant species) or result in the destruction or adverse modification of designated critical habitat. Special status species include species listed under the ESA as endangered, threatened, proposed endangered, proposed threatened, candidate, and species of special concern; and species listed by the Virginia Department of Conservation and Recreation as endangered, threatened, or rare.

#### **Federally-Listed Species**

The USFWS Information for Planning and Consultation (IPaC) website lists only the northern long-eared bat (*Myotis septentrionalis*) (NLEB) as potentially present in the project area. The northern long-eared bat is listed as a threatened species under the ESA, due largely to the impacts of White-nose Syndrome. It roosts singly or in colonies underneath bark or in crevices of live and dead trees during the summer. During the winter, the bats hibernate in caves and mines. Female northern long-eared bats roost in maternity colonies in the summer months, and typically give birth between late May and late July. The proposed project area is within the White Nose Syndrome Buffer Zone for the NLEB. The White Nose Syndrome (WNS) Buffer Zone identifies the portion

of the range of the NLEB within 150 miles of the boundaries of U.S. counties or Canadian districts where WNS or the associated fungus has been detected. Under Section 7 of the ESA, federal agencies must consult with the USFWS to ensure that any action they authorize, fund, permit or carry out does not jeopardize the existence of a listed species. Surveys to date have not located the NLEB near the Dogue Creek Bridge. Per USFWS, tree removal is prohibited during the northern long-eared bat active season from April 15 through September 15. Section 7 consultation letters can be found in Appendix B.

## State-Listed Species

Fort Belvoir has seven state-listed species that have been documented or potentially occur on the installation. These species include the threatened wood turtle (*Glyptemys insculpta*), the threatened peregrine falcon (*Falco peregrinus*), the endangered little brown bat (*Myotis lucifugus*), the endangered tri-colored bat (*Perimyotis subflavus*), the threatened NLEB, the endangered small whorled pogonia (*Isotria medeoloides*) and the endangered Atlantic sturgeon (*Acipenser oxyrinchus*). The two state-listed species of concern associated with the Proposed Action are the wood turtle and small whorled pogonia.

The wood turtle has been documented on Fort Belvoir in several locations. The wood turtle is found primarily in mesic deciduous woodlands in and near clear creeks in Fairfax County. The wood turtle is very mobile and is a highly terrestrial species that typically uses creeks for hibernacula and mating and uses the riparian zones around the creeks during its more terrestrial stages.

The small whorled pogonia is a federal threatened and state endangered forest dwelling orchid that has been identified previously at Fort Belvoir North Area. The status of the small whorled pogonia on Fort Belvoir is currently unknown because of its unusual life-cycle of up to five year dormancy periods. Surveys have been conducted within selected areas, but have not yielded any additional colonies elsewhere on Fort Belvoir. These surveys, done in support of land planning, have identified areas of high-quality and medium-quality small whorled pogonia habitat.

A Habitat Assessment for the wood turtle and small whorled pogonia was performed by USACE on 11 March 2019. The survey was performed by walking/inspecting the study area via two (2) surveyors for two (2) hours; for a total of four (4) labor hours. The study area was approximately two (2) acres and included existing roadways, parking areas, maintained lawn and several trees located on the banks of Dogue Creek. Trees on the banks of Dogue Creek include American sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), tree-of-heaven (*Ailanthus altissima*), which is an invasive species, bald cypress (*Taxodium distichum*), and tulip poplar (*Liriodendron tulipifera*). Invasive bush honeysuckle (*Lonicera tartarica*), Japanese honeysuckle (*Lonicera japonica*) and Asiatic bittersweet (*Celastrus orbiculatus*) were dense in the understory along the banks of Dogue Creek. No suitable habitat for either the wood turtle or small whorled pogonia was observed within the study area. Additionally, the habitat observed at the site would not generally be considered preferred for the wood turtle or small whorled pogonia (USACE, 2019).

The bald eagle (*Haliaeetus leucocephalus*) was delisted by the Commonwealth of Virginia in 2013; however, it is still protected by the Bald and Golden Eagle Protection Act. The bald eagle

occurs on the installation and the proposed project area lies within the Potomac River Eagle Concentration Area, but no known nesting or roosting sites are located in or around the proposed project area.

### **3.5.2 Environmental Consequences**

#### *3.5.2.1 Impacts of No Action Alternative*

Under the No Action Alternative, there would be no rehabilitation of the Dogue Creek Bridge. As a result, no potential adverse impacts to biological resources, including vegetation, wildlife, and RTE species would occur. All biological resources would continue to be managed in accordance with the Fort Belvoir Integrated Natural Resources Management Plan.

#### *3.5.2.2 Impacts of Proposed Action*

##### *Vegetation*

Minor short-term adverse vegetation impacts would be expected from the trimming of trees within the project areas. Tree branches should grow back.

##### *Fish and Wildlife*

Minor short-term adverse impacts are expected to fish and wildlife due to the construction activities and tree trimming. Tree trimming would be avoided from April 1 to July 15 to avoid disturbance, removal, damage or destruction to birds and their nests, eggs, and hatchlings per the Migratory Bird Treaty Act. Tree branches should grow back.

##### *Rare, Threatened and Endangered Species*

To avoid impacts to the northern long-eared bat, tree trimming would only be performed outside of the closure period, from April 15 to September 15, per the Section 7 consultation (Appendix B). Therefore, impacts to the northern long-eared bat would be avoided.

### **3.6 COASTAL ZONE**

The Coastal Zone Management Act of 1972 (16 USC §1451 et seq., as amended) provides assistance to the states, in cooperation with federal and local agencies, for developing land and water use programs in coastal zones. Section 307 (c)(1) of the Coastal Zone Management Act Reauthorization Amendment stipulates that federal projects that affect land uses, water uses, or coastal resources of a state's coastal zone must be consistent to the maximum extent practicable with the enforceable policies of that state's federally approved coastal management plan. The Commonwealth of Virginia has developed and implemented a federally approved Coastal Resources Management Program describing current coastal legislation and enforceable policies. There are enforceable policies for:

- Fisheries management
- Subaqueous lands management
- Wetlands management
- Dune management
- Non-point source pollution control
- Point source pollution control
- Shoreline sanitation
- Air pollution control
- Coastal lands management

### **3.6.1 Affected Environment**

Virginia’s Coastal Zone includes all of Fairfax County, including Fort Belvoir; therefore, federal actions at Fort Belvoir are subject to federal consistency requirements. The VADEQ serves as the lead agency for consistency reviews. The project area is characterized as open water of Dogue Creek, the creek shoreline, built environment transportation infrastructure (bridge and roads), with some areas of forest, wetlands, and previously disturbed land. While there are streambanks adjacent to the project area, there is no coastline present, nor dunes.

### **3.6.2 Environmental Consequences**

#### *3.6.2.1 Impacts of No Action Alternative*

The No Action Alternative would have no impacts on the Virginia Coastal Zone or future implementation of the Coastal Resources Management Plan.

#### *3.6.2.2 Impacts of Proposed Action*

The proposed bridge rehabilitation would be consistent with Virginia’s Coastal Resources Management Policies. Non-point source pollution would be managed through the use of temporary erosion and sediment control measures defined in the approved Erosion and Sediment Control Plan, as appropriate. Minor short-term impacts to surface water and air quality are anticipated for the duration of construction activity. The Coastal Zone Consistency Determination will be submitted to the Commonwealth of Virginia as an appendix in the Final EA/Draft FNSI. Complete results of this coordination, including recommendations from the VADEQ, when received, will be presented in Appendix E.

## **3.7 NOISE**

### **3.7.1 Affected Environment**

The Noise Control Act of 1972 (42 USC 4901 *et seq.*) directs Federal agencies to comply with applicable Federal, State, interstate and local noise control regulations. Noise is considered to be an undesirable sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive, stationary or transient. Sound varies by intensity and frequency and the human ear responds differently to different

frequencies. Sound pressure level is described in decibels (dB) and is used to quantify sound intensity. Hertz is used to quantify sound frequency. “A-weighted” decibels (dBA) approximate the perception of sound by humans and describe steady noise levels, though few noises are constant.

A change of a few dBA in noise level is barely perceptible to most people; however, a 10-dBA change is considered a substantial change, and these thresholds are used to estimate a person’s likelihood of perceiving a change in noise levels.

The Fairfax County Noise Ordinance (Adopted 2015, Applicability Effective 2016) allows certain levels of noise during daytime, but minimizes nighttime noise to protect residents. Maximum sound levels are assigned based on land use and zoning district classification, time of day and whether sound is continuous or impulse. Outdoor construction is not subject to (i.e., is exempt from) the ordinance between 7:00 AM – 9:00 PM Monday through Friday and 9:00 AM – 9:00 PM on weekends and holidays provided that a maximum decibel level of 90 dBA is not exceeded in residential areas.

The major sources of noise at Fort Belvoir include aircraft overflights arriving and departing Ronald Reagan Washington National Airport, and traffic on the Installation and on adjacent streets and highways. Impulse noise is also generated by occasional ceremonial recorded bugle calls, and firings of rifle and artillery (cannon blasts and recorded bugle calls during ceremonies). In general, noise generated within the Installation is short term in nature.

### **3.7.2 Environmental Consequences**

#### *3.7.2.1 Impacts of No Action Alternative*

Under the No Action Alternative, there would be no rehabilitation of the Dogue Creek Bridge and no changes to the local noise environment. As a result, no potential adverse impacts would occur.

#### *3.7.2.2 Impacts of Proposed Action*

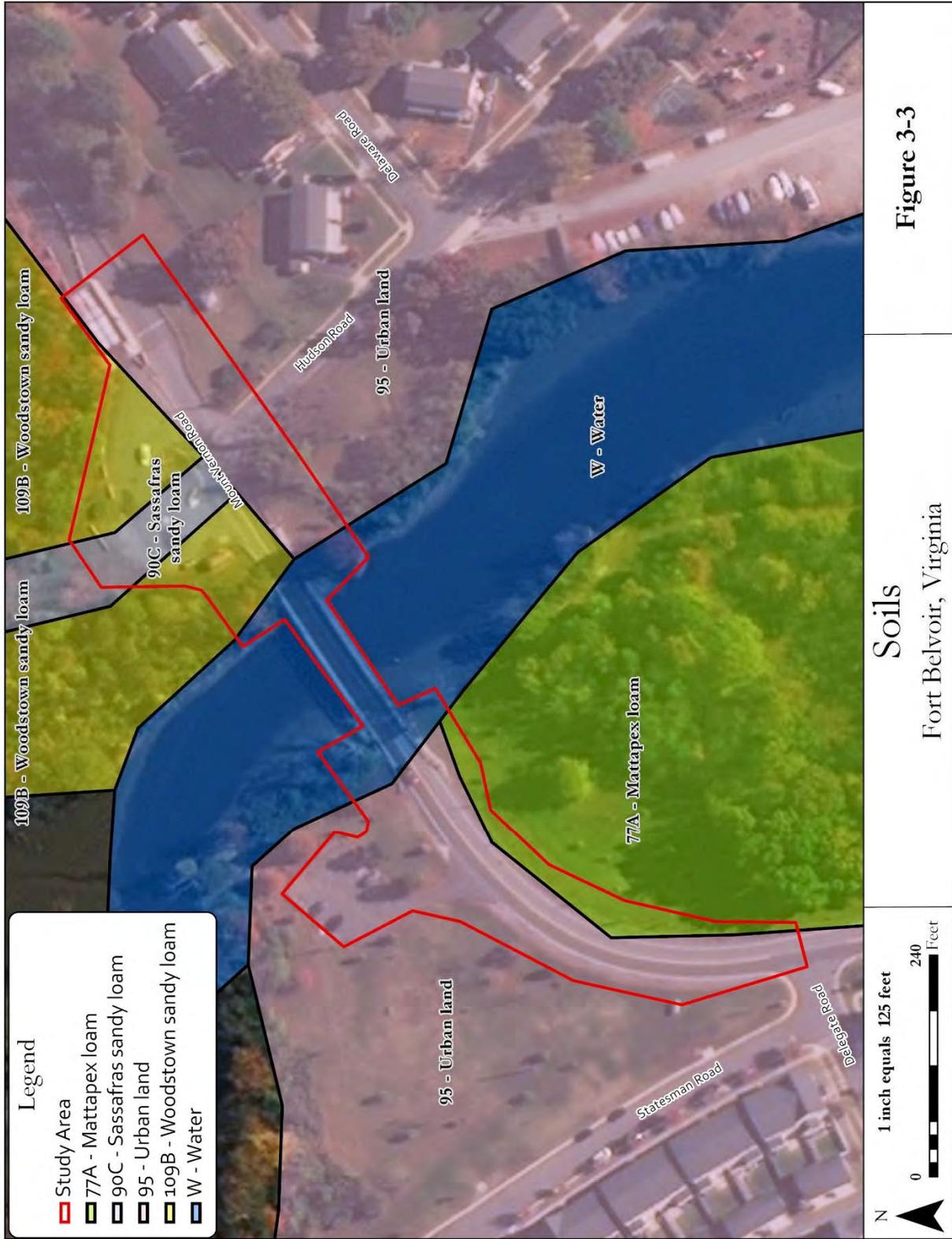
Minor short-term adverse impacts are expected to occur throughout construction. The short-term, adverse effects would include temporary increases in noise levels resulting from heavy equipment and machinery that could affect Fort Belvoir personnel and residential sensitive noise areas. Construction would occur within daytime hours. Noise levels under the Proposed Action are expected to be consistent with operations at a military site.

## **3.8 SOILS**

### **3.8.1 Affected Environment**

There are five soil types present in the project area including, Urban land, Woodstown sandy loam (2 to 7 percent slopes), Sassafras sandy loam (7 to 15 percent slopes), Water and Mattapex loam (0 to 2 percent slopes) (Figure 3-3). Of the project area over 50 percent of the area is described as urban built-up land which includes primarily ridge top or other well-drained, flatter areas that have

Figure 3-3: Soils



been minimally to drastically disturbed by construction and development over the years. Areas within the urban built-up unit that are not under buildings or paving are vegetated, generally with lawn and landscape trees and shrubs.

### **3.8.2 Environmental Consequences**

#### *3.8.2.1 Impacts of No Action Alternative*

No impacts to soils would occur under the No Action Alternative.

#### *3.8.2.2 Impacts of Proposed Action*

Minor short-term adverse impacts are expected to soils; due to impacted soils in the project area being previously disturbed there will be minimal impact from the minor grading for the rehabilitation of the bridge.

### **3.9 CULTURAL RESOURCES**

Cultural resources include “historic properties” as defined by the National Historic Preservation Act of 1966 (NHPA), “cultural items” as defined by the Native American Graves Protection and Repatriation Act of 1979 (NAGPRA), “archaeological resources” as defined by the Archaeological Resource Protection Act of 1979 (ARPA), “sacred sites” as defined by EO 13007, *Indian Sacred Sites*, to which access is afforded under the American Indian Religious Freedom Act of 1987 (AIRFA), and collections and associated records as defined in 36 CFR 79.

Archaeological resources consist of locations where prehistoric or historic activity measurably altered the earth or produced deposits of physical remains. Architectural resources include standing buildings, districts, bridges, dams, and other structures of historic significance. Traditional cultural properties include locations of historic occupations and events, historic and contemporary sacred and ceremonial areas, prominent topographical areas that have cultural significance, traditional hunting and gathering areas, and other resources that Native Americans or other groups consider essential for the persistence of their traditional culture.

Several federal laws and regulations—including the NHPA of 1966, the Archaeological and Historic Preservation Act of 1974, the AIRFA of 1978, the ARPA of 1979, and the NAGPRA of 1990—have been established to manage cultural resources. In order for a cultural resource to be considered significant, it must meet one or more of the following criteria for inclusion on the National Register of Historic Places (NRHP):

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

A) that are associated with events that have made a significant contribution to the broad patterns of our history; or

B) that are associated with the lives of persons significant in our past; or

C) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D) that have yielded, or may be likely to yield, information important in prehistory or history.

An undertaking is any federal action with the potential to affect historic properties. In order to identify historic properties with the potential to be affected by an undertaking, federal agencies must define the Area of Potential Effect (APE). The APE is the geographic area in which an undertaking may directly or indirectly cause changes in the use or character of a historic property.

### **3.9.1 Affected Environment**

#### *3.9.1.1 Archaeological Resources*

The banks on either side of Dogue Creek Bridge have been previously surveyed for archaeological historic properties. The only site located within the Proposed Action's APE is 44FX0009, which contained both a prehistoric and a historic component; however, the site was determined to be ineligible for the NRHP in 2013 due to disturbed contexts.

#### *3.9.1.2 Architectural Resources*

The only architectural historic property that is located within the Proposed Action's APE is the Dogue Creek Bridge. An NRHP Determination of Eligibility Form, U.S. Army Garrison, Fort Belvoir, Dogue Creek Bridge, Fairfax County, Virginia was completed in 2018 by USACE, Baltimore District. Members of the 497th Engineer Company, 79th Engineer Group (Construction) are credited with the construction and placement of Dogue Creek Bridge in November 1958. The 588th Engineer Battalion was also involved in the process: they were responsible for constructing the (initially dirt) road leading from the post Headquarters to the bridge.

Records indicate that individual bridge segments were produced during the late 1940s and that the design, material selection, and construction of Dogue Creek Bridge was used as an educational tool for Engineers based at Fort Belvoir. Construction of the 160 foot, class 80, steel bridge started in July of 1958 when a special pontoon cube barge measuring 107 feet by 42 feet was constructed at Tompkins Basin. Eighty cubic yards of steel reinforced concrete was used to construct the bridge abutments. When the bridge was assembled on the barge, it was towed up the Potomac River four miles to the Dogue Creek site by a Landing Craft Mechanized (LCM) -6, or "Mike Boat." Upon completion it was estimated that the finished weight of the bridge was 110 tons. The cantilever pedestrian walkway was added to the bridge sometime between its completion and 1981.

Dogue Creek Bridge was evaluated under the four criteria for eligibility to the National Register of Historic Places, and is eligible under Criteria A and C. Under Criterion A, resources that are

eligible must be associated with events that have made a significant contribution to the broad patterns of our history. A structure that meets Criterion A in the area of military significance is associated with the role of the Army in significant military strategies, development, and/or conflicts. Dogue Creek Bridge is significant as an example of the engineering training that occurred on Fort Belvoir during the period of significance. Fort Belvoir was home to engineers who were up-to-date on the latest bridge construction technology and who used that knowledge to construct Dogue Creek Bridge. This structure contributes to the military significance, planning, and development of Fort Belvoir as a vital link between the south post and the Mount Vernon Memorial Parkway, which allowed easier access to the expansion areas of Fort Belvoir. The period of significance is from the end of WWII, 1945, with the start of the Cold War until the Engineer School moved to Fort Leonard Wood in 1988.

An Army structure eligible under Criterion C is one that embodies the distinctive characteristics of a type, period, or method of construction or that represents the work of a master, or that possesses high artistic value, or that represents a significant and distinguishable entity whose components may lack individual distinction. Dogue Creek Bridge is significant as a representation of the technology, techniques, and materials utilized in bridge construction by the Army during the 1940s and 1950s. Dogue Creek Bridge is one of the few, if not the only surviving mid-20<sup>th</sup> century bridge of its kind left in Virginia. The bridge possesses the significance and integrity necessary for individual inclusion in the National Register of Historic Places.

### **3.9.2 Environmental Consequences**

#### *3.9.2.1 Impacts of No Action Alternative*

Under the No Action Alternative, there would be no rehabilitation of the Dogue Creek Bridge and no changes to cultural resources. As a result, no potential adverse impacts would occur.

#### *3.9.2.2 Impacts of Proposed Action*

Fort Belvoir received concurrence from the State Historic Preservation Office (SHPO) on the determination that the Proposed Action will constitute an adverse effect to historic properties. As a result of this concurrence, Fort Belvoir is continuing the Section 106 consultation with SHPO as well as inviting other groups including the Advisory Council on Historic Preservation, eleven Federally-recognized tribes, Fairfax County and the Mount Vernon Ladies Association to participate in the consultation in accordance with 36CFR800.6(a)(1) of the NHPA.

### **3.10 SOCIOECONOMIC CHARACTERISTICS**

Socioeconomic factors are defined by the interaction or combination of social and economic factors. The relevant factors related to Fort Belvoir include population and housing, economic development, and quality of life/health and safety issues.

### 3.10.1 Affected Environment

#### 3.10.1.1 *Socioeconomics*

As of 2017, Fort Belvoir had a residential population of approximately 7,500, a working population of approximately 40,000 and supported a regional population of approximately 140,000 (USAG Fort Belvoir, 2018).

#### 3.10.1.2 *Environmental Justice*

Environmental Justice addresses the race, ethnicity, and poverty status of populations within the Region of Influence (ROI). The ROI for socioeconomic characteristics includes Fort Belvoir. On 11 February 1994, President Clinton issued EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The EO is designed to focus the attention of federal agencies on the human health and environmental conditions in minority and low-income communities. Environmental Justice analyses are performed to identify potential disproportionate adverse effects from proposed actions and to identify alternatives that might mitigate these effects (CEQ, 1997).

Minority refers to people who classified themselves as American Indian or Alaskan Native; Asian or Pacific Islander; African Americans or Black, not of Hispanic origin; or Hispanic. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population (CEQ, 1997). The Census Bureau defines a “poverty area” as a Census tract with 20 percent or more of its residents below the poverty threshold (Census Bureau, 2016).

Fort Belvoir does not meet the definition of having a minority or impoverished population that could be impacted disproportionately.

#### 3.10.1.3 *Protection of Children*

On 21 April 1997, President Clinton issued EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. This EO directs each federal agency to ensure that its policies, programs, activities, and standards address disproportionate environmental health or safety risks to children that may result from the agency’s actions. EO 13045 recognizes that a growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health and safety risks due to still developing neurological, immunological, physiological, and behavioral systems. Examples of risks to children include increased traffic volumes and industrial- or production-oriented activities that would generate substances or pollutants that children could come into contact with and ingest.

Children are present as residents and visitors (e.g., living in family housing, using recreational facilities) on Fort Belvoir. There are multiple CDCs on Fort Belvoir. The closest to the area of interest is the JoAnn Blanks CDC, located about ½ mile from the bridge. The Army has taken precautions for their safety by a number of means, including limiting access to certain areas, the

use of fencing, and providing adult supervision. Fort Belvoir has playgrounds located near Dogue Creek.

### **3.10.2 Environmental Consequences**

#### *3.10.2.1 Impacts of No Action Alternative*

There would be no impacts to Socioeconomics, Environmental Justice and Protection of Children under the No Action Alternative.

#### *3.10.2.2 Impacts of Proposed Action*

##### *Socioeconomics*

The Proposed Project is situated within the boundaries of Fort Belvoir. Negligible impacts to socioeconomics would be expected from the temporary hiring of construction workers. Once the project is completed these benefits would cease. There would be no long-term impacts from this project. There would be no increase in the permanent workforce.

##### *Environmental Justice*

No impacts to Environmental Justice are expected under the Proposed Action.

##### *Protection of Children*

No impacts to Protection of Children are expected under the Proposed Action.

### **3.11 TRAFFIC AND TRANSPORTATION**

#### **3.11.1 Affected Environment**

Dogue Creek Bridge is a vehicular and pedestrian bridge located along Mount Vernon Road to the west of Walker Gate on the South Post of Fort Belvoir. Mount Vernon Road connects to Mount Vernon Memorial Hwy (Route 235) outside of Walker Gate, an access control point for entering onto Fort Belvoir's Main Post. Route 235 is a significant roadway that links a mixture of commercial and residential uses and offers access to public transportation to and from Fort Belvoir. Vehicle count reports were taken from 4 December to 17 December 2017 and recorded an average of 4,930 vehicles per work day entering and exiting Fort Belvoir through Walker Gate and crossing Dogue Creek Bridge (Fort Belvoir, 2017).

### **3.11.2 Environmental Consequences**

#### *3.11.2.1 Impacts of No Action Alternative*

Under the No Action Alternative, there would be no rehabilitation of the Dogue Creek Bridge. As a result, the bridge would continue to deteriorate and moderate long-term adverse impacts are anticipated, as emergency and other vehicles would no longer be able to use the bridge over time.

#### *3.11.2.2 Impacts of Proposed Action*

Minor short-term adverse impacts during construction from road closures and re-routing of traffic are anticipated. The detour route directs traffic from U.S. Route 1 and Mount Vernon Memorial Highway to the next base access gate. Access to the east side of the bridge will be through the closed gate from Mount Vernon Road. Because of the small area between the bridge and Hudson Road limited construction work will be done on this side. All bridge material deliveries and removal will be from the west side access through the base. Moderate long-term beneficial impacts are anticipated following construction completion due to higher weight restrictions allowing emergency vehicles to use the bridge.

## **3.12 INFRASTRUCTURE**

### **3.12.1 Affected Environment**

Dogue Creek Bridge consists of two-vehicular lanes and a pedestrian walkway. A steel grid construction placed into position in 1958, Dogue Creek Bridge includes steel trusses and floor beams with concrete abutments. The top of the bridge is not joined together with lateral cross braces, characteristic of a pony truss bridge. Instead, it is a single span metal truss, with isosceles triangular panels with verticals on alternating panel points. The bridge measures 160 feet in length and has a width of 32 feet. Documentation indicates that 80 cubic yards of steel reinforced concrete were required for the bridge abutments. Additionally, a special design feature of this bridge was the use of approximately 10,000 self-locking rib bolts that required the design and fabrication of specialized wrenches. A routine inspection of the Dogue Creek Bridge was performed on 14 November 2018 that found the bridge to be in poor condition overall (NBI Rating = 4, see Table 1-1).

### **3.12.2 Environmental Consequences**

#### *3.12.2.1 Impacts of No Action Alternative*

Moderate long-term adverse impacts from continued deterioration of the bridge eventually creating unsafe conditions for vehicle and pedestrian traffic are anticipated.

#### *3.12.2.2 Impacts of Proposed Action*

Moderate long-term beneficial impacts from safety improvements to the bridge are anticipated.

### **3.13 UTILITIES**

#### **3.13.1 Affected Environment**

Verizon and Comcast communications conduits are located on the Dogue Creek Bridge.

#### **3.13.2 Environmental Consequences**

##### *3.13.2.1 Impacts of No Action Alternative*

No impacts to utilities would occur under the No Action Alternative.

##### *3.13.2.2 Impacts of Proposed Action*

Minor short-term adverse impacts from the disconnection and reconnection of telecommunication cables during construction are anticipated. Verizon and Comcast communications conduits currently located on the Dogue Creek Bridge would be temporarily relocated to an overhead pole line. Once construction is complete, permanent conduits would be attached to the bridge and new communications lines would be installed.

### **3.14 HAZARDOUS MATERIALS AND WASTES**

#### **3.14.1 Affected Environment**

Hazardous materials have been defined in AFI 32-7086, *Hazardous Materials Management*, to include any substance with special characteristics which could harm people, plants, or animals. Hazardous waste is defined by Resource Conservation and Recovery Act (RCRA) as any solid, liquid, contained gaseous or semisolid waste, or any combination of wastes that could or do pose a substantial hazard to human health or the environment. Waste may be classified as hazardous due to its toxicity, reactivity, ignitibility, or corrosiveness. Certain types of waste are “listed” or identified as hazardous in 40 CFR 263.

Oversight of hazardous waste issues is provided primarily by the USEPA, as mandated by the Toxic Substances Control Act (TSCA), RCRA, and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and its extension, the Superfund Amendments and Reauthorization Act (SARA). In addition, the Department of Transportation regulates the safe packaging and transporting of hazardous materials, as specified in 49 CFR Parts 171 through 180 and Part 397.

Fort Belvoir conducts its hazardous waste management program in compliance with RCRA. The installation has a Hazardous Waste Management/Waste Minimization Plan and a Master Spill Plan. Fort Belvoir complies with EO 13834, *Efficient Federal Operations*, by promoting the use of products to reduce solid and hazardous waste. In addition, the cleaning and maintenance departments have replaced toxic and hazardous materials with environmentally friendly chemicals and adhere to an Integrated Pest Management Plan. Fort Belvoir, Environmental Division also files

annual hazardous material and toxic chemical reports in compliance with the Emergency Planning and Community Right-to-Know Act.

The Dogue Creek Bridge is painted periodically for maintenance purposes. Based on the age of the bridge, it is likely that paint applied to the bridge in the 1950s-1970s contained LBP.

### **3.14.2 Environmental Consequences**

#### **3.14.2.1 *Impacts of No Action Alternative***

Minor long-term adverse impacts from LBP dropping into Dogue Creek from the existing bridge.

#### **3.14.2.2 *Impacts of Proposed Action***

Minor short-term adverse impacts from disturbance of LBP on bridge are anticipated. Best Management Practices (BMPs) would minimize human health and environmental impacts. Small sections of LBP would be safely removed in the areas that would be disturbed for disassembly (i.e. paint around existing bolts and steel to be cut as parts of the disassembly process). As each section is removed to the staging site the sections would further be reduced in size and loaded onto trucks for transportation to the recycling center. LBP chips from the final disassembly and loading process would be contained in an impervious disassembly area for daily cleaning and safely removed for proper disposal. A silt fence would be placed around the work areas to contain construction debris and protect the stream runoff sediments. Moderate long-term beneficial impacts after construction are anticipated since the bridge will no longer contain any LBP or other hazardous materials and wastes. Proper abatement and removal of the LBP will be performed instead of allowing the LBP to deteriorate into Dogue Creek and the surrounding environment.

### **3.15 VISUAL AND AESTHETIC RESOURCES**

Visual resources consist of elements in both the natural environment and human made structures. Natural environment features include water bodies, vegetation, and mountains. Human made structures include buildings and support infrastructure. These resources impact view planes and influence the general appearance and aesthetic feel of the immediate and surrounding environments. Visual resources are analyzed to determine land use compatibility for new construction projects and the protection of important vistas and view planes.

#### **3.15.1 Affected Environment**

Fort Belvoir is located in a predominantly urban area. Natural visual resources at Fort Belvoir include tree-lined streets, parade grounds, open fields with groves of trees, historical buildings and views of the Potomac River. Fort Belvoir is also located near George Washington's Grist Mill and George Washington's Mount Vernon.

Dogue Creek Bridge is located along Mount Vernon Road to the west of Walker Gate on the South Post of Fort Belvoir. The bridge can be viewed from the installation, by personnel, visitors, local

residents of Fort Belvoir and those using the Fort Belvoir Marina. The bridge may be partially seen from Mount Vernon Memorial Hwy (Route 235).

### **3.15.2 Environmental Consequences**

#### *3.15.2.1 Impacts of No Action Alternative*

No impacts to visual and aesthetic resources would occur under the No Action Alternative.

#### *3.15.2.2 Impacts of Proposed Action*

Minor short-term adverse impacts are anticipated from presence of construction equipment in project area, including an approximately 30 foot crane. The crane will be removed once construction is complete.

### **3.16 SAFETY AND OCCUPATIONAL HEALTH**

The Occupational Safety and Health Act (OSHA) is the primary federal statute for regulating the safety and health of workers in the United States. It establishes worker-protection standards that must be followed to prevent and minimize potential safety and health risks. In Virginia, the OSH Safety Compliance Division enforces state and federal laws and regulations pertaining to worker health and safety. OSH regulations cover potential exposure to a wide range of chemical, physical, and biological hazards and ergonomic stressors. The regulations are designed to control these hazards by eliminating exposure via administrative or engineering controls, substitution, or use of personal protective equipment (PPE).

The health and safety of onsite military and civilian workers are safeguarded by numerous DoD and military branch-specific requirements designed to comply with standards issued by federal OSHA, USEPA, and state OSH agencies. These standards specify health and safety requirements, the amount and type of training required for workers, the use of PPE, administrative controls, engineering controls, and permissible exposure limits for workplace stressors. OSH requirements applicable to the Proposed Action address workers' and public health and safety during and following construction, demolition, and operational activities.

Hazards include transportation, maintenance, and repair activities, and the creation of a noisy environment or a potential fire hazard.

#### **3.16.1 Affected Environment**

On Fort Belvoir, all military and civilian personnel conducting work on post are subject to applicable OSH regulations. Such regulations include those pertaining to the construction and operation of the Proposed Action as promulgated and enforced by the DoD and federal and state regulatory authorities. Fort Belvoir's Directorate of Emergency Services oversees law enforcement, access control, and fire and emergency services on post. Additionally, a military police detachment provides law enforcement and public safety services, including physical security, traffic, canine, and related operations.

### **3.16.2 Environmental Consequences**

#### *3.16.2.1 Impacts of No Action Alternative*

No impacts to safety and occupational health would occur under the No Action Alternative.

#### *3.16.2.2 Impacts of Proposed Action*

Human and environmental health impacts under the Proposed Action include the potential for a physical injury or fatality, or an exposure to a hazardous substance, to occur during construction. Minor short-term adverse impacts to safety and occupational health may occur due to disturbance of LBP on the bridge. LBP identified on the bridge would be removed by licensed contractors in accordance with applicable federal, state, Army, and Fort Belvoir requirements and disposed of at permitted off-post facilities. This would ensure that there would be no construction related or operational long-term adverse impacts due to the removal of from LBP from the bridge. The Proposed Action would represent a moderate long-term beneficial impact on the management of LBP at Fort Belvoir.

## **3.17 RECREATIONAL FACILITIES**

### **3.17.1 Affected Environment**

The principal outdoor recreation activities involving water resources at Fort Belvoir are fishing, canoeing, kayaking, waterfowl hunting, boating, hiking, nature watching (e.g., bird watching) and nature art (e.g., outdoor photography). The use and enjoyment of water resources by each type of activity is predicated on the water resources being in a healthy condition. Dogue Creek Marina provides engineered shoreline facilities, including a boat launch, boat slips and docks, and a marina building for the use of gasoline-powered watercraft. Watercraft such as canoes, kayaks, and car-top boats can be put in at Tompkins Basin. Hiking trails and fishing piers provide access facilities for fishing, waterfowl hunting, hiking, nature watching, and nature art require much simpler access facilities, such as hiking trails and fishing piers (USAG Fort Belvoir, 2018).

### **3.17.2 Environmental Consequences**

#### *3.17.2.1 Impacts of No Action Alternative*

Moderate long-term adverse impacts to recreational activities would occur under the No Action Alternative due to the potential closing of the bridge due to continued deterioration. This would limit access and restrict the use of the area for recreational activities.

#### *3.17.2.2 Impacts of Proposed Action*

Minor short-term adverse impacts to recreational fishing and boating opportunities in the project area would occur due to temporary restriction to recreational navigation traffic under the bridge. Dogue Creek Marina operations would not be impacted.

### 3.18 CUMULATIVE EFFECTS

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

The process outlined by CEQ includes identifying significant cumulative impacts issues, establishing the relevant geographic and temporal (time frame) extent of the cumulative effects analysis, identifying other actions affecting the resources of concern, establishing the cause-and-effect relationship between the Proposed Action and the cumulative impacts, determining the magnitude and significance of the cumulative impacts, and identifying ways in which the agency’s proposal might be modified to avoid, minimize, or mitigate significant cumulative impacts.

CEQ regulations specify that cumulative impacts analyses encompass past, present, and reasonably foreseeable future actions. As a practical matter, the impacts of past actions on Fort Belvoir are already reflected in the conditions that currently exist, as described earlier in this chapter, in the Affected Environment section of each resource topic. For example, past actions on Fort Belvoir that involve construction.

Present and reasonably foreseeable future actions on Fort Belvoir that may have a cumulative impact in combination with the Proposed Action are listed in Table 3-5. In general, this EA considered present and reasonably foreseeable future actions as those that currently exist or are under construction, are the subject of an existing plan or proposal, or have identified funding. Actions beyond that become increasingly speculative and difficult to assess.

**Table 3-5: Projects Near Dogue Creek Bridge**

<b>Project</b>	<b>Details/Description</b>	<b>NEPA Action</b>
Dogue Creek Village Renovation	Renovation of 30 existing units as well as the demolition and reconstruction of 11 existing units.	Environmental Documentation has yet to be prepared
Dogue Creek Playground	Construct a playground and elevated boardwalk trail on existing park land, northeast of the intersection of Mount Vernon Road, Delegate Road and Statesman Road on Fort Belvoir.	Environmental Documentation has yet to be prepared
US Route 1 Intersections with Fairfax County Parkway, Pohick Road and Belvoir Road	Monitor intersections along US Route 1 at Fairfax County Parkway, Pohick Road, and Belvoir Road to determine need for future improvements	Environmental Documentation has yet to be prepared

<b>Project</b>	<b>Details/Description</b>	<b>NEPA Action</b>
Davison Army Airfield (DAAF) Area Development Plan	Proposed facility consolidation consistent with the Real Property Master Plan involving new construction, runway expansion, and demolition of existing structures.	Environmental Impact Statement is being prepared; Notice of Intent issued April 2018
U.S. Route 1 Improvements at Fort Belvoir	Improvement of deficiencies in the 3.4-mile section of U.S. Route 1 (Route 1) between Telegraph Road (Route 611) and Mount Vernon Memorial Highway (Route 235) in Fairfax County, Virginia.	Environmental Assessment (2012); Project Completed
Dewitt Hospital Demolition	Demolish the old Dewitt Army Hospital.	Record of Environmental Consideration (REC) prepared in 2012; Project Completed
Staybridge Suites	Construct a new Hotel.	Environmental Assessment (2012); Project Completed
New Commissary	Construct a new Commissary.	Environmental Assessment (2010); Project Completed
Defense Logistics Agency (DLA) Visitor Control Center	Construct a standard DoD visitor control center for employees and visitors accessing DLA	REC prepared in 2016; Project Completed
Demolition of Buildings 806 & 807	Demolition of two buildings	REC prepared in 2017; Project Completed
Hazardous Tree Removal at Davison Army Airfield (DAAF)	Removal of 16.4 acres of trees intercepting the runway approach clear zones.	Environmental Assessment (2016); Project Completed
National Museum of the US Army (NMUSA)	Construct a national museum facility affecting 74.9 acres of land.	Environmental Assessment (2010); Construction is ongoing
DAAF Skills Training Compound	Construct a permanent compound for DAAF training and operations.	Environmental Assessment (2014); Construction is ongoing
Lieber Gate Access Road and Control Point	A new access control point for North Post from Route 1, which replaces the former Lieber Gate	RPMP EIS (2015); Construction is ongoing
911 <sup>th</sup> Engineering Company Complex	Construct a medium-duty tactical equipment maintenance complex with integrated company operations and administrative space.	Environmental Assessment (2018) and Final FONSI signed August 2019, construction anticipated to begin 2020
Fairfax County Parkway/John J. Kingman Road Intersections & NMUSA Entrance	Grade separate intersections along Fairfax County Parkway at John J. Kingman Road and the NMUSA entrance.	RPMP EIS (2015); Construction is ongoing

## **Air Quality**

The Proposed Action would result in minimal adverse cumulative impacts related to air quality. Short-term adverse impacts are expected through construction activities, but would be minor and therefore no long-term cumulative impacts are anticipated.

## **Water Resources**

### *Groundwater*

Cumulative impacts to groundwater are not anticipated because the Proposed Action would not involve earth disturbance of sufficient depth to directly affect aquifers or involve the storage or appreciable use of materials that could degrade groundwater quality.

### *Surface Water*

Cumulative impacts to surface water from the Proposed Action would be minor. Appropriate temporary erosion and sediment control measures would be employed during construction. Permanent stormwater management BMPs would manage potential increased stormwater runoff would be implemented in compliance with applicable permit requirements. Projects at Fort Belvoir with a land disturbance of greater than 2,500 square feet are required to have ESC and stormwater management plans in compliance with Section 438 of the Energy Independence and Security Act, the Fort Belvoir MS4 permit, Virginia ESC, Stormwater Management and Chesapeake Bay laws and regulations.

### *Wetlands*

The Proposed Action would avoid all wetlands. Other projects at Fort Belvoir avoid impacts to wetlands where possible. Projects that impact wetlands have also minimized impacts to wetlands and completed wetland mitigation to address wetland losses. Thus, minor cumulative impacts are anticipated to wetlands as impacts from this project and all projects on Fort Belvoir are mitigated.

## **Biological Resources**

### *Vegetation*

Dogue Creek Bridge and surrounding area is characterized mostly by urban and forested lands as well as sections of the 100-year floodplain and wetlands of Dogue Creek. Minor short-term adverse vegetation impacts would be expected from the trimming of trees within the project area. Tree branches should grow back. Proposed cumulative projects would follow the Fort Belvoir two for one tree replacement policy and cumulative impacts would therefore be minor.

### *Fish and Wildlife*

Minor short-term adverse impacts are expected to fish and wildlife due to the construction activities and tree trimming. Tree trimming would be avoided from April 1 to July 15 to avoid

disturbance, removal, damage or destruction to birds and their nests, eggs, and hatchlings per the Migratory Bird Treaty Act. Tree branches should grow back. Most of the projects identified in Table 3-5 would occur in developed areas and would have minimal impacts to wildlife and wildlife habitat. Many of the proposed cumulative projects would occur on previously disturbed areas and impacts to wildlife and migratory birds in these areas would be minor. The removal of trees would not create fragmented unsuitable habitat, and would therefore result in minor cumulative impacts to wildlife and migratory birds.

#### *Rare, Threatened and Endangered Species*

No cumulative effects are anticipated to the federally-listed northern long-eared bat as tree trimming would only be performed outside of the closure period, from April 15 to September 15.

#### **Coastal Zone**

The Proposed Action is consistent with the Coastal Zone Management Program, and would abide by current appropriate permits and mitigation requirements. Therefore, there are no anticipated cumulative effects as future projects would also be consistent with the Coastal Zone Management Program.

#### **No Action Alternative**

Implementation of the No Action Alternative would avoid new impacts for all resource areas and would not result in any cumulative impacts to Air Quality, Water Resources, Biological Resources, or the Coastal Zone.

**THIS PAGE INTENTIONALLY LEFT BLANK**

## 4.0 FINDINGS AND CONCLUSIONS

### 4.1 UNAVOIDABLE ADVERSE IMPACTS

Unavoidable impacts are those impacts that Fort Belvoir would experience if the proposed rehabilitation of the Dogue Creek Bridge was implemented under the Proposed Action Alternative. The Proposed Action is required to ensure the bridge meets safety and compliance requirements. The Proposed Action would result in the following impacts:

#### No or negligible impacts:

- Groundwater
- Wetlands
- Floodplains
- Rare, Threatened and Endangered Species
- Coastal Zone
- Land Use
- Geology and Topography
- Socioeconomics
- Environmental Justice
- Protection of Children

#### Minor short-term adverse impacts:

- Air Quality – due to the use of construction equipment during bridge removal and construction
- Noise – due to the use of construction equipment during bridge removal and construction
- Surface Water – due to bridge dust and debris, earth disturbance and potential for increased erosion from clearing dirt and debris from abutments
- Resource Protection Areas – due to Dogue Creek and associated tidal wetlands buffers located in the project area
- Vegetation – due to tree trimming
- Wildlife – due to tree trimming
- Fish and Wildlife – due to noise disturbance during bridge removal and construction
- Soils – due to earth-moving/grading from clearing dirt and debris from abutments and near the laydown area during bridge removal and construction
- Traffic and Transportation – due to road closures and detours during bridge removal and construction
- Utilities – due to disconnection and reconnection of telecommunication cables during bridge removal and construction
- Hazardous Materials and Wastes – due to disturbance of LBP located on the current bridge
- Visual and Aesthetic Resources – due to the use of a crane during bridge removal and construction
- Safety and Occupational Health – due to disturbance of LBP located on the current bridge
- Recreational Facilities – due to blockage of a portion of Dogue Creek during bridge removal and construction

Moderate long-term adverse impacts:

- Cultural Resources – due to the removal of historic property

Moderate long-term beneficial impacts:

- Traffic and Transportation – due to higher weight restrictions on the bridge, allowing emergency vehicles to use the bridge
- Infrastructure – due to upgraded modifications made to the bridge
- Hazardous Materials and Waste – due to the fact the bridge will no longer contain LBP or other hazardous materials and wastes
- Safety and Occupational Health – due to the fact the bridge will no longer contain LBP or other hazardous materials and wastes

No significant cumulative impacts are anticipated. No significant impacts on human health or the environment are expected to result from the Proposed Action.

Under the No Action Alternative, Fort Belvoir would forego the proposed rehabilitation of the Dogue Creek Bridge, thereby maintaining the current unsafe conditions and allowing deterioration of the bridge to continue. This situation would eventually result in the permanent closure of the existing bridge due to safety concerns or in a catastrophic failure of the bridge resulting in injury or fatality.

## **4.2 BEST MANAGEMENT PRACTICES AND MITIGATION MEASURES**

In addition to these BMPs and mitigation measures, all activities would be in compliance with the Federal Consistency Determination and the recommendations from the VADEQ; and Occupational Safety and Health Administration regulations and standard operating procedures to ensure the safety of all installation and construction personnel.

## **4.3 PERMITS AND OTHER REQUIREMENTS**

Fort Belvoir is responsible for preparing and submitting permit applications and other information needed for the proposed action. Permits or other requirements that could be required include, but are not limited to:

- Virginia Stormwater Management Program, General Permit for Discharges of Stormwater and Construction Activities and associated Stormwater Pollution Prevention
- Virginia Pollutant Discharge Elimination System (VPDES) Industrial Stormwater General Permit and Individual Major Permit
- VADEQ approved Erosion and Sediment Control Plan
- VADEQ approved Stormwater Management Plan
- Section 404 Individual Permit
- Section 401 Water Quality Certification
- Virginia Wetlands Program Individual Permit
- State Historic Preservation Office concurrence

- Coastal Zone Federal Consistency Determination concurrence

#### 4.4 CONCLUSION

The implementation of the Dogue Creek Bridge rehabilitation, as described under the Proposed Action Alternative, is not expected to result in significant impacts on the environment; therefore, an Environmental Impact Statement is not required.

Table 4-1 provides a brief comparison of the environmental impacts associated with the Proposed Action and No Action Alternative.

**Table 4-1: Summary of Impacts of the Proposed Action and the No Action Alternative**

<b>Resource</b>	<b>Resource Evaluated in Detail in the EA</b>	<b>Proposed Action</b>	<b>No Action Alternative</b>
<b>Air Quality</b>	Yes	Minor short-term adverse impacts from construction equipment.	No Impacts
<b>Ground Water</b>	No	No Impacts	No Impacts
<b>Surface Water</b>	Yes	Minor short-term adverse impacts during construction from bridge dust and debris and earth disturbance and potential for increased erosion from clearing dirt and debris from abutments. Temporary erosion and sediment control measures would be employed to mitigate stormwater runoff. BMPs would be used on bridge to minimize escape of pollutants from bridge debris.	Minor long-term adverse impacts from LBP dropping into Dogue Creek from the existing bridge.
<b>Wetlands</b>	Yes	No impacts. All wetlands will be avoided. Minor short-term adverse impacts to RPAs due to Dogue Creek and associated tidal wetlands buffers in project area.	Minor long-term adverse impacts from LBP dropping into Dogue Creek from the existing bridge.
<b>Floodplains</b>	Yes	No impacts. The rehabilitated bridge would continue to lie in the one percent annual chance coastal flood hazard area.	Minor long-term adverse impacts from LBP dropping into Dogue Creek from the existing bridge.
<b>Vegetation</b>	Yes	Minor short-term adverse impacts from tree trimming.	No Impacts
<b>Fish and Wildlife</b>	Yes	Minor short-term adverse impacts from tree trimming and noise disturbance during bridge removal and construction.	No Impacts

<b>Resource</b>	<b>Resource Evaluated in Detail in the EA</b>	<b>Proposed Action</b>	<b>No Action Alternative</b>
<b>Rare, Threatened and Endangered Species</b>	Yes	No impacts. Tree trimming would take place outside of the active period for the northern long-eared bat.	No Impacts
<b>Coastal Zone</b>	Yes	Negligible impacts. The Proposed Action would be consistent with the Virginia Coastal Zone Management Policy.	No Impacts
<b>Land Use</b>	No	No Impacts	No Impacts
<b>Noise</b>	Yes	Minor short-term adverse impacts from construction equipment.	No Impacts
<b>Soils</b>	Yes	Minor short-term adverse impacts from earth-moving/grading from clearing dirt and debris from abutments and near the laydown area during bridge removal and construction.	No Impacts
<b>Geology and Topography</b>	No	No Impacts	No Impacts
<b>Cultural Resources</b>	Yes	Moderate long-term adverse impacts due to removal of historic property.	No Impacts
<b>Socioeconomics</b>	Yes	Negligible short-term beneficial impacts from the temporary hiring of construction workers. There would be no increase in the permanent workforce.	No Impacts
<b>Environmental Justice</b>	Yes	No Impacts	No Impacts
<b>Protection of Children</b>	Yes	No Impacts	No Impacts
<b>Traffic and Transportation</b>	Yes	Minor short-term adverse impacts during bridge removal and construction from road closures and re-routing of traffic. Moderate long-term beneficial impacts following construction completion due to higher weight restrictions allowing emergency vehicles to use the bridge.	Moderate long-term adverse impacts, as no emergency vehicles or any vehicles will be able to use the bridge over time.
<b>Infrastructure</b>	Yes	Moderate long-term beneficial impacts from improvements to the bridge.	Moderate long-term adverse impacts from continued deterioration of the bridge eventually creating unsafe conditions for vehicle and pedestrian traffic.

<b>Resource</b>	<b>Resource Evaluated in Detail in the EA</b>	<b>Proposed Action</b>	<b>No Action Alternative</b>
<b>Utilities</b>	Yes	Minor short-term adverse impacts from the disconnection and reconnection of telecommunication cables during bridge removal and construction.	No Impacts
<b>Hazardous Materials and Wastes</b>	Yes	Minor short-term adverse impacts from mobilization of LBP on bridge. BMPs would minimize human health and environmental impacts. Moderate long-term beneficial impacts after construction since the bridge will no longer contain any LBP or other hazardous materials and wastes.	Minor long-term adverse impacts from LBP dropping into Dogue Creek from the existing bridge.
<b>Visual and Aesthetic Resources</b>	Yes	Minor short-term adverse impacts from presence of construction equipment in project area, including an approximately 30 foot crane.	No Impacts
<b>Safety and Occupational Health</b>	Yes	Minor short-term adverse impacts due to disturbance of LBP, moderate long-term beneficial impacts after construction since the bridge will no longer contain any LBPs or other hazardous materials and wastes.	No Impacts
<b>Recreational Facilities</b>	Yes	Minor short-term adverse impacts of recreational fishing and boating opportunities in construction area due to temporary restriction to recreational navigation traffic under bridge.	Moderate long-term adverse impacts due to the potential closing of the bridge because of continued deterioration.

**THIS PAGE INTENTIONALLY LEFT BLANK**

## 5.0 REFERENCES

Chesapeake Bay Program. 2018. *Draft Tidal Trends in Water Quality: Potomac River 2017 Tributary Summary*. Sept 26, 2018.

[https://www.chesapeakebay.net/channel\\_files/29618/potomac\\_basinsummary\\_tidal\\_2018-09-26.pdf](https://www.chesapeakebay.net/channel_files/29618/potomac_basinsummary_tidal_2018-09-26.pdf).

Chesapeake Bay Program. 2019. <https://www.chesapeakebay.net/>.

Commonwealth of Virginia. 2012. State Air Pollution Control Board – Regulations for the Control and Abatement of Pollution. 9VAC5 Chapter 30 – Ambient Air Quality Standards. Amended November 21, 2012.

Department of Defense (DoD). 2015. Strategic Sustainability Performance Plan FY15. Website: <http://www.denix.osd.mil/sustainability/upload/DoD-SSPP-FY15-Final.pdf>.

Fairfax County. 2011. Belle Haven, Dogue Creek and Four Mile Run Watershed Management Plan. <https://www.fairfaxcounty.gov/publicworks/stormwater/belle-haven-dogue-creek-and-four-mile-run-watersheds>.

Installation Management Command (IMCOM) Army Transportation Infrastructure Inspection Program. February 2019. *Draft Routine Bridge Inspection Report Facility Number: 01590 NBI Structure No.: DAPMDWBEL001590*. Prepared by PRIME AE Group, Inc.

Interstate Commission on the Potomac River Basin. 2007. Total Maximum Daily Loads of Polychlorinated Biphenyls (PCBs) for Tidal Portions of the Potomac and Anacostia Rivers in the District of Columbia, Maryland, and Virginia.

[https://doee.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/TidalPotomac\\_PCB\\_TMDL\\_Final01.pdf](https://doee.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/TidalPotomac_PCB_TMDL_Final01.pdf).

U.S. Army Corps of Engineers (USACE), Baltimore District. September 2018. *National Register of Historic Places Determination of Eligibility Form, U.S. Army Garrison, Fort Belvoir Dogue Creek Bridge Fairfax County, Virginia*.

USACE. June 2019. *Dogue Creek Bridge Rehabilitation Small Whorled Pogonia and Wood Turtle Habitat Assessment Memorandum*.

U.S. Army Garrison Fort Belvoir. December 2017. *Vehicle Count Report Sheet, ACP 3 Name: Walker Gate*.

U.S. Army Garrison Fort Belvoir. August 2018. *Fort Belvoir Integrated Natural Resources Management Plan and Environmental Assessment for Implementation of the 2018 Integrated Natural Resources Management Plan*.

U.S. Census Bureau. 2016. Income & Poverty. <https://www.census.gov/topics/income-poverty/poverty/about/glossary.html>.

U.S. Department of Agriculture (USDA). 2018. Natural Resources Conservation Service (NRCS). Web Soil Mapper. <https://websoilsurvey.nrcs.usda.gov/app/>.

U.S. Environmental Protection Agency (USEPA). 2019a. Greenhouse Gas Emissions, Understanding Global Warming Potentials. <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials>.

USEPA. 2019b. National Ambient Air Quality Standards. <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.

U.S. Fish and Wildlife Service (USFWS). 2019. Information for Planning and Consultation. <https://ecos.fws.gov/ipac/>.

Virginia Department of Environmental Quality (VADEQ). 2018. Water Quality Assessment Guidance Manual. <https://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityAssessments/2018WQAGuidanceManual.aspx>.

VADEQ. 2019. Stormwater Management. <https://www.deq.virginia.gov/Programs/Water/StormwaterManagement.aspx>.

## 6.0 ACRONYMS AND ABBREVIATIONS

µg	Micrograms
AIRFA	American Indian Religious Freedom Act
APE	Area of Potential Effect
AQCR	Air-quality Control Region
AR	Army Regulations
ARPA	Archaeological Resource Protection Act
BMP	Best Management Practice
CAA	Clean Air Act
CBPA	Chesapeake Bay Preservation Act
CDC	Child Development Center
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2e</sub>	Carbon Dioxide Equivalent
CWA	Clean Water Act
DAAF	Davison Army Airfield
dB	Decibel
dBA	A-weighted decibel
DEQ	Department of Environmental Quality
DLA	Defense Logistics Agency
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ERDL	Engineer Research and Development Laboratory
ERTC	Engineer Replacement Training Center
ESA	Endangered Species Act
ESC	Erosion and Sediment Control
FEMA	Federal Emergency Management Agency
FFRMS	Federal Flood Risk Management Standard
FNSI	Finding of No Significant Impact
FONPA	Finding of No Practicable Alternative
GHG	Greenhouse Gas
GWP	Global Warming Potential
IMCOM	Installation Management Command
IPaC	Information for Planning and Consultation
JPA	Joint Permit Application
LBP	Lead-Based Paint
LCM	Landing Craft Mechanized
MLRA	Major Land Resources Area
NAAQS	National Ambient Air Quality Standards

NAGPRA	Native American Graves Protection and Repatriation Act
NBIS	National Bridge Inspection Standards
NCPC	National Capital Planning Commission
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLEB	Northern long-eared bat
NMUSA	National Museum of the U.S. Army
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
N <sub>2</sub> O	Nitrous Oxides
NOA	Notice of Availability
NOI	Notice of Intent
O <sub>3</sub>	Ozone
OSHA	Occupational Safety and Health Act
Pb	Lead
PCB	Polychlorinated Bihenyls
PM	Particulate Matter
PPE	Personal Protective Equipment
ppm	Parts Per Million
RCRA	Resource Conservation and Recovery Act
REC	Record of Environmental Consideration
RMA	Resource Management Area
ROI	Region of Influence
RPA	Resource Protection Area
RPMP	Real Property Master Plan
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Office
SO <sub>2</sub>	Sulfur Dioxide
TMDL	Total Maximum Daily Load
TSCA	Toxic Substances Control Act
U.S.	United States
USC	United States Code
USACE	United States Army Corps of Engineers
USAG	United States Army Garrison
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	Volatile Organic Compound
VDHR	Virginia Department of Historic Resources
VDOT	Virginia Department of Transportation
VPDES	Virginia Pollutant Discharge Elimination System
WNS	White Nose Syndrome

**APPENDIX A – DRAFT ROUTINE BRIDGE INSPECTION REPORT, FACILITY  
NUMBER: 01590, NBI STRUCTURE NO.: DAPMDWBEL001590, FT. BELVOIR, VA**



**IMCOM** Army Transportation Infrastructure  
Inspection Program  
HQ Installation Management Command

**RBI-BEL-18-01590**

# **Routine Bridge Inspection Report**

## **Facility Number: 01590**

### **NBI Structure No.: DAPMDWBEL001590**

#### **Ft. Belvoir, VA**

Kimberly M. Gravatt, PE and Rob A. Pangborn, EIT  
Inspection Date: 14 November 2018  
Report Date: February 2019



Requests for this document shall be referred to Commander, U.S. Army Garrison Fort Belvoir, 9430 Jackson Loop, Fort Belvoir, VA, 22060 or to Headquarters, U.S. Army Installation Management Command (IMPW), 2405 Gun Shed Road, JBSA Ft Sam Houston, TX, 78234-1223.

**DISCLAIMER:** The contents of this report are not to be used for advertising, publication, or promotional purposes. Citation of trade names does not constitute an official endorsement or approval of the use of such commercial products. All product names and trademarks cited are the property of their respective owners. The findings of this report are not to be construed as an official Department of the Army position unless so designated by other authorized documents.

# **PREFACE**

This report presents a routine inspection for facility number 01590 at Fort Belvoir, Virginia and satisfies requirements for routine inspection as specified in Army Regulation (AR) 420-1 “*Army Facility Management*”, Chapter 7 “*Transportation Infrastructure and Dams*.”

The Army Bridge Inspection Program is sponsored by the Army Transportation Infrastructure Inspection Program (ATIIP) of the Headquarters Installation Management Command (IMCOM), San Antonio, TX. The IMCOM provided funding for this investigation. Questions shall be directed to Michael R. Andres, IMCOM ATIIP Program Manager, michael.r.andres.civ@mail.mil.

Personnel of PRIME AE Group, Inc. prepared this publication. The required field inspection was conducted in November 2018. The evaluation team consisted of Kimberly M. Gravatt, PE, Team Leader and Rob A. Pangborn, EIT. John M. Branyan, PE, was the Project Lead.

The Installation POC is Mike Wolfe, (703) 806-0706, michael.a.wolfe62.civ@mail.mil.

The numbering convention for reporting purposes is from the north and the west. All units of measure in this report are in U.S. (English) units unless noted otherwise.

---

Inspection Team Leader:

*Kimberly Gravatt*

Kimberly M. Gravatt, PE, (410) 654-3790, kgravatt@primeeng.com

Report Reviewer:

*Bruce D. Arey*

Bruce D. Arey, PE, (410) 654-3790, barey@primeeng.com

Report Approver:

Gerardo I. Velazquez, (601) 634-3265, gerardo.i.velazquez@usace.army.mil

# Table of Contents

EXECUTIVE SUMMARY.....	01590-1
BRIDGE ID & DESCRIPTION.....	01590-3
SKETCHES.....	01590-10
SUMMARY OF FINDINGS.....	01590-12
STRUCTURE INVENTORY & APPRAISAL FORM .....	01590-36
INSPECTION RECORD.....	01590-38
APPENDIX A – FRACTURE CRITICAL MEMBER INSPECTION PLAN .....	01590-54

## EXECUTIVE SUMMARY

A routine inspection was performed at structure number 01590 on 14 November 2018 in accordance with the Code of Federal Regulations, Title 23, Part 650, Subpart C - National Bridge Inspection Standards (NBIS) and the requirements for routine inspection as specified in Army Regulation (AR) 420-1 “*Army Facility Management*”, Chapter 7 “*Transportation Infrastructure and Dams*.” The previous NBIS inspection was performed on 14 November 2016. Subsequent routine NBIS safety inspections should be performed at regular intervals not to exceed twenty-four months in accordance with the NBIS.

Bridge 01590 is in poor condition overall (NBI Rating = 4). This condition has not changed significantly since the previous inspection. Following is a list of the most significant findings.

- There are no MLC posting signs in place.
- The civilian posting signs do not meet current standards.
- There are no Type 3 Object Markers in place.
- The bridge railings and approach guardrail transitions do not meet current VDOT standards.
- There is section loss and missing/broken bars throughout the steel grid deck.
- There are holes due to section loss throughout the steel curbs.
- The timber sidewalks have several rotten planks and areas of severe section loss throughout the stringers.
- The compression joint seal at the North Abutment has failed.
- There are areas of corrosion and severe section loss throughout the superstructure.

Corrective action should be taken as outlined in this report to prevent the possible development of more serious or costly problems in the future.

None of the deficiencies at this bridge are considered critical, so no immediate corrective actions are needed. Current repair/maintenance recommendations include the following (described in more detail in Tables 1 & 2):

- Install MLC posting signs in accordance with the May 2016 load rating.
- Install civilian posting signs that meet VDOT standards based on the results of the May 2016 load rating.
- Install Type 3 Object Markers at all four corners of the bridge.
- Replace the bridge railings and approach guardrail transitions in accordance with current VDOT standards.

- Replace the bridge.

The bridge is currently posted for civilian weight restriction of 5 Tons. A load rating completed in May 2016 recommended postings of 18 Tons for civilian traffic, MLC 16 for two way wheeled and tracked, and MLC 20 for one way wheeled and tracked. The more conservative posting of 5 Tons can remain in place. MLC posting signs with the above should be installed.

### **BRIDGE ID & DESCRIPTION**

Main Span Material:	Steel		
No. of Main Spans:	1		
Main Span Type:	Pony Truss		
No. of Approach Spans:	0	No. of Beams, Main Span:	N/A
Max. Span Length:	160.1 ft	Structure Total Length:	160.1 ft
Deck Type:	Steel Open Grate		
Deck Width:	24.3 ft	Curb to Curb Width:	23.0 ft
Wearing Surface:	N/A	Skew Angle:	0 °
Abut. Foundations:	Spread Footing		
Pier Foundation(s):	N/A	Abutment / Pier Mat'l:	Concrete
Year Built:	1959	Year Reconstructed:	1979
Fracture Critical:	Yes		
Underwater Inspection:	No	Date of previous UW Inspection:	N/A
Special Inspection (SI):	No	Date of previous SI:	N/A

Structure Repair History: None

### **LOCATION**

Installation:	Fort Belvoir	State:	Virginia
Facility Carried:	Mt. Vernon Road	Feature Intersected:	Dogue Creek
Latitude:	38°42'33.80" N	Longitude:	77°07'56.30" W

### **INSPECTION ACCESS REQUIREMENTS**

This bridge is located in an unrestricted area of the base, but coordination with the base is required. Rigging was used to access the underside of the superstructure.



BRIDGE LOCATION MAP  
NOT TO SCALE



SATELLITE VIEW



Figure 1. West Elevation Looking East



Figure 2. East Elevation Looking West



Figure 3. North Approach Looking South



Figure 4. South Approach Looking North



Figure 5. Upstream View Looking West



Figure 6. Downstream View Looking East



Figure 7. Underside View Looking North



Figure 8. Underside View Looking to the North Abutment

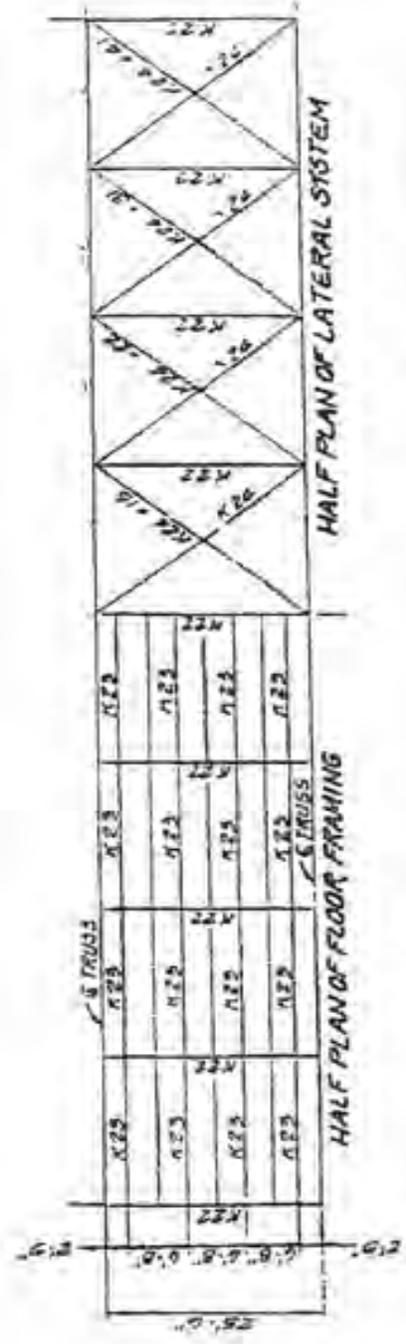
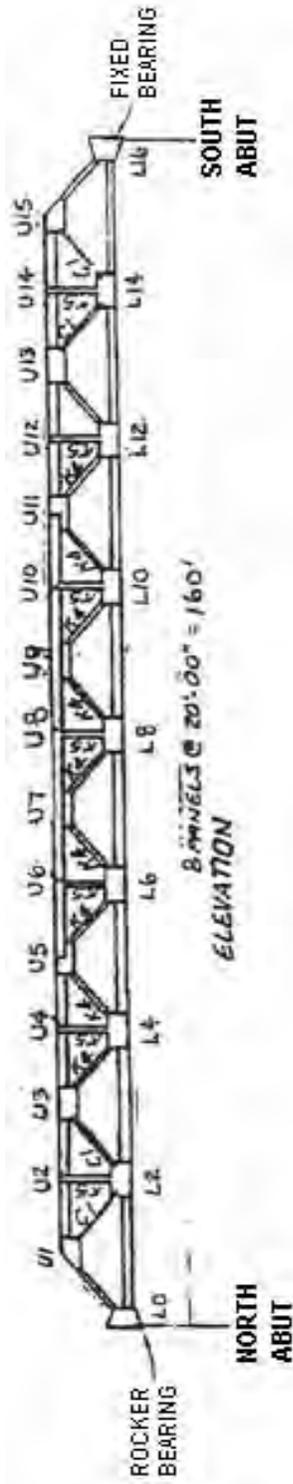


Figure 9. Typical Deck Looking West



Figure 10. Speed Limit and Load Posting Signs

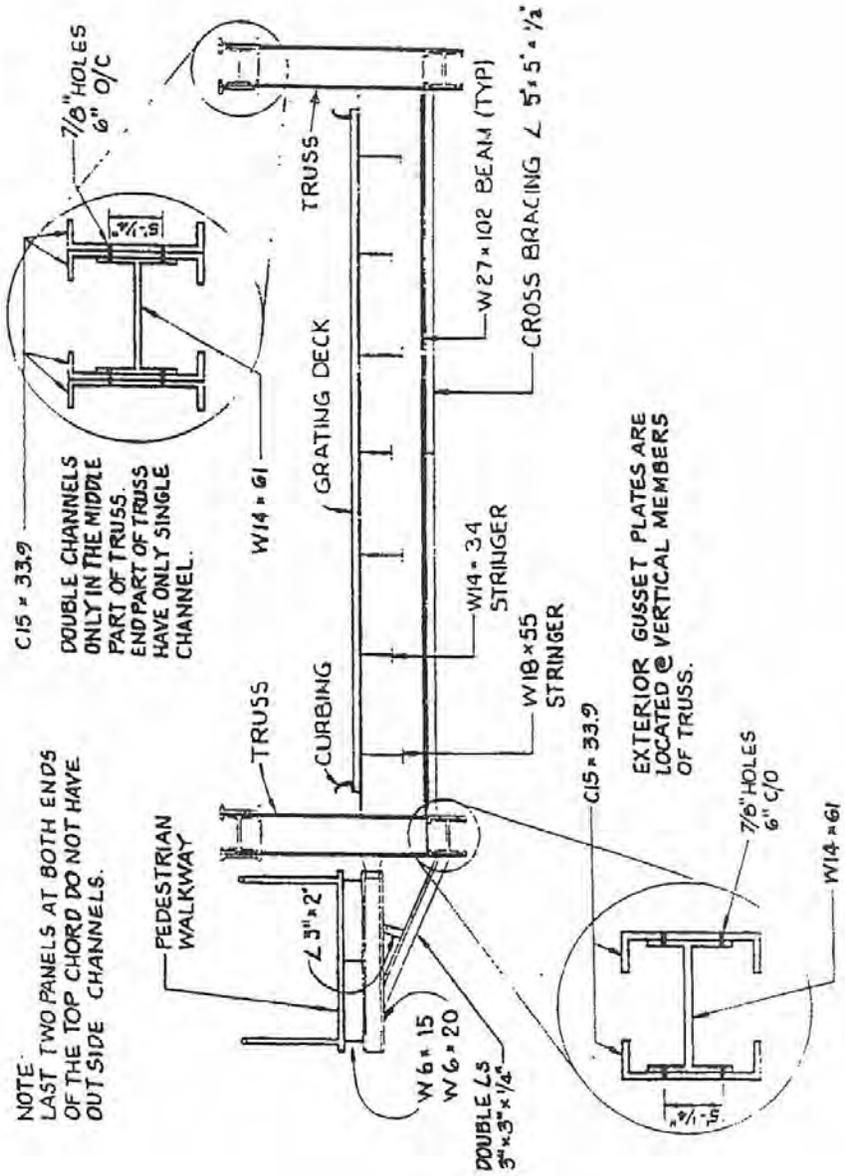
# SKETCHES



FT. BELVOIR BRIDGES

BRIDGE NO. 01590

**SKETCHES (CONTINUED)**



FT. BELVOIR BRIDGES

BRIDGE NO. 01590

## **SUMMARY OF FINDINGS**

### **Critical Findings / Sustainment Deficiencies and Recommendations:**

Table 1 shows all critical findings that require immediate attention. Table 2 shows the deficiencies and recommendations for the bridge that should be completed over the next two years, or for larger rehabilitation or replacement projects where planning and design should begin. The estimated costs in Tables 1 and 2 are approximate costs based on the cost of material and labor required to complete the recommended repair, in U.S. dollars. All cost data is based on current bid tabulations from the Maryland State Highway Administration. These approximate cost estimates should only be used as a reference and for project planning purposes. Although they represent the costs for individual repair activities, they may not represent the total cost of a complete repair/rehabilitation project. Costs such as Engineers' Office, Submittal Reviews, Mobilization and Demobilization, Maintenance of Traffic, Stream Diversion, Contractor's bond etc. would have to be added to the costs provided to develop a complete project cost.

**Table 1. Critical Findings**

YEAR	DEFICIENCY NO.	PHOTO	DEFICIENCY	RECOMMENDATION	REPAIR TIMEFRAME (MONTHS)	PLAN OF ACTION REQUIRED (Y/N)	INSPECTION FREQUENCY (MONTHS)	QTY	AMOUNT (\$K)
			None						\$0.0
							TOTAL:		\$0.0

**Table 2. Deficiencies & Recommendations**

YEAR	DEFICIENCY NO.	PHOTO	DEFICIENCY	RECOMMENDATION	REPAIR TIMEFRAME (MONTHS)	PLAN OF ACTION REQUIRED (Y/N)	INSPECTION FREQUENCY (MONTHS)	QTY	AMOUNT (\$K)
2014	1	1	Loose offset blocks in guardrail over bridge and at approaches.	Replace offset blocks.	24	N	24	LS	\$1.0
2018	1	2	Both approaches have substandard civilian posting signs for 5 Tons (North Approach shown).	Install standard civilian posting signs based on the results of the 2016 load rating.	3	N	24	2 EA	\$0.4
2018	2	3	There are no MLC posting signs in place (North Approach shown).	Install MLC posting signs based on the results of the 2016 load rating.	3	N	24	2 EA	\$0.4
2014	2	3	There are no Type 3 object markers in place at the corners of the structure (North Approach shown).	Install Type 3 object markers at the corners of the bridge.	3	N	24	4 EA	\$0.8
2018	3	4	The bridge rails do not meet current Virginia DOT standard due to inadequate post spacing.	Included in structure replacement.	N/A	Y	24	-	\$0.0
2018	4	-	The guardrail transitions are not properly stiffened	Properly stiffen the guardrail transitions.	12	Y	24	LS	\$1.0
2014	3	5	Missing and bent bars and steel patch plates in grid deck.	Included in structure replacement.	N/A	N	24	-	\$0.0
2014	4	6	Rust holes throughout the curb support brackets (West Curb shown).	Included in structure replacement.	N/A	N	24	-	\$0.0
2018	5	7	Several rotten timber planks in the sidewalk.	Included in structure replacement.	N/A	N	24	-	\$0.0
2014	5	8	Some East Handrail post connections to the exterior sidewalk stringer have severe section loss.	Included in structure replacement.	N/A	N	24	-	\$0.0
2018	6	9	Minor traffic scrapes and loose or misaligned offset blocks in bridge railing (West Railing shown).	Included in structure replacement.	N/A	N	24	-	\$0.0

YEAR	DEFICIENCY NO.	PHOTO	DEFICIENCY	RECOMMENDATION	REPAIR TIMEFRAME (MONTHS)	PLAN OF ACTION REQUIRED (Y/N)	INSPECTION FREQUENCY (MONTHS)	QTY	AMOUNT (\$K)
2014	6	10	Conduit broken along West Bottom Chord and at southeast corner with wires exposed.	Included in structure replacement.	N/A	N	24	-	\$0.0
2014	7	11	North and South Compression Seals are missing and damaged (North shown).	Included in structure replacement.	N/A	N	24	-	\$0.0
2014	8	12	Bearings have debris surrounding them and heavy corrosion.	Included in structure replacement.	N/A	N	24	-	\$0.0
2014	9	13, 14	Areas of severe corrosion and section loss in stringers.	Replace structure.	24	N	24	LS	\$840.0
2014	10	15	Areas of severe corrosion and section loss in floor beams.	Included in structure replacement.	N/A	N	24	-	\$0.0
2016	1	16	Bracing has scattered missing bolts due to pack rust between the angles.	Included in structure replacement.	N/A	N	24	-	\$0.0
2014	11	17	Moderate paint peeling and debris throughout the end posts.	Included in structure replacement.	N/A	N	24	-	\$0.0
2014	12	18	Moderate paint peeling and debris throughout the top chords.	Included in structure replacement.	N/A	N	24	-	\$0.0
2014	13	19	Heavy debris built-up throughout bottom chords and in bottom chord gusset connections.	Included in structure replacement.	N/A	N	24	-	\$0.0
2014	14	20	Pack rust typical between built-up members in gusset connections, with out-of-plane bending of gusset plate and/or channel surface (L6 West Gusset shown).	Included in structure replacement.	N/A	N	24	-	\$0.0
2016	2	21	Dirt and debris on the abutment seats.	Included in structure replacement.	N/A	N	24	-	\$0.0
							<b>TOTAL:</b>		<b>\$843.6</b>

**PHOTO #1**



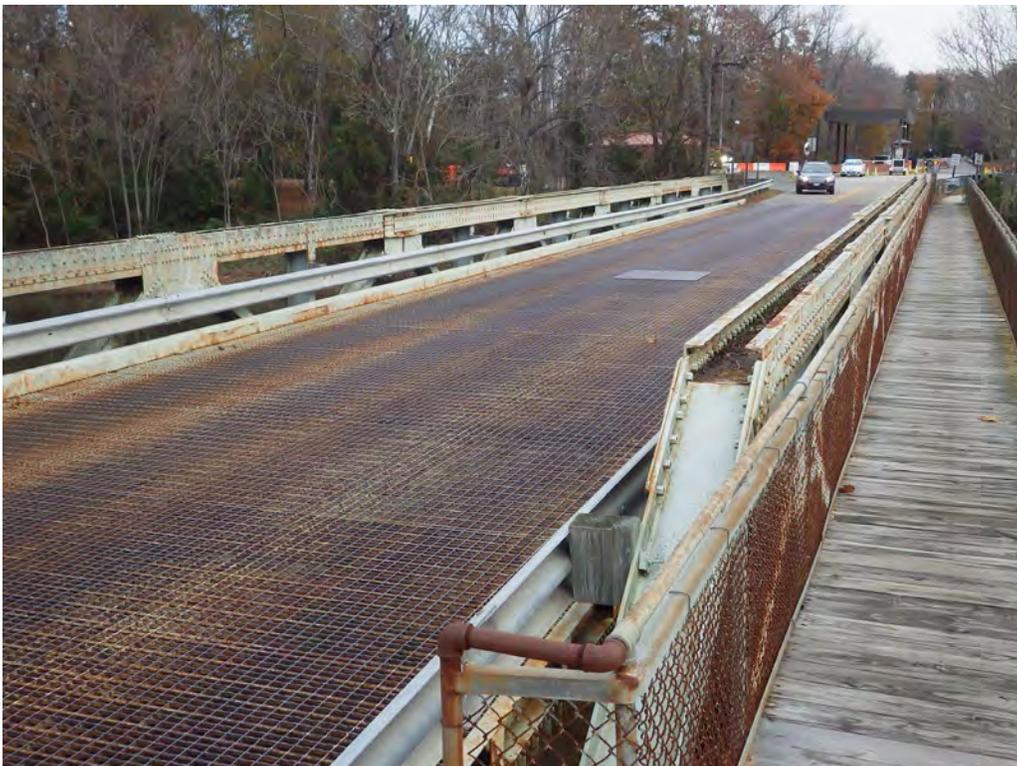
**PHOTO #2**



**PHOTO #3**



**PHOTO #4**



**PHOTO #5**



**PHOTO #6**



**PHOTO #7**



**PHOTO #8**



**PHOTO #9**



**PHOTO #10**



**PHOTO #11**



**PHOTO #12**



**PHOTO #13**



**PHOTO #14**



**PHOTO #15**



**PHOTO #16**



**PHOTO #17**



**PHOTO #18**



**PHOTO #19**



**PHOTO #20**



**PHOTO #21**



**Table 3. Completed Repairs since Last Inspection**

Deficiency	Resolution	Critical Finding (Y/N)	Date
Several	None	N	N/A

**Structure Capacity:** A load rating is on file for this bridge; however, Virginia State Legal and Permit Trucks were not rated. A load rating is required to be completed that includes all Virginia State Legal and Permit Truck Loadings. The known NBI items are as follows:

NBI Item	Description	Code
(31) Design Load	Unknown	0
(41) Structure Open/Posted/Closed to Traffic	Posted	P
(63) Operating Rating Method (65) Inventory Rating Method	Load and Resistance Factor (LRFR)	8
(64) Operating Rating	Rating Factor	0.34
(66) Inventory Rating	Rating Factor	0.26
(70) Bridge Posting	> 39.9% below	0

**Recommended Civilian Posting**



**Table 4. Civilian Capacity**

Currently Posted (Y/N)	Legal Load / Posted Limit		Supporting Load Rating Document	LR Date	LR Calculation Valid (Y/N)	LR Calculation Revised (Y/N/NA)
Y	UNK	5 tons	Design, Legal, And MLC Load Rating of Fort Belvoir Bridge 01509	May, 2016	Y	N

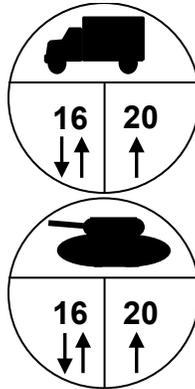
Design Load:		Unknown	Load Capacity Remains (Y/N):			Y
Date of Previous Load Rating:		N/A	Load Capacity Reduced (Y/N):			N
Date of Current Load Rating:		May - 16	Revised or New Load Posting (Y/N):			Y
Specify Load Rating Methodology <sup>1</sup> :				LRFR		
AASHTO LOADINGS						
Load Rating Type	Load Type		Weight (tons)	RF	RT (tons)	Safe Posting Load Limit (tons)
Design Load Rating <sup>2</sup>	HL - 93	Inventory	36.0	0.26	-	X
		Operating	36.0	0.34	-	
Legal Load Rating	Routine Commercial Vehicles	Type 3	25.0	0.80	20.06	
		Type 3-S2	36.0	0.60	21.50	
		Type 3-3	40.0	0.57	22.64	
	Specialized Hauling Vehicles	NRL	40.0	0.51	-	
		SU4	27.0	0.74	19.99	
		SU5	31.0	0.65	20.14	
		SU6	34.8	0.58	20.24	
		SU7	38.8	0.53	20.41	
STATE LOADINGS						
Legal Load Rating	Routine Commercial Vehicles	VA Type 3	27.0			
		VA Type 3S2	40.0			
	Specialized Hauling Vehicles	NRL	40.0			
		SU4	27.0			
		SU5	31.0			
		SU6	34.75			
		SU7	38.75			
Permit	Routine Permit Vehicles	BP-90	45.0			
		BP-115	57.5			

1. Enter ASR for Allowable Stress Rating, LFR for Load Factor Rating or LRFR for Load and Resistance Factor Rating.
2. HL-93 Design Vehicle applies only to LRFD/LRFR methodology. When multiplying 36 tons by the rating factor obtained from the HL-93 to report tonnage, this value shall be taken as a fictitious or "pseudo" load rating since HL-93 is a notional vehicle consisting of a truck or a tandem plus a lane loading. This operation is done for the sole purpose of reporting a value to the NBI.

**Table 5. Military Load Classification**

Posted MLC 1-way Wheel	Calc MLC 1-way Wheel	Posted MLC 2-way Wheel	Calc MLC 2-way Wheel	Posted MLC 1-way Track	Calc MLC 1-way Track	Posted MLC 2-way Track	Calc MLC 2-way Track
None	20	None	16	None	20	None	16

**Recommended MLC Posting**



Post structure as shown above.

**Channel Scour:** No critical scour issues observed during this inspection.

**Table 6. Channel Scour**

Scour Screening (Level 1/2)	Low Risk (Y/N)	Priority (Low/High)	Document	Document Date (MM/YY)	Channel Profile Change >3ft (Y/N)	Profile Base Year
N	Y	Low	None	N/A	N	2012

Note: Level 1 scour analysis should be performed during the next inspection cycle.

**Traffic Safety:** The existing traffic safety features of structure do not meet current Virginia DOT standards. The bridge rail post spacing is inadequate. The approach transitions are not properly stiffened.

**Table 7. Traffic Safety**

NBI Item 36A Bridge Rails	NBI Item 36B Transition	NBI Item 36C Approach Rails	NBI Item 36D End Treatments
0	0	1	1

**Prior Report:** The 2016 Inspection Report was on file and consulted or reviewed for comparison purposes.

**Inspection Frequency:** The structure is scheduled for routine inspection every 24 months. Structure 01590 was inspected within the required NTE 24 months.

**Fracture Critical:** Structure 01590 has fracture critical elements that were properly evaluated during this inspection. A hands-on inspection was performed where access was available. The exterior of the bottom chord was not accessible for hands-on inspection and was inspected visually. See the “Deficiencies and Recommendations” section for descriptions of any problems. Fracture Critical Member Inspection Plan included as Appendix A.



Figure 11. Fracture Critical Element - Typical truss bottom chord and diagonal members (Fracture Critical)



Figure 12. Fracture Critical Element - Typical floor beams (Fracture Critical)

**Special Inspection Requirements:** Structure 01590 requires no special inspections.

**Installation Status Report (ISR):** Facility Number 01590 has a recommended Mission Functional ISR of 2.279, AMBER and a recommended Quality ISR of 2.435, RED.

**Table 8a: ISR Mission Functional**

	Green		Amber		Red	N/A
<b>CAPACITY (10pts)</b>						
- Bridge capacity is sufficient for current mobilization requirements based on a valid load rating or engineering judgment document.	0	- Bridge can be strengthened to meet current mobilization requirements with minimal rehabilitation.	0	- Bridge capacity is insufficient or unable to be rehabilitated to meet current requirements.	10	[ ]
<b>BRIDGE RESTRICTIONS (10pts)</b>						
- Bridge has sufficient width, horizontal and vertical clearance for current mobilization requirements.	10	- N/A [No Amber Condition]		- Bridge width or clearances are insufficient or unable to be rehabilitated to meet current requirements.	0	[ ]
<b>BRIDGE SAFETY FEATURES (10pts)</b>						
- All features of Federal Highway Administration (FHWA) NBI Item #36 rated 1 or N (Bridge rail, transitions, approach guardrails, and end treatments)	0	- Any feature of FHWA Item #36 rated 0 but there is a valid project shown during the inspection that addresses deficiencies and is being scheduled.	0	- Any feature of FHWA Item #36 rated 0, with no upgrade actions planned.	10	[ ]
<b>INSPECTION FREQUENCY (10pts)</b>						
- Inspections are conducted within the required frequency (routine: 24 months, maintenance: 12 months).	10	- Routine bridge inspection over 24 months old or maintenance inspections are over 12 months old.	0	- No routine or special inspections have been conducted.	0	[ ]
<b>MILITARY LOAD CLASSIFICATION (MLC) (10pts)</b>						
- Complete MLC signs posted on both ends of the bridge if required.	0	- Incomplete MLC signs or missing at one end.	0	- MLC is not posted, if required.	10	[ ]
<b>BRIDGE RECORDS (10pts)</b>						
- Complete bridge records are maintained. Items required are: *Inventory Inspections. *Routine Inspections. *Special Inspections. *Fracture Critical Inspections. *Underwater Inspections. *Drawings. *Load Ratings. *Scour Evaluations. *Plan of Actions (for scour, critical findings, repairs, etc.) *Maintenance & Repair Records (DD1354, DA4283, DD1391) *Opening/Closures of structures. *Accidents & ADT data. *ISR data. *ACOMs reviews.	0	- Partial records maintained.	10	- No records are available.	0	[ ]

	Green		Amber		Red	N/A
<b>ACOM REVIEWS (10pts)</b>						
- ACOM engineer has conducted an on-site review of bridge inspections within the last 3 years.	0	- ACOM engineer has conducted an on-site inspection within the last 5 years.	0	- ACOM engineer has not inspected bridges on-site in over 5 years.	10	[ ]
<b>BRIDGE MARKINGS (10pts)</b>						
- Bridge and underpass is marked for weight limit, overhead clearances, speed, traffic markers, and width restrictions if needed.	0	- Bridge is marked for civilian weight limit, overhead clearance, speed, traffic markers, and width restrictions.	0	- No bridge or underpass markings	10	[ ]
<b>PEDESTRIANS (6pts)</b>						
- Bridge has a separated pedestrian walkway where required	6	- Roadway is used by pedestrians; walkway could be built to accommodate pedestrians	0	- Roadway is used by pedestrians; walkway cannot be built to accommodate pedestrians	0	[ ]
<b>Totals Points (86 Max):</b>	<b>26</b>		<b>10</b>		<b>50</b>	
<b>Component Rating:</b>	<b>2.279</b>	<b>AMBER</b>		1.000-1.669: <b>Green</b> 1.670-2.339: <b>Amber</b> 2.340-3.000: <b>Red</b>		

**Table 8b: ISR Quality**

	Green		Amber		Red	N/A
<b>BRIDGE DECK (10pts)</b>						
- Federal Highway Administration (FHWA) NBI Item # 58 condition rating is good or better at 7, 8, 9, for this element.	0	- FHWA Item # 58 is in fair condition with an inspection rating of 5, or 6. -If BRIDGE CONDITION is RED but there is a project shown during the inspection that addresses the deficiencies with funding being requested, then rate the element Amber.	0	- FHWA Item # 58 is in poor condition with an inspection rating of 0, 1, 2, 3, or 4.	10	[ ]
<b>BRIDGE SUPERSTRUCTURE (10pts)</b>						
- Federal Highway Administration (FHWA) NBI Item #59 condition rating is good or better at 7, 8, 9, for this element.	0	- FHWA Item # 59 condition rating of fair with an inspection rating of 5, or 6. -If BRIDGE CONDITION is RED but there is a project shown during the inspection that addresses the deficiencies with funding being requested, then rate the element Amber.	0	- FHWA Item # 59 condition rating of poor with an inspection rating of 0, 1, 2, 3, or 4.	10	[ ]
<b>BRIDGE SUBSTRUCTURE (10pts)</b>						
- Federal Highway Administration (FHWA) NBI Item #60 condition rating is good or better at 7, 8, 9, for this element.	0	- FHWA NBI Item #60 condition rating of fair with an inspection rating of 5, or 6. -If BRIDGE CONDITION is RED but there is a project shown during the inspection that addresses the deficiencies with funding being requested, then rate the element Amber.	10	- FHWA NBI Item #60 condition rating of poor with an inspection rating of 0, 1, 2, 3, or 4.	0	[ ]
<b>CULVERT (10pts)</b>						
- Federal Highway Administration (FHWA) NBI Item #62 condition rating is good or better at 7, 8, 9, for this element.	0	- FHWA NBI Item #62 condition rating of fair with an inspection rating of 5, or 6. -If BRIDGE CONDITION is RED but there is a project shown during the inspection that addresses the deficiencies with funding being requested, then rate the element Amber.	0	- FHWA NBI Item #62 condition rating of poor with an inspection rating of 0, 1, 2, 3, or 4.	0	[X]
<b>BRIDGE CHANNEL (10pts)</b>						
- Federal Highway Administration (FHWA) NBI Item #61 condition rating is good or better at 7, 8, 9, for this element.	0	- FHWA NBI Item #61 condition rating of fair with an inspection rating of 5, or 6. -If BRIDGE CONDITION is RED but there is a project shown during the inspection that addresses the deficiencies with funding being requested, then rate the element Amber.	10	- FHWA NBI Item #61 condition rating of poor with an inspection rating of 0, 1, 2, 3, or 4.	0	[ ]
<b>APPROACH ROADWAY (6pts)</b>						
- Federal Highway Administration (FHWA) NBI Item #72 condition rating is good or better at 7, 8, 9, for this element.	0	- FHWA NBI Item #72 condition rating of fair with an inspection rating of 5, or 6. -If BRIDGE CONDITION is RED but there is a project shown during the inspection that addresses the deficiencies with funding being requested, then rate the element Amber.	6	- FHWA NBI Item #72 condition rating of poor with an inspection rating of 0, 1, 2, 3, or 4.	0	[ ]
<b>Totals Points (56 Max):</b>	<b>0</b>		<b>26</b>		<b>20</b>	
<b>Component Rating:</b>	<b>2.435</b>	<b>RED</b>		1.000-1.669: <b>Green</b> 1.670-2.339: <b>Amber</b> 2.340-3.000: <b>Red</b>		



**Over 200 Items**

(200)	COE Division	
(201)	COE District	
(202)	ABI Structure Number	DAPMDWBEL001590
(203)	Inspection Office	PAE
(204)	Inspector	K. GRAVETT
(205)	Inspection Cost	004500
(206)	Cooper's Loading	
(207)	Railroad Stru Number	
(208)	Name of Railroad	
(209)	Recommended Speed Limit	
(210)	Posted Speed Limit (KPH)	32
(211)	MACOM	SU-MDW
(212)	Installation Name	FORT BELVOIR
(213)	MLC 1-Way Wheel	0020
(214)	MLC 1-Way Track	0020
(215)	Installation Number	51105
(216)	Seismic Category	1
(217)	Acceleration Coefficient	0.06
(218)	Soil Site Coefficient	0.0
(222)	Mission Func	A
	ISR Qual.	
(223)	MLC 2-Way Wheel	0016
(224)	MLS 2-way Track	0016

# INSPECTION RECORD

## ITEM #72: APPROACH FEATURES

### Rating Guidelines

CODE	DESCRIPTION
8	Speed reduction is <b>NOT</b> required.
6	A <b>VERY MINOR</b> speed reduction is required.
3	A <b>SUBSTANTIAL</b> speed reduction is required.

### Components Rating

Rating	Component	Remarks
6	1. Horizontal Alignment	There is a moderate curve along the South Approach requiring a minor speed reduction.
8	2. Vertical Alignment	None
6	<b>General Appraisal Rating (NBI ITEM #72)</b>	

## ITEM #72: APPROACH FEATURES (CONTINUED)

### Rating Guidelines

Code	Description
N	NOT APPLICABLE
9	EXCELLENT CONDITION
8	VERY GOOD CONDITION: No problems noted.
7	GOOD CONDITION: Some minor problems.
6	SATISFACTORY CONDITION: Structural elements show some minor deterioration.
5	FAIR CONDITION: All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
4	POOR CONDITION: Advanced section loss, deterioration, spalling or scour.
3	SERIOUS CONDITION: Loss of section, deterioration, spalling or scour has seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	CRITICAL CONDITION: Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	IMMINENT FAILURE CONDITION: Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put back in light service.
0	FAILED CONDITION: Out of service – beyond corrective action.

### Components Rating

Rating	Component	Unit	Amt	Remarks
N	1. Relief Joints	LF	0	None
4	2. Approach: a) Guardrail	LF	60	The northeast approach guardrail is loose and not connected to five adjacent posts (2014, Def. No. 1, Photo 1). The timber traffic barrier posts have checks up to 1/4" wide. All four approach traffic barriers have one loose timber offset block. Reflectors are broken and missing throughout the guardrail and bridge rail. There are no delineators on the end treatments.
7	b) Pavement	SF	2,300	Both approaches have scattered random cracks up to 1/16" wide on pavement.
7	c) Embankment	EA	4	None
8	3. Load Posting Sign	EA	2	Both approaches have substandard civilian posting signs for 5 Tons (2018, Def. No. 1, Photo 2). There are no MLC posting signs in place (2018, Def. No. 2, Photo 3).
N	4. Hazard Markers	EA	0	None in place (2014, Def. No. 2, Photo 3).

## ITEM #36: TRAFFIC SAFETY FEATURES

### Rating Guidelines

CODE	DESCRIPTION
1	Inspected feature <b>MEETS</b> currently acceptable standards.
0	Inspected feature <b>DOES NOT</b> currently meet acceptable standards or a safety feature is required and <b>NONE IS PROVIDED.</b>
N	<b>NOT APPLICABLE</b>

### Components Rating

Rating	Component	Unit	Amt	Remarks
0	<b>1. Bridge Rails</b>	LF	320	Does not meet current Virginia DOT standard due to inadequate post spacing (2018, Def. No. 3, Photo 4). Guardrail continuous across bridge.
0	<b>2. Transition</b>	EA	4	The transitions are not properly stiffened (2018, Def. No. 4).
1	<b>3. Approach Rails</b>	LF	60	Meets current Virginia DOT standard - W-beam guardrail.
1	<b>4. End Treatments</b>	EA	4	The South Approach end treatments are flared with breakaway ends. The Northwest Approach barrier is turned back at a parking area. The Northeast Approach barrier is turned back at a pedestrian crossing..

## ITEM #58: DECK FEATURES

### Rating Guidelines

Code	Description
N	NOT APPLICABLE
9	EXCELLENT CONDITION
8	VERY GOOD CONDITION: No problems noted.
7	GOOD CONDITION: Some minor problems.
6	SATISFACTORY CONDITION: Structural elements show some minor deterioration.
5	FAIR CONDITION: All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
4	POOR CONDITION: Advanced section loss, deterioration, spalling or scour.
3	SERIOUS CONDITION: Loss of section, deterioration, spalling or scour has seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	CRITICAL CONDITION: Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	IMMINENT FAILURE CONDITION: Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put back in light service.
0	FAILED CONDITION: Out of service – beyond corrective action.

### Components Rating

Rating	Component	Unit	Amt	Remarks
N	1. Wearing Surface	SF	0	None
4	2. Deck Structural Condition	SF	3,880	The open-grid steel deck has light to moderate surface rust throughout. In some locations over the beams there is dirt & debris causing delaminating rust on the main bars and section loss up to 75% in the longitudinal rods. Approximately thirty-five bars are bent or are missing throughout (2014, Def. No. 3, Photo 5). A 5'-0" x 5'-0" steel plate has been installed over top of the steel open-grid deck at the previous location of a slight hump in the deck near mid-span, with three bolts missing in the plate connection to the deck.
5	3. Curbs	LF	320	There are isolated rust holes in the steel curbs and curb stiffeners, particularly along the ends (2014, Def. No. 4, Photo 6). There is minor debris along the curbs.
N	4. Median	SF	0	None
5	5. Sidewalk	SF	720	There are several rotten boards in the timber sidewalk (2014, Def. No. 5, Photo 7). . The chain link fencing is not secured along the bottom rails. There are areas of peeling paint and light rust. The West Handrail posts are secured to the bridge by a horizontal pipe welded to either a gusset plate or a vertical member. Alternate East Handrail posts are not anchored to the bridge, and some post connections to the exterior stringer have severe section loss (2014, Def. No. 5, Photo 8).
N	6. Parapet	LF	0	None
5	7. Railing	LF	320	Minor traffic scrapes and loose or misaligned offset blocks (2018, Def. No. 6, Photo 9). Many of the W-beam splices are not located at posts. Minor areas of impact damage scattered throughout the bridge guardrail.

**ITEM #58: DECK FEATURES (CONTINUED)**

**Components Rating**

Rating	Component	Unit	Amt	Remarks
N	8. Drains	EA	0	None
N	9. Lighting	EA	0	None
5	10. Utilities	EA	6	The west PVC conduit is broken in three locations and the cable is exposed. The support hangers and hardware for the insulated pipe have moderate surface rust and pitting. The east utility conduit is broken in three locations at the southeast corne (2014, Def. No. 6, Photo 10).
4	11. Expansion Joints	LF	48	The steel armor angles have light rust, with minor pitting near the curbs & a few minor gouges. The North Abutment angles have delaminating rust on the inside faces at both shoulders. 100% of the North Abutment compression seal has fallen through the joint opening (2014, Def. No. 7, Photo 11). The South Abutment compression seal has scrapes and tears and protrudes above the roadway surface.
4	<b>General Condition Rating (NBI ITEM #58)</b>			

## ITEM #59: SUPERSTRUCTURE FEATURES - TRUSSES

### Rating Guidelines

Code	Description
N	NOT APPLICABLE
9	EXCELLENT CONDITION
8	VERY GOOD CONDITION: No problems noted.
7	GOOD CONDITION: Some minor problems.
6	SATISFACTORY CONDITION: Structural elements show some minor deterioration.
5	FAIR CONDITION: All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
4	POOR CONDITION: Advanced section loss, deterioration, spalling or scour.
3	SERIOUS CONDITION: Loss of section, deterioration, spalling or scour has seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	CRITICAL CONDITION: Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	IMMINENT FAILURE CONDITION: Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put back in light service.
0	FAILED CONDITION: Out of service – beyond corrective action.

### Components Rating

Rating	Component	Unit	Amt	Remarks
5	1. Bearing Devices	EA	4	There are two steel rocker bearings at the North Abutment and two steel fixed bearings at the South Abutment. The four bearings have areas of peeling paint and moderate flaking rust. Each bearing is surrounded by a moderate to heavy build-up of debris (2014, Def. No. 8, Photo 12). The North Bearings have 1/8" deep pitting with heavy sheet rust. The North Bearing rockers have 1/16" deep pitting and are expanded at 45° F. The anchor bolt nuts at both abutments have severe delaminating rust with section loss.
4	2. Floor System A. Stringers	LF	1,120	<p>The steel stringers have peeling paint and light surface rust along the tops and heavy corrosion at ends near the floor beam connection clip angles. There are areas of rust swell with 1/8" deep section loss throughout the stringers. There are random areas of minor pitting and light to moderate laminated steel along the bottom flanges and bottom of the webs. There are locations with light to moderate debris along the top and bottom flanges of the stringers. There are scattered bolt heads with section loss up to 25% remaining at stringer to floor beam connections. Between Floor Beams 0 and 2, the stringers have heavy paint failure.</p> <p>LO – L2: Stringer 2 – There is a 3" high area of corrosion with up to 100% section loss at the top of the web for the full length with holes up to 1" high. L10 – L12: Stringer 4 –</p> <ul style="list-style-type: none"> <li>• There is section loss with 3/16" remaining (3/8" original) for 9'-0" long on bottom flange.</li> <li>• There is up to 100% section loss on web, 5" high x 9-0" long, on Bay 4 side with a 2" long x 1" high hole (2014, Def. No. 9, Photo 13).</li> </ul> <p>Stringer 5 – There is rust swell with 1/16" deep pitting along bottom of web, 10'-0" long x 3" high.</p>

**ITEM #59: SUPERSTRUCTURE FEATURES – TRUSSES (CONTINUED)**

**Components Rating**

Rating	Component	Unit	Amt	Remarks
4	<b>2. Floor System</b> A. Stringers (Continued)	LF	1,120	<p>L14 – L16: Stringer 3 – At Floor Beam 16, pack rust between the plate and web is pushing the bottom of the plate away from the floor beam. Stringer 4 –</p> <ul style="list-style-type: none"> <li>• Approximately 2'-6" from the South Abutment, there is 4'-6" long area of 100% section loss along the bottom of the web up to 1-1/4" high (2014, Def. No. 9, Photo 14).</li> <li>• There is section loss on bottom flange with 1/8" remaining in the middle 3'-0" portion of the stringer.</li> </ul> <p>Stringer 5 –</p> <ul style="list-style-type: none"> <li>• Heavy rust swell for the entire length with 0.505" remaining (0.630 original) in bottom 6" of the web and bottom flange.</li> <li>• There is a 1'-3" long x 4" high x 1/8" deep area of section loss in the web 3'-9" from Floor Beam 16.</li> <li>• There is a 7" long x 2" high hole in the web 12'-0" from the South Abutment.</li> </ul> <p>Sidewalk Stringers: At the South Abutment, one sidewalk stringer is bent up 1'-6" long x 1-1/4" high along the bottom flange. Connection welds are of poor quality. Sidewalk stringers have severe rust holes at the south end, up to 1'-1" long x 4" high. There is up to 1/2" of pack rust between the sidewalk floor beams and stringers.</p>
4	B. Floor beams	LF	225	<p>The steel floor beams (W27x102, <math>t_f = 0.830</math>" and <math>t_w = 0.505</math>" ) are fracture critical members. There is peeling paint and light surface rust along the beam tops. Dirt and debris build-up between main deck bars on top of several floor beams has resulted in moderate flaking rust and minor section loss on the top flange. There are also areas of light dirt and debris build-up on the bottom flanges. Light to moderate corrosion along the bottom flange and bottom of the web is typical in all floor beams.</p> <p>Floor Beam 0 – Under Stringer 1, 10" long x 2" high corrosion hole. Floor Beam 2 – Along bottom flange, dirt build-up 12'-0" long and heavy rust swell on web up to 6" high and bottom flange with 0.705" remaining. Floor Beam 6 – Pitting up to 1/16" deep on north side of floor beam in Bay 4, 6" long x 4" high. Floor Beam 8 – Heavy rust swell and pitting up to 3/16" deep in web 10'-0" long x 8" high. Floor Beam 10 – Heavy rust swell area 1'-6" long x 3" high. Floor Beam 12 –</p> <ul style="list-style-type: none"> <li>• Heavy rust swell on bottom flange 7" long x 3-1/2" wide with 0.705" remaining.</li> <li>• Heavy rust swell on web 1'-0" long x 6" high with 0.390" remaining.</li> </ul> <p>Floor Beam 14 – Heavy rust swell along bottom flange and web.</p> <ul style="list-style-type: none"> <li>• 5/8" to 7/8" remaining in bottom flange.</li> <li>• Area of 0.327" remaining in web 10'-0" long x 6" high.</li> </ul> <p>Floor Beam 16 – Heavy rust swell in web and bottom flange for the full length, up to 1'-6" high, with up to 0.327" remaining on the web and 0.705" remaining on the bottom flange (2014, Def. No. 10, Photo 15).</p>

**ITEM #59: SUPERSTRUCTURE FEATURES – TRUSSES (CONTINUED)**

**Components Rating**

Rating	Component	Unit	Amt	Remarks
4	C. Bracing	LF	520	There is minor to moderate pack rust at most of the connections and between angles. The pack rust has caused a few isolated bolts to fail and fall out (2016, Def. No. 1, Photo 16). Most of the Bracing Connection Plates have minor pitting that has been painted over at one time but is starting to fail. At the L0 West Connection Plate, there is debris accumulation, moderate pitting, and a 3" diameter corrosion hole. At the L16 East Connection Plate, there is a moderate debris accumulation. The plate is bent, and there is a 6" x 4" corrosion hole in the plate near the brace connection.
6	3. End Posts	EA	4	There is moderate flaking paint, light algae growth, minor debris, and small isolated areas of rust pumping stains along the top surfaces of the end posts (2014, Def. No. 11, Photo 17). There are isolated small areas of minor pack rust between end post elements.
6	4. Verticals	EA	14	Handrail braces from the pedestrian structure have been field-welded to verticals of the East Truss. These welds are generally of poor quality.
6	5. Diagonals	EA	28	The diagonal members are fracture critical members. There are longitudinally welded spacers between the built-up diagonal members (Fatigue Category D). There is minor impact damage on U15-L14 of the East Truss and on U1-L2 fo the West Truss with the angles being slightly bent. Handrail braces from the pedestrian structure have been field-welded to diagonals of the East Truss (Fatigue Category C). These welds are generally of poor quality.
6	6. Chord A. Upper	LF	320	There is moderate flaking paint, light algae growth, minor debris, and small isolated areas of rust pumping stains along the top surfaces of the top chords (2014, Def. No. 12, Photo 18). There are isolated small areas of minor pack rust between top chord elements.
4	B. Lower	LF	320	<p>The bottom chords (W14x61, <math>t_f = 0.645"</math> and <math>t_w = 0.375"</math>; C15x33.9, <math>t_f = 0.650"</math> and <math>t_w = 0.400"</math>) are fracture critical members. The W-shape members of the bottom chords have open holes throughout their flanges (Fatigue Category D). There is moderate to heavy debris, up to 3" deep, along the top surfaces of the bottom chords and in the truss connections (2014, Def. No. 13, Photo 19). The debris is heaviest at the ends of the bottom chord members and in the joints. There is typically minor flaking rust under the debris. There is typically pack rust between the plates and built-up sections making up the joints.</p> <p><u>West Truss:</u> The condition of the lower chord splice plates could not be verified due to the utility conduit obscuring the connections.</p> <p>Chord L0-L2 – Debris up to 3" deep and rust swell areas with up to 0.250" remaining.                      Joint L12 –</p> <ul style="list-style-type: none"> <li>• Pack rust bending inside channel section up to 1/16".</li> <li>• Pack rust bending outside gusset plate up to 1/8".</li> </ul> <p><u>East Truss:</u> Several pedestrian structure cantilevers have been field-welded to the bottom chord (Fatigue Category C). The welds are generally of poor quality. There are also random sections of rebar welded to the bottom chord (Fatigue Category C).</p> <p>Joint L0 of both trusses – Inside gusset plate bent 1/8" – 3/16".</p>

**ITEM #59: SUPERSTRUCTURE FEATURES – TRUSSES (CONTINUED)**

**Components Rating**

Rating	Component	Unit	Amt	Remarks
4	B. Lower	LF	320	<p>Joint L2 –</p> <ul style="list-style-type: none"> <li>• Hole in inside channel section, 1-3/4" long x 1" high and 6" from the center of the connection on the L0 side.</li> <li>• Inside channel has 1/16" section remaining on bottom leg (beyond bolts) with heavy corrosion around the bolts.</li> <li>• Nuts are severely corroded, and two bolts are missing.</li> </ul> <p>Joint L4 –</p> <ul style="list-style-type: none"> <li>• Bottom channel leg is bent up and heavily corroded.</li> <li>• There is one missing nut.</li> </ul> <p>Joint L6 – there is 100% section loss of up to four nuts.</p> <p>Joint L10 – The inside gusset plate has a 2" high area of 1/8" deep section loss on both faces.</p> <p>Joint L12 – there is 100% section loss of all hex head nuts on the lower 10 bolt splice plate.</p>
N	<b>7. Bracing</b> A. Portal	EA	0	None
N	B. Upper	EA	0	None
N	<b>8. Pin Connectors</b>	EA	0	None
6	<b>9. Gusset Connections</b>	EA	18	<p>The gusset plates have minor to moderate areas of corrosion in isolated areas. Along the bottom chord, the inboard faces of both trusses, along the bottom connection angles have minor pitting up to 1" high by the full length of the angles by up to 1/8" deep. There is debris collecting on the bottom chord that is retaining moisture along the inboard faces of the gussets. The inner gusset plate at L6 on the West Truss has a slight bow (2014, Def. No. 14, Photo 20). At the south bearing of the East Truss, there is a 3" high x full-length area of delaminated rust on the west face of the inside gusset plate. At the north end of the top chord of the East Truss, the west gusset plate is missing one bolt.</p>
4	<b>10. Paint</b>	LF	6,000	<p>The paint system is peeling and flaking, with light to moderate laminated rust as documented above. There are also areas of light to moderate freckled and bleeding rust throughout the superstructure.</p>
<b>4</b>	<b>General Condition Rating (NBI ITEM #59)</b>			

## ITEM #60: SUBSTRUCTURE FEATURES

### Rating Guidelines

Code	Description
N	<b>NOT APPLICABLE</b>
9	<b>EXCELLENT CONDITION</b>
8	<b>VERY GOOD CONDITION:</b> No problems noted.
7	<b>GOOD CONDITION:</b> Some minor problems. Channel Profile has naturally balanced itself, a change less than 1 ft. is apparent ( $\Delta < 1\text{ft}$ )
6	<b>SATISFACTORY CONDITION:</b> Structural elements show some minor deterioration.
5	<b>FAIR CONDITION:</b> All primary structural elements are sound but may have minor section loss, cracking, spalling or scour. Channel Profile has changed more than 1 ft. less than 3 ft. ( $1\text{ft} < \Delta < 3\text{ft}$ )
4	<b>POOR CONDITION:</b> Advanced section loss, deterioration, spalling or scour.
3	<b>SERIOUS CONDITION:</b> Loss of section, deterioration, spalling or scour has seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present. Channel Profile has changed more than 3 ft. ( $\Delta > 3\text{ft}$ ).
2	<b>CRITICAL CONDITION:</b> Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	<b>IMMINENT FAILURE CONDITION:</b> Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put back in light service.
0	<b>FAILED CONDITION:</b> Out of service – beyond corrective action.

### Components Rating

Rating	Component	Unit	Amt	Remarks
6	<b>1. Abutments</b> a) Wings	SF	160	Trees are growing against the Northwest Wingwall. The tops of both of the South Wingwalls were removed and patched. The patches have minor honeycombing, delamination, and spalling throughout.
6	b) Backwall	SF	150	The backwalls typically have water stains. The top of each backwall was chipped away at the east side, possibly from impact damage. The top of each backwall along the approach transitions has minor chipping. At the South Abutment Backwall, there is minor scaling with minor visible aggregate at the top of the backwall and one full height hairline vertical crack.
7	c) Bearing Seats	EA	2	The abutment seats are mostly buried with accumulated dirt and debris throughout (2016, Def. No. 2, Photo 21). The masonry plates exhibit lamination to the edges and the anchor bolts have blossoming to the nuts.
N	d) Breast Wall / Bulkhead	SF	UNK	The abutment breast walls are buried.
N	e) Footing	SF	0	None
N	f) Piles	EA	0	None
N	g) Bracing	LF	0	None
7	h) Scour / Erosion			None
7	i) Streambed Change			None
7	j) Settlement			None

**ITEM #60: SUBSTRUCTURE FEATURES (CONTINUED)**

**Components Rating**

Rating	Component	Unit	Amt	Remarks
N	<b>2. Piers / Bents / Piles</b> a) Caps	EA	0	None
N	b) Bearing Seats	EA	0	None
N	c) Column, Stem, Wall	SF	0	None
N	d) Footing	SF	0	None
N	e) Piles	EA	0	None
N	f) Bracing	EA	0	None
N	g) Scour / Erosion			None
N	h) Streambed Change			None
N	i) Settlement			None
<b>6</b>	<b>General Condition Rating (NBI ITEM #60)</b>			

## ITEM #61: CHANNEL / CHANNEL PROTECTION

### Rating Guidelines

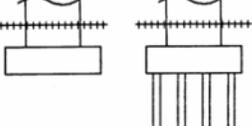
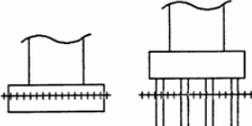
Code	Description
N	Not applicable. Use when bridge is not over a waterway (channel).
9	<b>EXCELLENT CONDITION:</b> There are no noticeable or noteworthy deficiencies, which affect the condition.
8	<b>VERY GOOD CONDITION:</b> Banks are protected or well vegetated. River control devices such as spur dikes and embankment protection are not required or are in a stable condition.
7	<b>GOOD CONDITION:</b> Some minor problems. Bank protection is in need of minor repairs. River control devices and embankment protection have a little minor damage. Banks and/or channel have minor amounts of drift.
6	<b>SATISFACTORY CONDITION:</b> Elements show some minor deterioration. Bank is beginning to slump. River control devices and embankment protection have widespread minor damage. There is minor streambed movement evident. Debris is restricting the channel slightly.
5	<b>FAIR CONDITION:</b> Bank protection is being eroded. River control devices and/or embankment have major damage. Trees and brush restrict the channel.
4	<b>POOR CONDITION:</b> Advanced deterioration. Bank and embankment protection is severely undermined. River control devices have severe damage. Large deposits of debris are in the channel.
3	<b>SERIOUS CONDITION:</b> Bank protection has failed. River control devices destroyed. Streambed aggradation, degradation or lateral movement has changed the channel to now threaten the bridge and/or approach roadway.
2	<b>CRITICAL CONDITION:</b> Advanced deterioration. Unless closely monitored it may be necessary to close the bridge until corrective action is taken. The channel has changed to the extent the bridge is near a state of collapse.
1	<b>IMMINENT FAILURE CONDITION:</b> Major deterioration. Bridge closed to traffic because of channel failure. Corrective action may put back in light service.
0	<b>FAILED CONDITION:</b> Bridge closed because of channel failure. Replacement necessary.

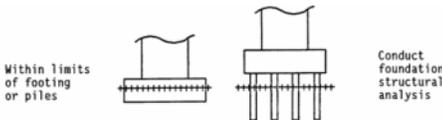
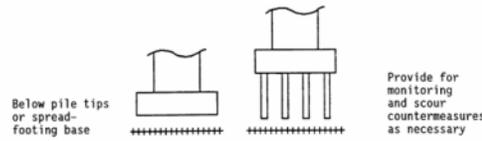
### Components Rating

Rating	Component	Remarks
7	<b>1. Channel Scour</b>	None
6	<b>2. Embankment Erosion</b>	There is minor erosion on both the upstream and downstream channel banks.
8	<b>3. Waterway Obstructions</b>	None
7	<b>4. Vegetation</b>	There are small trees growing in front of both abutments.
6	<b>5. Channel Protection</b>	The embankments have scattered riprap.
7	<b>6. Adequacy of Opening (NBI Item #71)</b>	Open without obstructions.
6	<b>General Condition Rating (NBI ITEM #61)</b>	

## ITEM #113: SCOUR CRITICAL BRIDGES

### Rating Guidelines

Code	Description
N	Bridge not over waterway.
U	Bridge with "unknown" foundation that has not been evaluated for scour. Until risk can be determined, a plan of action should be developed and implemented to reduce the risk to users from a bridge failure during and immediately after a flood event. (see HEC 23).
T	Bridge over "tidal" waters that have not been evaluated for scour, but considered low risk. Bridge will be monitored with regular inspection cycle and with appropriate underwater inspections until an evaluation is performed. ("Unknown" foundations in "tidal" waters should be coded U.)
9	Bridge foundations (including piles) on dry land well above flood water elevations.
8	<p>Bridge foundations determined to be stable for the assessed or calculated scour condition: Scour is determined to be above top of footing (Example A) by assessment (i.e., bridge foundations are on rock formations that have been determined to resist scour within the service life of the bridge<sup>4</sup>), by calculation or by installation of properly designed countermeasures (see HEC 23).</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">Above top of footing</div>  </div>
8P	Bridge is a culvert-type structure with paved bottom.
8L	Bridge has been <b>evaluated / assessed</b> as a low risk structure and no further study is required.
7	Countermeasures have been installed to mitigate an existing problem with scour and to reduce the risk of bridge failure during a flood event. Instructions contained in a plan of action have been implemented to reduce the risk to users from a bridge failure during or immediately after a flood event.
6	Scour calculation/evaluation has not been made. (Use only to describe case where bridge has not yet been evaluated for scour potential.)
6R	Bridge is scheduled for major rehabilitation or replacement within the next 5 years; the scour study is deferred to the location/design phase of the bridge project. Periodic monitoring may be necessary.
6U	Bridge foundations are unknown. The bridge site conditions have been <b>evaluated / assessed</b> with cursory study in the field and office, and the risk of potential damage from scour is judged to be moderate or mild. Structure has no history of scour problems. Further evaluation is deferred. If the risk of damage from potential or actual scour damage is judged to be severe, additional scour studies will be undertaken including borings or others means of subsurface exploration to ascertain foundation and supporting soil conditions.
5	<p>Bridge foundations determined to be stable for assessed or calculated scour condition: Scour is determined to be within the limits of footing or piles (Example B) by assessment (i.e., bridge foundations are on rock formations that have been determined to resist scour within the service life of the bridge), by calculations or by installation of properly designed countermeasures (see HEC 23).</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">Within limits of footing or piles</div>  </div>

Code	Description
4	Bridge foundations determined to be stable for assessed or calculated scour conditions; field review indicates action is required to protect exposed foundations (see HEC 23).
3	<p>Bridge is scour critical; bridge foundations determined to be unstable for assessed or calculated scour conditions:</p> <ul style="list-style-type: none"> <li>- Scour within limits of footing or piles.</li> </ul>  <ul style="list-style-type: none"> <li>- Scour below spread-footing base or pile tips.</li> </ul> 
3M	Bridge is rated as scour critical on the basis of an evaluation and/or analysis; the potential risk is judged to be mild or moderate, and no actions are planned other than monitoring during routine inspections and after flood events.
3C	Bridge is rated as scour critical on the basis of an evaluation and/or analysis; the potential risk is judged to be severe and scour countermeasures are planned. Monitoring is to be performed until scour countermeasures are in place.
2	Bridge is scour critical; field review indicates that extensive scour has occurred at bridge foundations, which are determined to be unstable by: <ul style="list-style-type: none"> <li>- a comparison of calculated scour and observed scour during the bridge inspection, or</li> <li>- an engineering evaluation of the observed scour condition reported by the bridge inspector in Item 60.</li> </ul>
1	Bridge is scour critical; field review indicates that failure of piers/abutments is imminent. Bridge is closed to traffic. Failure is imminent based on: <ul style="list-style-type: none"> <li>- a comparison of calculated and observed scour during the bridge inspection, or</li> <li>- an engineering evaluation of the observed scour condition reported by the bridge inspector in Item 60.</li> </ul>
0	Bridge is scour critical. Bridge has failed and is closed to traffic.

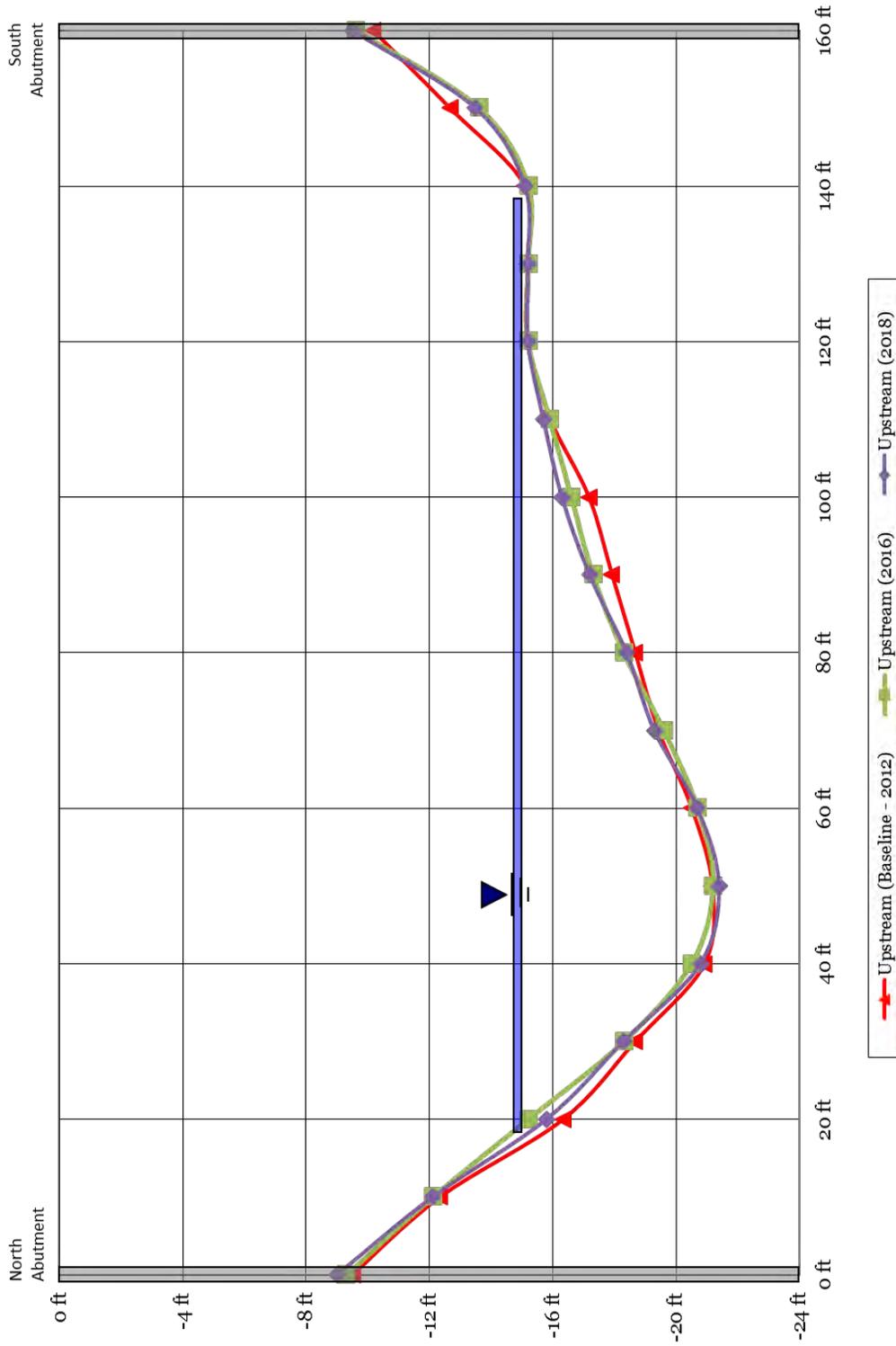
### **Component Rating**

Rating	Component	POA In place (Y/N/NA)	Remarks
8	NBI ITEM #113	N/A	Bridge foundations determined to be stable for assessed scour conditions.

\* If Item 113= 0, 1, 2, 3, or U POA is required.

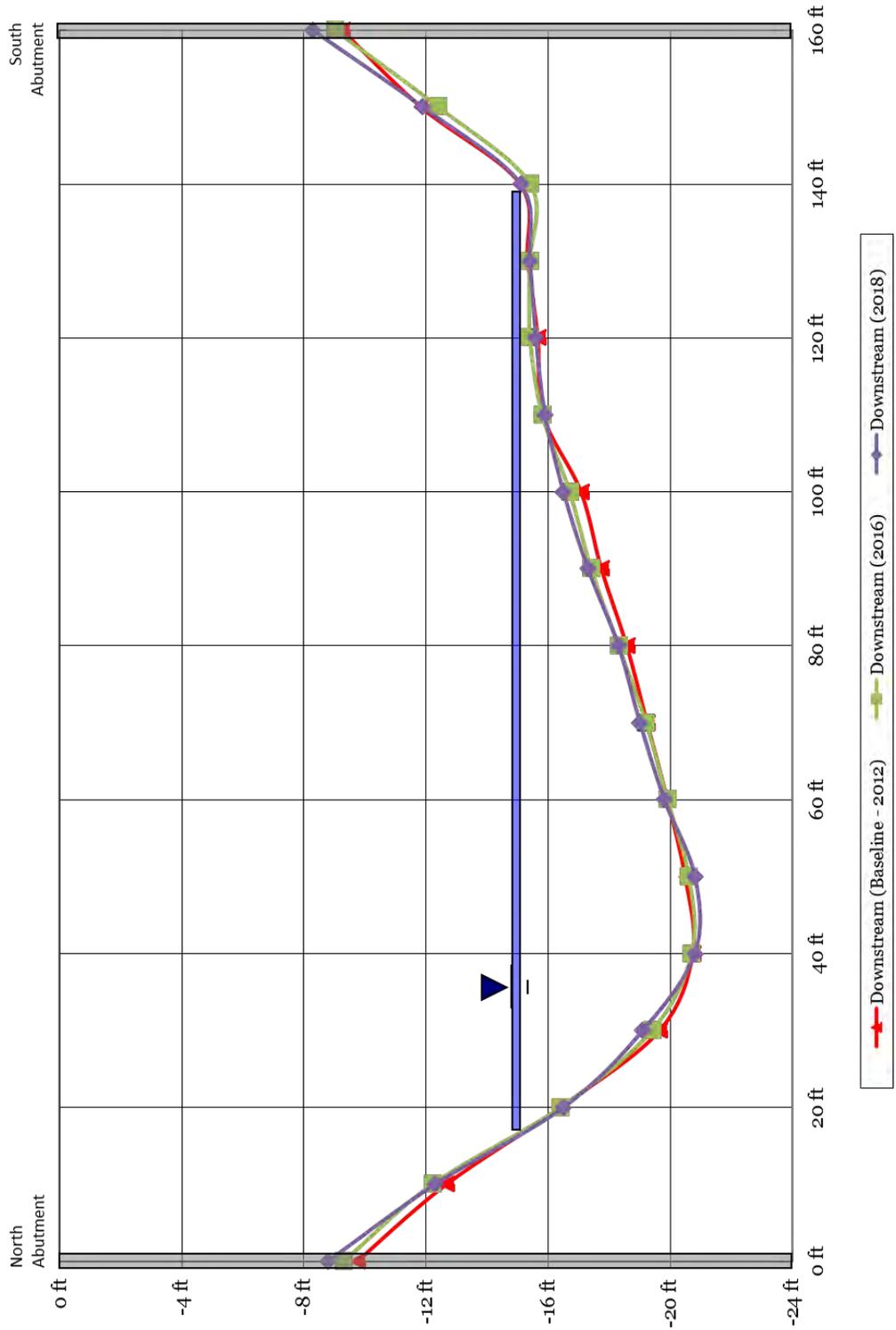
# CHANNEL PROFILE

**Upstream Channel Profile - Bridge 01590**  
Reference Point: Top of Truss Top Chord



# CHANNEL PROFILE (CONTINUED)

**Downstream Channel Profile - Bridge 01590**  
Reference Point: Top of Truss Top Chord



# APPENDIX A – FRACTURE CRITICAL MEMBER INSPECTION PLAN

## FRACTURE CRITICAL MEMBER (FCM) INSPECTION PLAN

FORT BELVOIR, VIRGINIA

BRIDGE 01590

DEVELOPED BY: Brandon Rice, P.E. (PRIME AE Group, Inc.)

LAST REVISION: 7 November 2016

LAST REVISION BY: BJR

### 1.0 Bridge and Component Identification

- 1.1 **Bridge Type and Construction** – Vehicular Bridge 01590 is a single-span pony truss.
- 1.2 **Fracture Critical Member Identification** – Bridge 01590 contains truss elements (truss lower chord, truss diagonals, gusset plate connections) and floorbeams that are considered fracture critical. See FCM drawings on Pages 3 and 4 for detail and locations. See Fracture Critical Member Inventory table on Page 5 for detailed description, location, AASHTO fatigue category, and inspection details for each FCM.

**2.0 Bridge File:** The bridge file for this structure is maintained by the US Army Corps of Engineers. Only current and previous inspection reports were available and used to develop this plan.

### 3.0 Pre-Inspection Plan

- 3.1 **Bridge File Review:** The FCM Inspection Plan was initially developed from bridge inspection file documents. The original bridge plans are not available and truss dimensions were determined in the field. Current and previous inspection reports were reviewed.
- 3.2 **FCM Review:** Previous inspection reports, including sketches and photographs are reviewed for this inspection.
- 3.3 **Field Forms:** Standard FCM field forms will be created for this inspection. Forms will include sketches of the truss with FCM locations noted. Deficiencies will be noted on the field forms. Field notes will be taken to identify fracture critical elements and record their condition states. Photographs will be taken and logged to identify general fracture critical elements as well as deficiencies found during the inspection.
- 3.4 **Personnel Requirements and Qualifications:** Team members and qualifications for this fracture critical inspection are (FCM inspection only):  
**Team Leader – Jason Wolfe, PE** (FHWA Safety Inspection of In-Service Bridges, FHWA Fracture Critical Inspection Techniques for Steel Bridge)  
**Project Manager – John M. Branyan, PE** (FHWA Safety Inspection of In-Service Bridges, FHWA Bridge Inspection Refresher Training, FHWA Fracture Critical Inspection Techniques for Steel Bridge, PennDOT Inspecting Steel Bridges for Fatigue)

**3.5 Inspection Tools** – Tools used for this inspection include folding and retractable tape measures, digital calipers, laser distance meter, thickness meter (D-meter), crack comparator cards, 1-foot and 3-foot levels w/ tilt meter, steel brush, keel, paint markers, permanent markers, scraper, flat blade screw driver, pocket knife, geologists hammer, plumb bob, inspection mirror, and a flashlight. A digital camera will be used to document the inspection. A dye penetrant kit will be on hand for this inspection.

**3.6 Access Requirements** – Rigging will be used for this inspection to provide hands-on access to all lower and diagonal truss elements, including all connection (panel) points, as well as access to all floorbeams.

**3.7 NDT and Other Specialized Needs** – A dye penetrant kit will be on site in the event it will be needed for this inspection.

**3.8 Safety and Traffic Control Plans** – PRIME's standard safety plan, as well as OSHA requirements will be adhered to for the duration of this inspection. No traffic control plan is required. Coordination with Fort Belvoir personnel (David Cole, 703-806-0063 or Anhhuy Huynh, 703-806-3409) is required.

**3.9 Scheduling and Coordination** – Scheduling for this inspection is coordinated with the installation POC.

**3.10 Quality Control** – The Team Leader will conduct quality control during planning, inspection, and draft reporting phases of this inspection. The Project Manager will provide quality control for the final report.

### 4.0 Field Inspection

**4.1 Pre-Inspection Meeting** – The Team Leader will conduct a pre-inspection meeting at the installation prior to the field inspection. Participants will include all inspection personnel and the installation POC at a minimum. The meeting will include a review of the inspection plan, safety plan, and critical findings reporting requirements.

**4.2 Inspection Procedures** – Inspection procedures for this bridge will include sequential inspection, FCM condition assessment, and documentation, including photographing all elements. Sequence will begin at the truss lower chord at L0 and move station ahead to L9. This will include evaluation of all truss elements, as well as all floorbeams. Upon completion of the truss lower chord, all truss diagonals will be evaluated.

**4.3 Documentation Procedures** – This inspection will use PRIME standard inspection forms and photographs to identify and document the location, type, and condition of specific deficiencies. Specific deficiencies will be noted on report sketches. The installation POC will be notified immediately by telephone should any deficiencies be discovered that require immediate actions or repairs.

**FRACTURE CRITICAL MEMBER (FCM) INSPECTION PLAN**

**FORT BELVOIR, VIRGINIA**

**BRIDGE 01590**

**DEVELOPED BY: Brandon Rice, P.E. (PRIME AE Group, Inc.)**

**LAST REVISION: 7 November 2016**

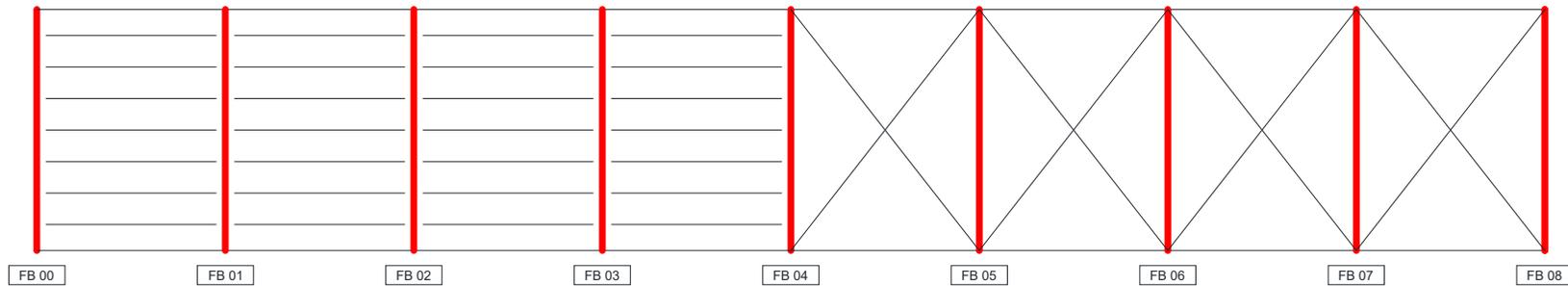
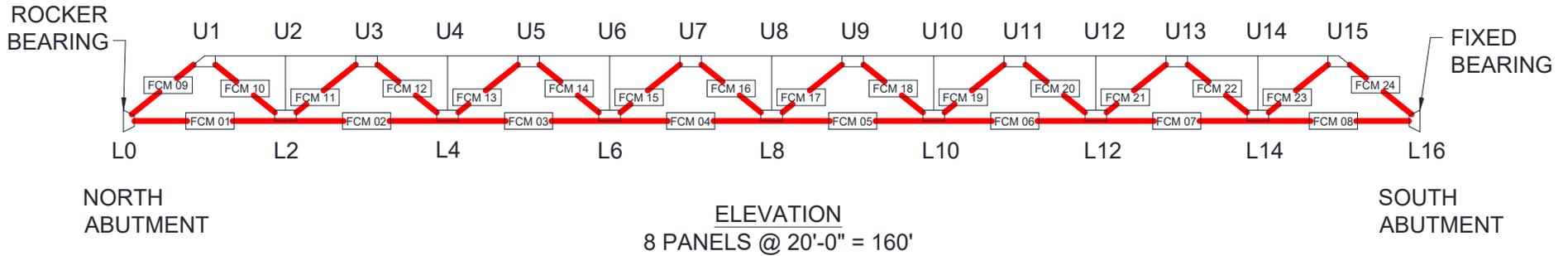
**LAST REVISION BY: BJR**

**4.4 Quality Control During the Inspection** – The Team Leader will be responsible for QC activities during the inspection. Field QC will include monitoring inspection personnel for proper access, procedures, and documentation, monitor NDT for compliance, monitor all inspection personnel for adherence to the safety plan, monitor schedule and coordination, and provide updates to the inspection plan, safety plan, and coordination plan as needed.

**FRACTURE CRITICAL MEMBER (FCM) INSPECTION PLAN**  
**FORT BELVOIR, VIRGINIA**  
**BRIDGE 01590**

DEVELOPED BY: Brandon Rice, P.E. (PRIME AE Group, Inc.)  
 LAST REVISION: 7 November 2016  
 LAST REVISION BY: BJR

**FCM LOCATIONS**



HALF PLAN OF FLOOR FRAMING

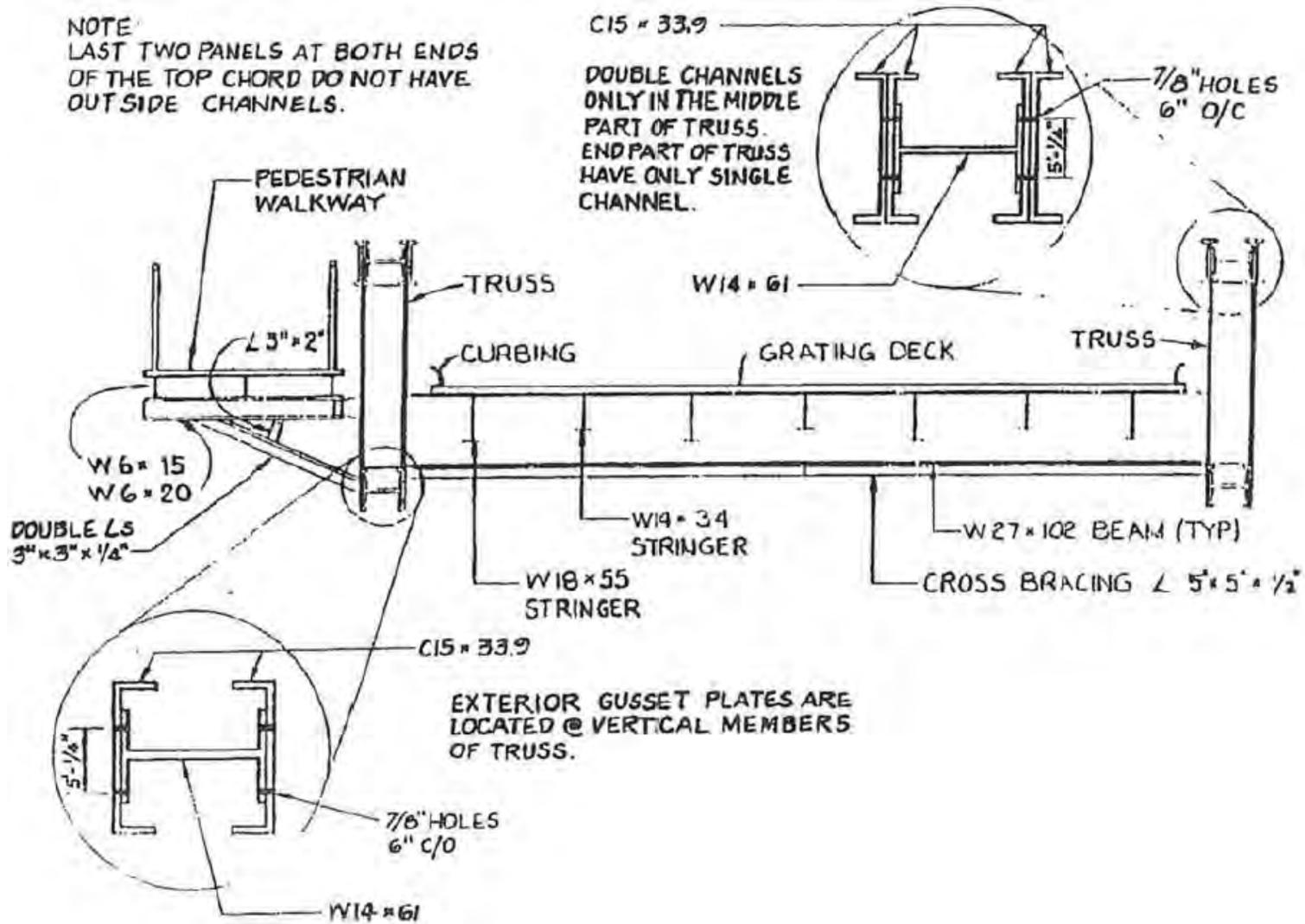
HALF PLAN OF LATERAL SYSTEM

- FCM XX - Fracture Critical Member Number
- - Fracture Critical Member
- FB 01 - Floorbeam Number
- Gusset Plate Connection

NOTES:  
 Left and Right Trusses have the same arrangement  
 All diagonal members are considered fracture critical  
 All gusset plates are considered fracture critical

**FRACTURE CRITICAL MEMBER (FCM) INSPECTION PLAN**  
**FORT BELVOIR, VIRGINIA**  
**BRIDGE 01590**

DEVELOPED BY: Brandon Rice, P.E. (PRIME AE Group, Inc.)  
 LAST REVISION: 7 November 2016  
 LAST REVISION BY: BJR



**FRACTURE CRITICAL MEMBER (FCM) INSPECTION PLAN**  
**FORT BELVOIR, VIRGINIA**  
**BRIDGE 01590**

DEVELOPED BY: Brandon Rice, P.E. (PRIME AE Group, Inc.)  
 LAST REVISION: 7 November 2016  
 LAST REVISION BY: BJR

Fracture Critical Member Inventory						
FCM Location	FCM Member Type	FCM Number	FCM Description	Member Detail	AASHTO Fatigue Category	Inspection Procedure for FCM (Note if Interim Inspection is required)
Span 1	Truss – Lower Chord	FCM01 thru FCM08	Lower Chord Built-Up Section (Double Channel and Single W-Section)-Gusset Plate riveted/bolted connection.	Net section of member originating at the side of the hole or through the gross section near the hole.	D	Inspect the net section originating at the sides of the rivet holes and near rivet holes through the gross section. Inspect the weld and base metal at the connection between the west sidewalk supporting members and the lower chord (category C). Inspect the weld between the random sections of rebar welded to lower chord.
Span 1	Truss - Diagonal	FCM09 thru FCM24	Truss Diagonal (W-Shape with cover WT at the end diagonals)-Gusset Plate riveted/bolted connection	Net section of member originating at the side of the hole or through the gross section near the hole.	D	Inspect the net section originating at the sides of the rivet holes and near rivet holes through the gross section. Inspect the weld and base metal at the welded spacers between the built-up diagonal members (Fatigue Category D). Inspect the weld and base metal at the connection between the west sidewalk handrails and diagonals (Fatigue Category C).
Span 1	Cross Beam	FB00 thru FB08	Floorbeam	Tension flange of the floorbeam and connection to the truss	D	Inspect the tension (bottom) flange and the mechanical connection to the truss longitudinal fascia girders.
<b>NOTES:</b> None						<b>By: BJR</b> <b>Date: 11-07-2016</b>

**FRACTURE CRITICAL MEMBER (FCM) INSPECTION PLAN**  
**FORT BELVOIR, VIRGINIA**  
**BRIDGE 01590**

**DEVELOPED BY: Brandon Rice, P.E. (PRIME AE Group, Inc.)**  
**LAST REVISION: 7 November 2016**  
**LAST REVISION BY: BJR**

**PHOTOGRAPHS**



**Truss Configuration**



**Typical Lower Chord/Floorplan**

**FRACTURE CRITICAL MEMBER (FCM) INSPECTION PLAN**  
**FORT BELVOIR, VIRGINIA**  
**BRIDGE 01590**

**DEVELOPED BY: Brandon Rice, P.E. (PRIME AE Group, Inc.)**  
**LAST REVISION: 7 November 2016**  
**LAST REVISION BY: BJR**



**Typical Truss Vertical/Diagonal/Gusset Plate Connections**



**Open holes in lower chord members (Fatigue Category D)**

**FRACTURE CRITICAL MEMBER (FCM) INSPECTION PLAN**  
**FORT BELVOIR, VIRGINIA**  
**BRIDGE 01590**

**DEVELOPED BY: Brandon Rice, P.E. (PRIME AE Group, Inc.)**  
**LAST REVISION: 7 November 2016**  
**LAST REVISION BY: BJR**



**West Sidewalk Handrail Welds to Lower Chord (Fatigue Category C)**



**Random sections of rebar welded to lower chord (Fatigue Category C)**

**FRACTURE CRITICAL MEMBER (FCM) INSPECTION PLAN**  
**FORT BELVOIR, VIRGINIA**  
**BRIDGE 01590**

**DEVELOPED BY: Brandon Rice, P.E. (PRIME AE Group, Inc.)**  
**LAST REVISION: 7 November 2016**  
**LAST REVISION BY: BJR**



**Welded Spacers Between Built-Up Diagonal Members (Fatigue Category D)**



**West Sidewalk Handrail Welds to Truss Diagonals (Fatigue Category C)**

**APPENDIX B – AGENCY COORDINATION**



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Virginia Ecological Services Field Office  
6669 Short Lane  
Gloucester, VA 23061-4410  
Phone: (804) 693-6694 Fax: (804) 693-9032  
<http://www.fws.gov/northeast/virginiafield/>

In Reply Refer To:

August 08, 2019

Consultation Code: 05E2VA00-2019-SLI-5715

Event Code: 05E2VA00-2019-E-14183

Project Name: Dogue Creek Bridge Rehabilitation EA

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
-

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Virginia Ecological Services Field Office**

6669 Short Lane

Gloucester, VA 23061-4410

(804) 693-6694

---

## Project Summary

Consultation Code: 05E2VA00-2019-SLI-5715

Event Code: 05E2VA00-2019-E-14183

Project Name: Dogue Creek Bridge Rehabilitation EA

Project Type: \*\* OTHER \*\*

Project Description: Rehabilitating Dogue Creek Bridge by removing and replacing the bridge's superstructure.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.70914478699117N77.13282392837212W>



Counties: Fairfax, VA

---

## Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

---

# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

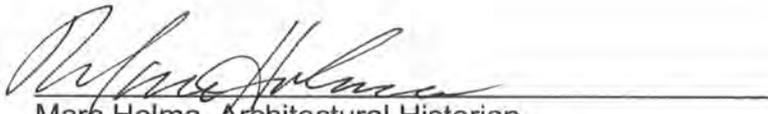
---

US Army Garrison Fort Belvoir

Section 106 Consultation; Repair of the Dogue Creek Bridge by Replacement of Superstructure, Fort Belvoir, Virginia

VDHR File #: 2019-0210

VDHR has reviewed the proposed undertaking and concurs with the Army's determination of an Adverse Effect to a Historic Property.



Marc Holma, Architectural Historian  
Office of Review and Compliance  
Virginia Department of Historic Resources

6 June 19  
Date



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

IMBV-XO

18 September 2019

MEMORANDUM FOR RECORD

SUBJECT: Assumption of Command

1. Effective 18 – 27 September 2019, the undersigned assumes Command of the U.S. Army Garrison (W4VNAA), Fort Belvoir, VA 22060-5929.
2. Authority: Para 2-5d, AR 600-20.
3. Effective 0001, 15 April 2019.

A handwritten signature in black ink, appearing to read "Andrew J. Wilbraham", written over a horizontal line.

ANDREW J. WILBRAHAM  
LTC, AR  
Commanding



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement Draft Memorandum of Agreement, Fort Belvoir, Virginia

Mr. Marc Holma  
Architectural Historian  
Department of Historic Resources  
2801 Kensington Avenue  
Richmond, Virginia 23221

Dear Mr. Holma:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

---

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

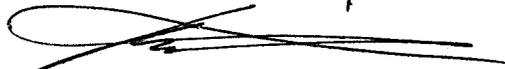
The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

**“LEADERS IN EXCELLENCE”**

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and 11 Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, Upper Mattaponi Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Rappahannock Tribe, the Chickahominy Indians Eastern Division, and the Nansemond Indian Tribe.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,



for Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

---

Enclosures



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

Caitlin Rogers  
Catawba Indian Nation  
Tribal Historic Preservation Office  
1536 Tom Steven Road  
Rock Hill, South Carolina 29730

Dear Ms. Rogers:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

---

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge

**“LEADERS IN EXCELLENCE”**

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and ten other Federally recognized American Indian tribes: the Chickahominy Indians Eastern Division, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Rappahannock Tribe, the Upper Mattaponi Indian Tribe and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,



for

Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

---

Enclosures



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

Principal Chief Richard Sneed  
Eastern Band of Cherokee Indians  
Qualla Boundary P.O. Box 455  
Cherokee, North Carolina 28719

Dear Principal Chief Sneed:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

---

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed

**“LEADERS IN EXCELLENCE”**

Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and ten other Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Chickahominy Indians Eastern Division, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Rappahannock Tribe, the Upper Mattaponi Indian Tribe and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael H. Greenberg", with a small circular mark at the beginning of the signature.

Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

Enclosures

---



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

Chief Joe Bunch  
United Keetowah of Cherokee Indians in Oklahoma  
P.O. Box 746  
Tahlequah, Oklahoma 74465

Dear Chief Bunch:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed

**“LEADERS IN EXCELLENCE”**

Draft MOA. In accordance with 36CFR800.6(a)(1), Fort Belvoir has invited the SHPO and the Advisory Council on Historic Preservation to participate in this agreement along with Fairfax County, the Mount Vernon Ladies Association, and ten other Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the Chickahominy Indians Eastern Division, the Upper Mattaponi Indian Tribe, the Pamunkey Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Rappahannock Tribe, and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael H. Greenberg", with a large, sweeping flourish extending to the right.

Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

Enclosures

---



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

Chief Robert Gray  
Pamunkey Indian Tribe  
1054 Pochahontas Trail  
King William, Virginia 23086

Dear Chief Gray:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

---

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed

**“LEADERS IN EXCELLENCE”**

Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and 10 other Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Chickahominy Indians Eastern Division, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Rappahannock Tribe, the Upper Mattaponi Indian Tribe and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael H. Greenberg", with a long horizontal flourish extending to the right.

Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

Enclosures

---



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

Chief Leo Henry  
Tuscarora Nation of New York  
2006 Mt. Hope Road  
Lewistown, New York 14092

Dear Chief Henry:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

---

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed

**“LEADERS IN EXCELLENCE”**

Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and ten other Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, the Chickahominy Indians Eastern Division, the Upper Mattaponi Indian Tribe, the Chickahominy Indian Tribe, the Rappahannock Tribe, and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael H. Greenberg", with several overlapping strokes and a small mark at the end.

Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

Enclosures

---



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

Chief Stephen R. Adkins  
Chickahominy Indian Tribe  
8200 Lott Cary Road  
Providence Forge, Virginia 23140

Dear Chief Adkins:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

~~The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway~~ and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

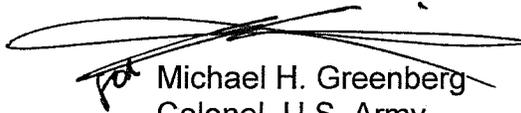
In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed

**“LEADERS IN EXCELLENCE”**

Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and 11 Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indians Eastern Division, the Rappahannock Tribe, the Upper Mattaponi Indian Tribe and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Greenberg", is written over a horizontal line.

Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

Enclosures

---



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation –Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

Chief Frank Adams  
Upper Mattaponi Indian Tribe  
P.O. Box 184  
King William, Virginia 23086

Dear Chief Adams:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

---

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed

**“LEADERS IN EXCELLENCE”**

Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and 11 Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Rappahannock Tribe, the Chickamony Indians Eastern Division and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael H. Greenberg", with a large, sweeping flourish extending to the right.

Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

Enclosures

---



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

Assistant Chief Gerald Stewart  
Chickahominy Indians Eastern Division  
2895 Mt. Pleasant Road  
Providence Forge, Virginia 23140

Dear Assistant Chief Stewart:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

---

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed

**“LEADERS IN EXCELLENCE”**

Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and ten other Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Rappahannock Tribe, the Upper Mattaponi Indian Tribe and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael H. Greenberg", with a small star symbol to the left of the name.

Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

Enclosures

---



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

Chief Anne Richardson  
Rappahannock Tribe  
5036 Indian Neck Road  
Indian Neck, Virginia 23148

Dear Chief Richardson:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

---

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed

**“LEADERS IN EXCELLENCE”**

Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and ten other Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Chickahominy Indians Eastern Division, the Upper Mattaponi Indian Tribe and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael H. Greenberg", written over a horizontal line.

Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

Enclosures

---



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

Tribal Chief Dean Branham  
Monacan Indian Nation  
P.O. Box 960  
Amherst, Virginia 24571

Dear Tribal Chief Branham:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

---

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed

**“LEADERS IN EXCELLENCE”**

Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and ten other Federally recognized American Indian tribes: Catawba Indian Nation, the Chickahominy Indians Eastern Division, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Rappahannock Tribe, the Upper Mattaponi Indian Tribe and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,

  
Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

Enclosures

---



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

Chief Samuel Bass  
Nansemond Indian Tribe  
1001 Pembroke Lane  
Suffolk, Virginia 23434

Dear Chief Bass:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

---

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

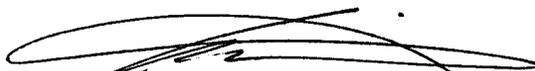
In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed

**“LEADERS IN EXCELLENCE”**

Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and ten other Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Rappahannock Tribe, the Upper Mattaponi Indian Tribe and the Chickahominy Indians Eastern Division.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,

A handwritten signature in black ink, appearing to read "M. H. Greenberg", written over a horizontal line.

Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

Enclosures

---



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

Mr. Christopher Daniel  
Program Analyst  
Advisory Council on Historic Preservation  
401 F Street NW, Suite 308  
Washington DC 20001-2637

Dear Mr. Daniel:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

---

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

**“LEADERS IN EXCELLENCE”**

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed Draft MOA. In accordance with 36CFR800.6(a)(1), Fort Belvoir has invited the SHPO to participate in this agreement along with Fairfax County, the Mount Vernon Ladies Association, and 11 Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Rappahannock Tribe, the Chickahominy Indians Eastern Division, the Upper Mattaponi Indian Tribe and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,



Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

---

Enclosures



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

SEP 25 2019

Directorate of Public Works

SUBJECT: Section 106 Consultation –Dogue Creek Bridge Superstructure  
Replacement Draft Memorandum of Agreement, Fort Belvoir, Virginia

Ms. Laura Arseneau  
Fairfax County Dept. of Planning & Zoning  
12055 Government Center Parkway  
DPZ-PD, Suite 730  
Fairfax, Virginia 22035

Dear Ms. Arseneau:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

**“LEADERS IN EXCELLENCE”**

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and 11 Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Rappahannock Tribe, the Chickahominy Indians Eastern Division, the Upper Mattaponi Indian Tribe and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,



Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

---

Enclosures



**DEPARTMENT OF THE ARMY**  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT BELVOIR  
9820 FLAGLER ROAD, SUITE 213  
FORT BELVOIR, VIRGINIA 22060-5928

Directorate of Public Works

SUBJECT: Section 106 Consultation – Dogue Creek Bridge Superstructure Replacement, Draft Memorandum of Agreement, Fort Belvoir, Virginia

SEP 25 2019

Dr. Doug Bradburn  
Mount Vernon Ladies Association  
P.O. Box 110  
Mount Vernon, Virginia 22121

Dear Dr. Bradburn:

Fort Belvoir has determined that the Dogue Creek Bridge no longer meets mission requirements and has become a safety hazard. Built in 1958, the bridge was recently determined to be eligible for listing on the National Register of Historic Places (VDHR File No. 2019-0210). Fort Belvoir intends to repair the bridge by the removal and subsequent replacement of the superstructure. Fort Belvoir has determined, and the Virginia State Historic Preservation Office (SHPO) concurred, that this undertaking constitutes an adverse effect to the historic property.

---

The Dogue Creek Bridge consists of two vehicular lanes with a pedestrian walkway and serves as a connection between Fort Belvoir and the Mount Vernon Memorial Parkway. Its construction is credited to the 497<sup>th</sup> Engineer Company and the 79<sup>th</sup> Engineer Group (Construction). While individual segments of the bridge were constructed on site as training for the Engineer School students throughout the 1940s, the final assembly of the bridge officially began in July of 1958. The parts were assembled on a barge and then towed four miles up the Potomac River to the construction site by a Landing Craft Mechanized (LCM)-6. Pictures documenting the different phases of installation are included in the Phase I/ Reconnaissance Survey (enclosed).

The proposed undertaking includes the removal of the existing metal truss bridge and sidewalk structure; the replacement of existing bearings; the installation of a new bridge superstructure, and the replacement of the concrete sidewalks at each end of the bridge (100% design plans enclosed). Fort Belvoir has made efforts to identify other historic resources within and adjacent to the Area of Potential Effect (enclosed) and identified the ineligible archaeological site, 44FX0009, on the west bank of the bridge.

In accordance with 36CFR800.6(c), Fort Belvoir has drafted a Memorandum of Agreement (MOA) for review and comment. Please provide comment on the enclosed

**“LEADERS IN EXCELLENCE”**

Draft MOA. In accordance with 36CFR800.6(a)(1), the Advisory Council on Historic Preservation has been invited to participate in this agreement, along with Fairfax County, the Mount Vernon Ladies Association, and 11 Federally recognized American Indian tribes: Catawba Indian Nation, Monacan Indian Nation, the Eastern Band of Cherokee Indians, the United Keetowah Band of Cherokee Indians in Oklahoma, the Pamunkey Indian Tribe, the Tuscarora Nation of New York, the Chickahominy Indian Tribe, the Rappahannock Tribe, the Upper Mattaponi Indian Tribe, the Chickahominy Indians Eastern Division and the Nansemond Indian Nation.

Point of contact is Christopher W. Landgraf, Acting Director of Public Works at 703-806-4194.

Sincerely,

A handwritten signature in black ink, appearing to read "M. Greenberg", written over a horizontal line.

*for* Michael H. Greenberg  
Colonel, U.S. Army  
Commanding

Enclosures

---

**MEMORANDUM OF AGREEMENT**

**BETWEEN**

**US ARMY GARRISON, FORT BELVOIR, VIRGINIA**

**AND THE**

**VIRGINIA STATE HISTORIC PRESERVATION OFFICER**

**TO MITIGATE ADVERSE EFFECTS FROM THE REPLACEMENT OF THE DOGUE**

**CREEK BRIDGE SUPERSTRUCTURE, FORT BELVOIR, VIRGINIA**

WHEREAS, Fort Belvoir has determined that the Dogue Creek Bridge is currently a safety hazard and is no longer meeting mission requirements; and

WHEREAS, Fort Belvoir proposes to make repairs to the bridge by removing and subsequently replacing the superstructure of the existing Dogue Creek Bridge; and

WHEREAS, Fort Belvoir, in consultation with the Virginia State Historic Preservation Officer (SHPO) has established the undertaking's Area of Potential Effect (APE) for direct effects (to include ground disturbance), as defined at 36CFR800.16(d), to be the limits of the construction, as illustrated in Attachment A; and

WHEREAS, Fort Belvoir has determined, and the SHPO has concurred, the Dogue Creek Bridge is eligible for listing on the National Register of Historic Places (NRHP), citing significance under Criterion A through its association with education at the Army Engineer School throughout the 1950s, and citing significance under Criterion C with it being the one of the few remaining bridges of its kind in Virginia (VDHR File Num. 2019-0210); and

WHEREAS, Fort Belvoir has determined that the undertaking may have an adverse effect on the Dogue Creek Bridge, and has consulted with the SHPO pursuant to the 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (54 U.S.C 306108); and

WHEREAS, Fort Belvoir has determined, and the SHPO has concurred, that there are no other National Register-eligible or listed archeological resources within or adjacent to the APE; and

WHEREAS, in accordance with 36CFR800.6(a)(1), Fort Belvoir has notified the Advisory Council on Historic Preservation (ACHP) of its determination of adverse effect with specified documentation; and

WHEREAS, ACHP was invited to participate as a signatory in this Memorandum of Agreement (MOA) by letter on (INSERT DATE) and has chosen (to/not to) participate in the consultation pursuant to 36CFR800.6(a)(1)(iii); and

WHEREAS, Fort Belvoir invited Fairfax County to participate as signatory in the MOA for this undertaking in accordance with 36CFR800.6(c)(3) by letter on (INSERT DATE)), and Fairfax County has elected (to/ not to) participate in the consultation by (insert communication method) dated (INSERT DATE); and

WHEREAS, Fort Belvoir invited eleven of the Federally recognized American Indian tribes: Catawba Indian Nation, United Keetowah of Cherokee Indians in Oklahoma, Eastern Band of Cherokee Indians, Pamunkey Indian Tribe, Nansemond Indian Tribe, Rappahannock Tribe, Tuscarora Nation of New York, Monacan Indian Tribe, Upper Mattaponi Indian Tribe, Chickahominy Indian Tribe, Chickahominy Indians Eastern Division, to participate in the MOA for this undertaking as consulting parties on (INSERT DATE) by letter in accordance with 36CFR800.3(f)(2); and

WHEREAS, (INSERT TRIBE NAMES) elected to participate in the MOA by (letter/email) dated (INSERT DATE); and

WHEREAS, in accordance with 36CFR800.8(c), Fort Belvoir provided the public an opportunity to comment on this Undertaking through the NEPA process by means of an the Environmental Assessment for Dogue Creek Bridge Rehabilitation on (INSERT DATE); and

NOW THEREFORE, Fort Belvoir and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

---

## STIPULATIONS

Fort Belvoir will ensure that the following measures are carried out:

### I. HAER DOCUMENTATION

- a. Within six (6) months of the execution of this Agreement Fort Belvoir shall complete Level II Historic American Engineering Record (HAER) documentation of Dogue Creek Bridge. The HAER documentation shall consist of the following: a written history and description of the bridge; select existing drawings of the bridge photographed with large-format negatives or photographically reproduced on Mylar; photographs of Dogue Creek Bridge of exterior and interior views and historic views, where available; field records; and a digital copy of the complete survey with all support documents.
  - i. Fort Belvoir shall provide the SHPO a draft of the HAER documentation for review and concurrence.

- ii. Fort Belvoir shall provide to the SHPO two (2) archival copies of the final HAER documentation and one (1) digital copy of the final documentation. Fort Belvoir shall retain the original archival copy of the final HAER documentation and one (1) digital copy of the final documentation.
- iii. Fort Belvoir shall not proceed with demolition until SHPO has accepted the documentation package. The SHPO shall not unnecessarily withhold its concurrence with the documentation package.

## II. BELVOIR EAGLE ARTICLE

- a. Fort Belvoir shall develop, and publish in the Belvoir Eagle newspaper, a full page newspaper article on the history and significance of Dogue Creek Bridge. Copies of the published article shall be provided to the SHPO, and the Virginia Room of the Fairfax County Public Library.
    - i. The article shall be published within one (1) year of execution of this Agreement.
    - ii. Fort Belvoir shall develop an interpretive poster. The poster will discuss briefly the development of Fort Belvoir and Dogue Creek Bridge and The Engineer School.
    - iii. Fort Belvoir shall print 100 copies of the poster within one (1) year of execution of this Agreement. Unframed versions of the poster shall be provided to local libraries, high schools, and historical societies. A framed version of the poster shall be placed on display in Fort Belvoir Command Headquarters. An additional framed copy of the poster shall be provided to the Virginia Room of the Fairfax County Public Library for display.
    - iv. Fort Belvoir shall provide to the SHPO two (2) archival copies of the final poster and one (1) digital copy. Fort Belvoir shall retain the original archival copy of poster and one (1) digital copy.
- 

## III. INSTALLATION OF A HISTORIC MARKER

- a. Fort Belvoir shall develop and fund the fabrication and installation of an interpretive historic marker on the history of the Dogue Creek Bridge in consultation with the SHPO. Fort Belvoir shall install the interpretive historic marker adjacent to the site of the structure.
- b. Fort Belvoir shall submit the proposed design to the SHPO for review and comment on the design, text, and layout of the interpretive historic marker.
- c. Fort Belvoir shall provide the revised historic marker design to the SHPO, with a description of how any previous comments were addressed in the revised historic marker design.
- d. The marker shall be erected within two (2) years of the execution of this Agreement.

- e. Fort Belvoir shall notify the SHPO in writing upon the satisfaction of this stipulation.

#### IV. PROFESSIONAL QUALIFICATIONS

- a. For the purposes of this agreement, the Fort Belvoir staff shall include a Cultural Resource Manager (CRM) who shall serve as the primary contact with the SHPO, other consulting parties, and the public.
- b. The Fort Belvoir CRM shall have access to qualified professional(s) who meet the Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation (36 CFR Part 61, Appendix A) in the appropriate discipline.
- c. Fort Belvoir shall ensure that all stipulations carried out pursuant to this agreement are carried out by, under the supervision of, or in coordination with the Fort Belvoir CRM unless otherwise indicated in this agreement. If the qualified professional(s) for particular preservation activities are not available at the installation, Fort Belvoir shall ensure that the services of qualified professional(s) will be obtained as needed to appropriately address these activities.

#### V. ANTI-DEFICIENCY ACT

- a. The stipulations of this agreement are subject to the provisions of the Federal Anti-Deficiency Act (31 U.S.C 1341 et seq.). If compliance with the Anti-Deficiency Act would alter or impair Fort Belvoir's ability to implement the stipulations of this agreement, Fort Belvoir will consult in accordance with the dispute resolution and termination procedures found in Stipulations VII and VIII of this agreement.
- 

#### VI. POST-REVIEW DISCOVERIES

- a. In the event that a previously unidentified archaeological resource is discovered during ground-disturbing activities, all construction work involving subsurface disturbance will be halted in the area of the discovered resource and in the surrounding area where further subsurface remains could reasonably be expected to be found. Fort Belvoir and an archaeologist, who meets qualifications of an archaeologist under the Secretary of Interior's Professional Qualification Standards in 36 CFR 61, shall immediately inspect the work site and determine the area and the nature of the affected archaeological property. Construction work may then continue in the project area outside the site area.
- b. Fort Belvoir shall then notify the SHPO and any American Indian tribes that may attach religious or cultural significance to the affected property within two (2) working days of the discovery. The notification shall describe the agency official's assessment of National Register eligibility of the property and proposed actions to resolve any adverse effects. The

SHPO and tribes shall respond within ten (10) working days of receipt of the notification.

- c. If the resource is determined by Fort Belvoir, in consultation with the SHPO and any tribes to meet National Register Criteria (36 CFR 60.6), Fort Belvoir shall ensure compliance with Section 800.13 of the ACHP regulations. Work in the affected area shall not proceed until either:
  - i. The development and implementation of appropriate data recovery or other recommended mitigation procedures, or
  - ii. The determination is made that the located materials are not eligible for inclusion on the National Register.

## VII. DISPUTE RESOLUTION

- a. Should any party to the Agreement object in writing to any Fort Belvoir action carried out or proposed under this Agreement, Fort Belvoir shall consult with the objecting party to resolve the objection.
- b. If after initiating such consultation, Fort Belvoir determines that the objection cannot be resolved through consultation, Fort Belvoir shall forward all documentation relevant to the objection to the ACHP and other signatory parties, including Fort Belvoir's proposed response to the objection, with the exception that within thirty (30) days after receipt of all pertinent documentation, the ACHP shall exercise one of the following options:
  - i. It may advise Fort Belvoir that the ACHP concurs in Fort Belvoir's proposed final decision;
  - ii. It may provide Fort Belvoir with recommendations, which Fort Belvoir shall consider in reaching a final decision on its response to the objection; or
  - iii. It may notify Fort Belvoir that the objection will be referred for comment pursuant to 36 CFR 800.7(a)(4).
- c. Should the ACHP not exercise one of the above options within thirty (30) days after receipt of all pertinent documentation, Fort Belvoir may assume the ACHP's concurrence in its proposed response to the objection, and shall notify all signatory parties of the action.
- d. Fort Belvoir shall take into account any ACHP recommendation or comment provided in accordance with this stipulation with reference only to the subject of the objection; Fort Belvoir's responsibility to carry out all the actions under this agreement that are not the subject of objection shall remain unchanged.
- e. At any time during implementation of the measures stipulated in this Agreement, should an objection pertaining to this Agreement be raised by a member of the public, Fort Belvoir shall notify the Signatory parties and take the objection into account, consulting with the objector and, if it so chooses, with the Signatory parties to resolve the objection.

## VIII. AMENDMENT AND TERMINATION

- a. Any Signatory party to this Agreement may propose to Fort Belvoir that the Agreement be amended, whereupon Fort Belvoir shall consult with the other Signatories to this Agreement to consider such an amendment. All Signatories to the Agreement must agree to the proposed amendment in accordance with 36 CFR 800.6(c)(7).
- b. Any Signatory party to this Agreement may terminate its participation by providing thirty (30) days written notice to the other Signatory parties, provided that such parties will consult during the period prior to the termination to seek amendments or other actions that would avoid termination. In the event of termination, Fort Belvoir shall submit to the SHPO a technical report on all work done in accordance with Stipulation I of this Agreement up to and including the date of termination and shall comply with 36 CFR 800.
- c. If Fort Belvoir determines that it cannot implement the terms of this Agreement, or if any other Signatory party determines that the Agreement is not being properly implemented, the Signatory parties shall seek amendment of the Agreement. If the Agreement is not amended, any Signatory party may terminate the Agreement.
- d. In the event this Agreement is terminated before the undertaking is complete, Fort Belvoir shall either:
  - i. Consult in accordance with 36 CFR 800.6 to develop a new Memorandum of Agreement for the Undertaking, or
  - ii. Request comments from the ACHP pursuant to 36 CFR 800.7(a)(1).

## IX. DURATION

---

- a. This Agreement is effective upon the date signed by all parties.
- b. This Agreement will be in effect for ten years after the effective date.

Execution of the Memorandum of Agreement and implementation of its terms by Fort Belvoir and the SHPO are evidence that Fort Belvoir has afforded the ACHP an opportunity to comment on the removal and subsequent replacement of the Dogue Creek Bridge Superstructure and its effects on historic properties, and that Fort Belvoir has taken into account the effects of the undertaking on Historic Properties. Implementation of this Agreement satisfies Fort Belvoir's responsibilities under Section 106, 110 and 111 of the National Historic Preservation Act.

SIGNATORIES:

US ARMY GARRISON FORT BELVOIR, VIRGINIA

---

Michael Greenberg  
Colonel, U.S. Army  
Commanding

Date

---

VIRGINIA STATE HISTORIC PRESERVATION OFFICE

---

Julie V. Langan  
Director, Department of Historic Resources

Date

---

ADVISORY COUNCIL ON HISTORIC PRESERVATION

---

Christopher Daniel  
Program Analyst

Date

---

COUNTY OF FAIRFAX, VIRGINIA

---

Laura Arseneau  
Historic Preservation Planner

Date

---



US Army Corps  
of Engineers  
BALTIMORE DISTRICT



ENGINEERS | PLANNERS | SCIENTISTS | CONSTRUCTION MANAGERS  
936 Ridgebrook Road • Sparks, MD 21152 • 410-316-7800 • www.kci.com

# USA GARRISON FORT BELVOIR, VIRGINIA SUPERSTRUCTURE REPLACEMENT OF BRIDGE NO. 1590 ON MT. VERNON ROAD OVER DOGUE CREEK



SOLICITATION NO.: W913DR-17-D-0009  
CONTRACT NO.: W912DR18F0732  
ISSUE DATE: NOVEMBER 8, 2018  
VOLUME #

### INDEX

SYMBOL	DESCRIPTION
0-001	TITLE SHEET
0-002	GENERAL NOTES
0-003	CONSTRUCTION METHODS AND STANDARD DETAILS
0-004	EXISTING CONDITIONS PLAN
0-005	PROPOSED SUPERSTRUCTURE PLAN
0-006	PROPOSED SUBSTRUCTURE PLAN
0-007	PROPOSED EROSION CONTROL PLAN
0-008	PROPOSED EROSION CONTROL DETAILS
0-009	PROPOSED EROSION CONTROL DETAILS
0-010	PROPOSED EROSION CONTROL DETAILS
0-011	PROPOSED EROSION CONTROL DETAILS
0-012	PROPOSED EROSION CONTROL DETAILS
0-013	PROPOSED EROSION CONTROL DETAILS
0-014	PROPOSED EROSION CONTROL DETAILS
0-015	PROPOSED EROSION CONTROL DETAILS
0-016	PROPOSED EROSION CONTROL DETAILS
0-017	PROPOSED EROSION CONTROL DETAILS
0-018	PROPOSED EROSION CONTROL DETAILS
0-019	PROPOSED EROSION CONTROL DETAILS
0-020	PROPOSED EROSION CONTROL DETAILS
0-021	PROPOSED EROSION CONTROL DETAILS
0-022	PROPOSED EROSION CONTROL DETAILS
0-023	PROPOSED EROSION CONTROL DETAILS
0-024	PROPOSED EROSION CONTROL DETAILS
0-025	PROPOSED EROSION CONTROL DETAILS
0-026	PROPOSED EROSION CONTROL DETAILS
0-027	PROPOSED EROSION CONTROL DETAILS
0-028	PROPOSED EROSION CONTROL DETAILS
0-029	PROPOSED EROSION CONTROL DETAILS
0-030	PROPOSED EROSION CONTROL DETAILS
0-031	PROPOSED EROSION CONTROL DETAILS
0-032	PROPOSED EROSION CONTROL DETAILS
0-033	PROPOSED EROSION CONTROL DETAILS
0-034	PROPOSED EROSION CONTROL DETAILS
0-035	PROPOSED EROSION CONTROL DETAILS
0-036	PROPOSED EROSION CONTROL DETAILS
0-037	PROPOSED EROSION CONTROL DETAILS
0-038	PROPOSED EROSION CONTROL DETAILS
0-039	PROPOSED EROSION CONTROL DETAILS
0-040	PROPOSED EROSION CONTROL DETAILS
0-041	PROPOSED EROSION CONTROL DETAILS
0-042	PROPOSED EROSION CONTROL DETAILS
0-043	PROPOSED EROSION CONTROL DETAILS
0-044	PROPOSED EROSION CONTROL DETAILS
0-045	PROPOSED EROSION CONTROL DETAILS
0-046	PROPOSED EROSION CONTROL DETAILS
0-047	PROPOSED EROSION CONTROL DETAILS
0-048	PROPOSED EROSION CONTROL DETAILS
0-049	PROPOSED EROSION CONTROL DETAILS
0-050	PROPOSED EROSION CONTROL DETAILS
0-051	PROPOSED EROSION CONTROL DETAILS
0-052	PROPOSED EROSION CONTROL DETAILS
0-053	PROPOSED EROSION CONTROL DETAILS
0-054	PROPOSED EROSION CONTROL DETAILS
0-055	PROPOSED EROSION CONTROL DETAILS
0-056	PROPOSED EROSION CONTROL DETAILS
0-057	PROPOSED EROSION CONTROL DETAILS
0-058	PROPOSED EROSION CONTROL DETAILS
0-059	PROPOSED EROSION CONTROL DETAILS
0-060	PROPOSED EROSION CONTROL DETAILS
0-061	PROPOSED EROSION CONTROL DETAILS
0-062	PROPOSED EROSION CONTROL DETAILS
0-063	PROPOSED EROSION CONTROL DETAILS
0-064	PROPOSED EROSION CONTROL DETAILS
0-065	PROPOSED EROSION CONTROL DETAILS
0-066	PROPOSED EROSION CONTROL DETAILS
0-067	PROPOSED EROSION CONTROL DETAILS
0-068	PROPOSED EROSION CONTROL DETAILS
0-069	PROPOSED EROSION CONTROL DETAILS
0-070	PROPOSED EROSION CONTROL DETAILS
0-071	PROPOSED EROSION CONTROL DETAILS
0-072	PROPOSED EROSION CONTROL DETAILS
0-073	PROPOSED EROSION CONTROL DETAILS
0-074	PROPOSED EROSION CONTROL DETAILS
0-075	PROPOSED EROSION CONTROL DETAILS
0-076	PROPOSED EROSION CONTROL DETAILS
0-077	PROPOSED EROSION CONTROL DETAILS
0-078	PROPOSED EROSION CONTROL DETAILS
0-079	PROPOSED EROSION CONTROL DETAILS
0-080	PROPOSED EROSION CONTROL DETAILS
0-081	PROPOSED EROSION CONTROL DETAILS
0-082	PROPOSED EROSION CONTROL DETAILS
0-083	PROPOSED EROSION CONTROL DETAILS
0-084	PROPOSED EROSION CONTROL DETAILS
0-085	PROPOSED EROSION CONTROL DETAILS
0-086	PROPOSED EROSION CONTROL DETAILS
0-087	PROPOSED EROSION CONTROL DETAILS
0-088	PROPOSED EROSION CONTROL DETAILS
0-089	PROPOSED EROSION CONTROL DETAILS
0-090	PROPOSED EROSION CONTROL DETAILS
0-091	PROPOSED EROSION CONTROL DETAILS
0-092	PROPOSED EROSION CONTROL DETAILS
0-093	PROPOSED EROSION CONTROL DETAILS
0-094	PROPOSED EROSION CONTROL DETAILS
0-095	PROPOSED EROSION CONTROL DETAILS
0-096	PROPOSED EROSION CONTROL DETAILS
0-097	PROPOSED EROSION CONTROL DETAILS
0-098	PROPOSED EROSION CONTROL DETAILS
0-099	PROPOSED EROSION CONTROL DETAILS
0-100	PROPOSED EROSION CONTROL DETAILS

U.S. ARMY GARRISON, FORT BELVOIR  
DIRECTORATE OF PUBLIC WORKS

PLAN APPROVAL FOR  
EROSION CONTROL

SEMI-DEFINITIVE  
SUPERSTRUCTURE REPLACEMENT OF  
BRIDGE NO 1590, MT. VERNON ROAD  
DOGUE CREEK BRIDGE  
FORT BELVOIR, VIRGINIA

DIRECTOR'S SIGNATURE \_\_\_\_\_ APPROVAL DATE \_\_\_\_\_

I HEREBY CERTIFY THAT THE DESIGN AND SELECTION OF THE DESIGN  
MEETS THE REQUIREMENTS OF THE FEDERAL AID ROAD ACT  
AND THE REQUIREMENTS OF THE FEDERAL AID HIGHWAY ACT  
AS APPLICABLE TO THIS PROJECT DATED NOVEMBER 25, 2018.

DATE \_\_\_\_\_



SHEET ID  
G-001





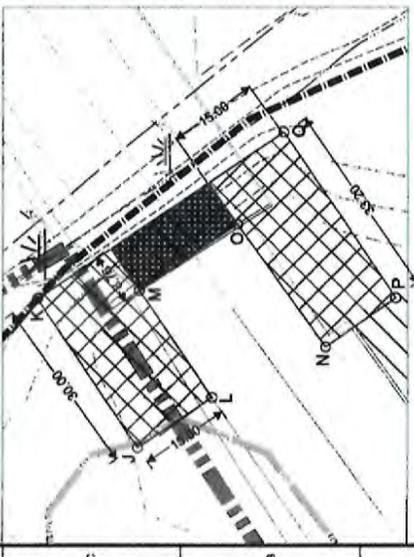
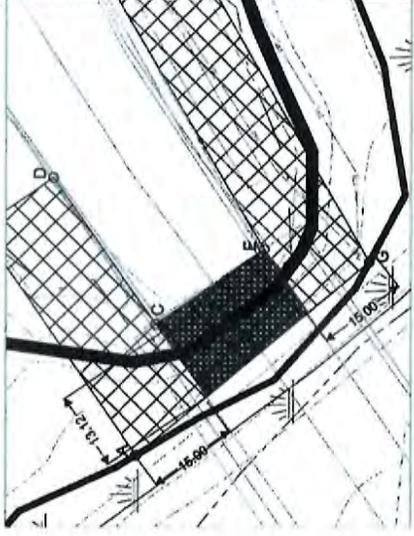
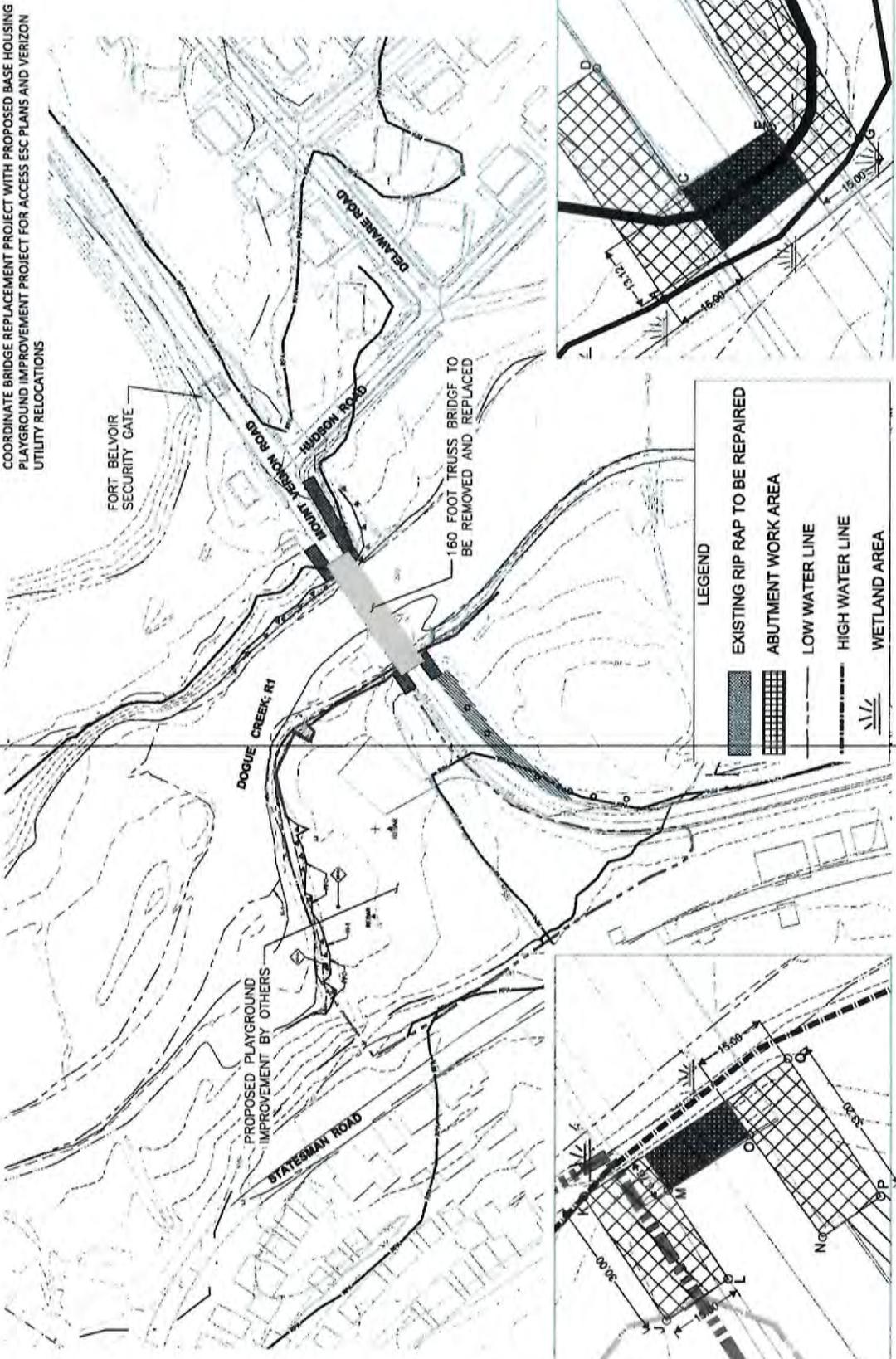
DATE	DESCRIPTION	BY

REVISION	DATE	BY	DESCRIPTION
1	NOVEMBER 8, 2018	J. BROWN	NOVEMBER 8, 2018
2	NOVEMBER 17, 2018	J. BROWN	NOVEMBER 17, 2018
3	NOVEMBER 17, 2018	J. BROWN	NOVEMBER 17, 2018
4	NOVEMBER 17, 2018	J. BROWN	NOVEMBER 17, 2018
5	NOVEMBER 17, 2018	J. BROWN	NOVEMBER 17, 2018
6	NOVEMBER 17, 2018	J. BROWN	NOVEMBER 17, 2018
7	NOVEMBER 17, 2018	J. BROWN	NOVEMBER 17, 2018
8	NOVEMBER 17, 2018	J. BROWN	NOVEMBER 17, 2018
9	NOVEMBER 17, 2018	J. BROWN	NOVEMBER 17, 2018
10	NOVEMBER 17, 2018	J. BROWN	NOVEMBER 17, 2018

U.S. ARMY CORPS OF ENGINEERS  
 DISTRICT ENGINEER  
 2000 BRIDGE ROAD  
 FORT BELVOIR, VIRGINIA 22060-4500  
 PROJECT NO. 1808 ON 17 VENTH ROAD  
 ALPHEUS TRACTS REIMAGEMENT (P)  
 ODM DOUBLE CREEK  
 EXISTING CONDITION PLAN

SHEET ID  
**CS-001**

**NOTE:**  
 COORDINATE BRIDGE REPLACEMENT PROJECT WITH PROPOSED BASE HOUSING  
 PLAYGROUND IMPROVEMENT PROJECT FOR ACCESS ESC PLANS AND VERIZON  
 UTILITY RELOCATIONS



**ABUTMENT A (WEST ABUTMENT)**  
 SCALE 1" = 10'

**ABUTMENT B (EAST ABUTMENT)**  
 SCALE 1" = 10'







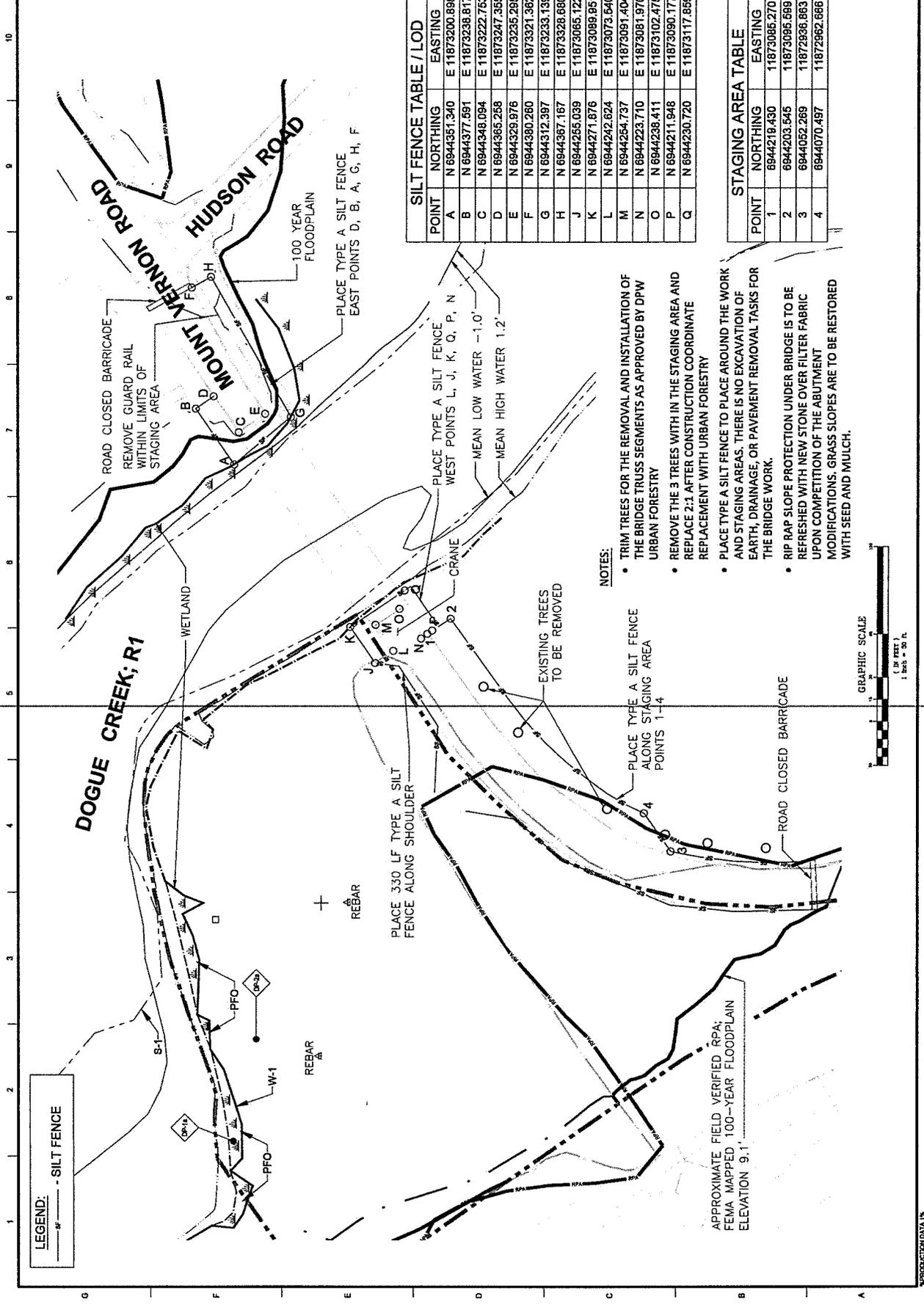
DATE	REVISION	BY	DESCRIPTION

NO.	DATE	BY	DESCRIPTION
1			
2			
3			
4			

US ARMY CORPS OF ENGINEERS  
 DISTRICT OFFICE  
 2100 WEST 17th AVENUE  
 DENVER, CO 80202  
 PROJECT NO. 17-0000  
 CONTRACT NO. 17-0000  
 DRAWING NO. 17-0000  
 SHEET NO. 17-0000

SHEET ID  
**ES-001**

100%



POINT	NORTHING	EASTING
A	N 6944351.340	E 11873200.898
B	N 6944377.591	E 11873238.817
C	N 6944348.094	E 11873222.753
D	N 6944365.258	E 11873247.355
E	N 6944329.976	E 11873235.295
F	N 6944380.280	E 11873321.382
G	N 6944312.397	E 11873233.139
H	N 6944387.167	E 11873228.680
J	N 6944265.039	E 11873065.122
K	N 6944271.676	E 11873089.951
L	N 6944242.624	E 11873073.640
M	N 6944254.737	E 11873081.404
N	N 6944223.710	E 11873081.970
O	N 6944238.411	E 11873102.475
P	N 6944211.948	E 11873090.177
Q	N 6944230.720	E 11873117.859

POINT	NORTHING	EASTING
1	6944218.430	11873085.270
2	6944203.545	11873095.599
3	6944052.269	11872936.863
4	6944070.497	11872962.686

- NOTES:**
- TRIM TREES FOR THE REMOVAL AND INSTALLATION OF THE BRIDGE TRUSS SEGMENTS AS APPROVED BY DPW URBAN FORESTRY
  - REMOVE THE 3 TREES WITH IN THE STAGING AREA AND REPLACE 2:1 AFTER CONSTRUCTION COORDINATE REPLACEMENT WITH URBAN FORESTRY
  - PLACE TYPE A SILT FENCE TO PLACE AROUND THE WORK AND STAGING AREAS. THERE IS NO EXCAVATION OF EARTH, DRAINAGE, OR PAVEMENT REMOVAL TASKS FOR THE BRIDGE WORK.
  - RIP RAP SLOPE PROTECTION UNDER BRIDGE IS TO BE REFRESHED WITH NEW STONE OVER FILTER FABRIC UPON COMPLETION OF THE ABUTMENT MODIFICATIONS. GRASS SLOPES ARE TO BE RESTORED WITH SEED AND MULCH.

APPROXIMATE FIELD VERIFIED RPA;  
 FEMA MAPPED 100-YEAR FLOODPLAIN  
 ELEVATION 9.1'

PRODUCTION DATA 1A  
 PRODUCTION DATA 1B  
 PRODUCTION DATA 1C  
 PRODUCTION DATA 1D  
 PRODUCTION DATA 1E











US Army Corps of Engineers  
 DATE

DATE	DESCRIPTION

ISSUE DATE  
 NOVEMBER 8, 2018  
 PROJECT NO.  
 W955R17A0008  
 DRAWING NO.  
 12-00000

DESIGNED BY  
 L. G. GAYTON  
 CHECKED BY  
 J. L. GAYTON  
 CONTRACT NO.  
 W955R17A0008  
 DRAWING NO.  
 12-00000  
 PROJECT NO.  
 W955R17A0008  
 SHEET NO.  
 12-00000

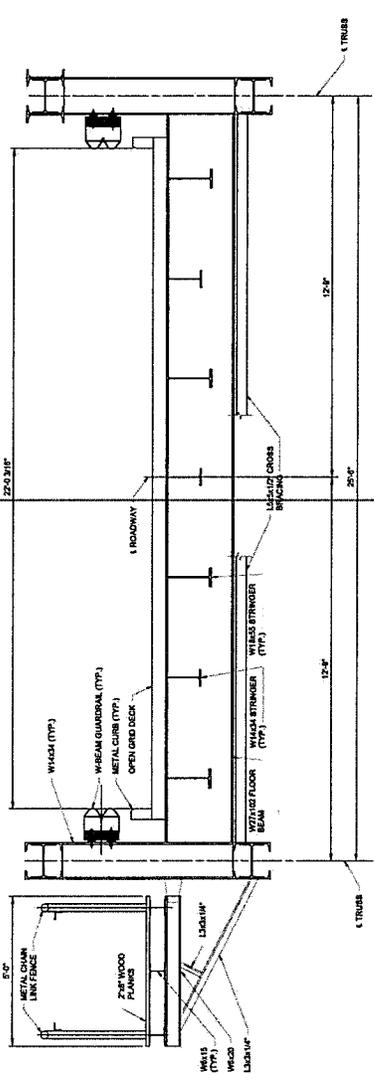
U.S. ARMY CORPS OF ENGINEERS  
 BALTIMORE DISTRICT  
 BALTIMORE, MD 21285  
 KCI  
 ENGINEERS, PLANNERS, ARCHITECTS  
 AND CONSTRUCTION MANAGERS  
 800 BRIDGE ROAD  
 BALTIMORE, MD 21285

TYPICAL SECTIONS  
 OPEN DOUBLE CHORD  
 U.S. ARMY CORPS OF ENGINEERS  
 BALTIMORE DISTRICT  
 BALTIMORE, MD 21285  
 BRIDGE NO. 1390 ON RT. VERMONT ROAD

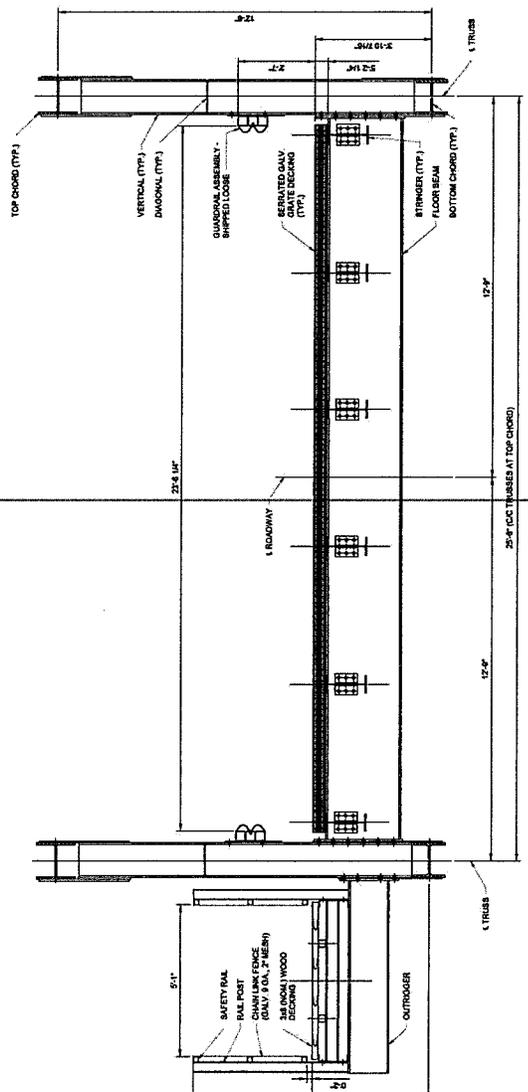
SHEET ID  
 S-002

100%

10 9 8 7 6 5 4 3 2 1



TYPICAL SECTION - EXISTING BRIDGE  
 SCALE: 1/8" = 1'-0"



TYPICAL SECTION - PROPOSED BRIDGE  
 SCALE: 1/8" = 1'-0"

PRODUCTION DATA 1%  
 PRODUCTION DATA 1%  
 PRODUCTION DATA 1%





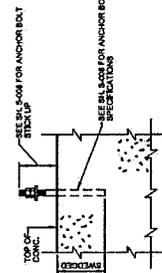
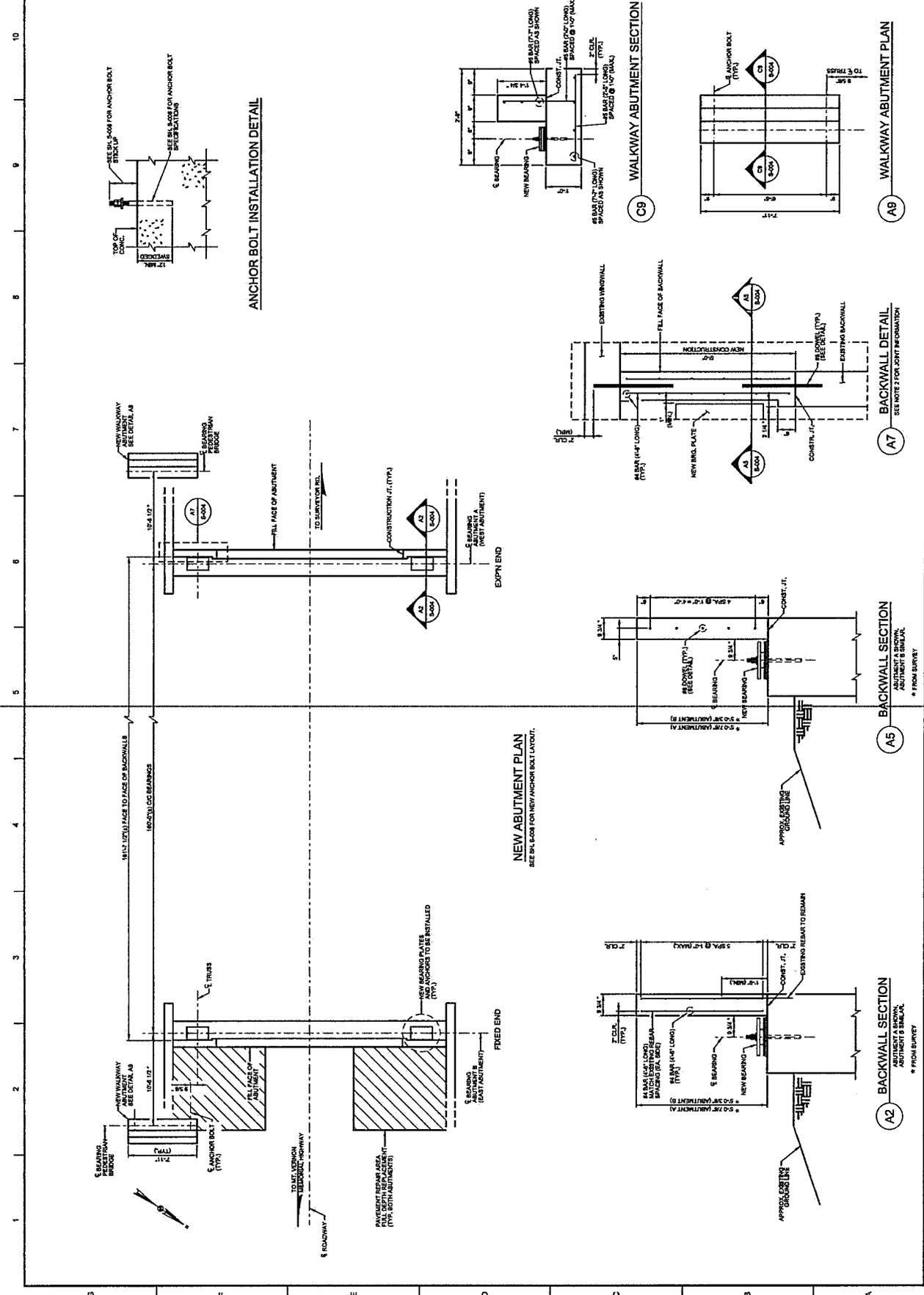
US Army Corps of Engineers

MARK	DESCRIPTION	DATE

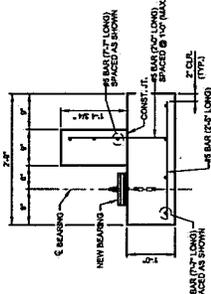
REVISION	DATE	BY	DESCRIPTION
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

U.S. ARMY CORPS OF ENGINEERS  
 DISTRICT ENGINEER, BALTIMORE DISTRICT  
 BALTIMORE, MD 21201  
 2nd FLOOR, 1400 GAITHERS ROAD  
 BALTIMORE, MD 21201  
 CIVIL ENGINEERING DIVISION  
 BRIDGE NO. 1300 OVER PATTERSON ROAD  
 SUPERSTRUCTURE REPAIR/REPLACE/REPLACE OR  
 RECONSTRUCT  
 OPEN HOUSE ORDER

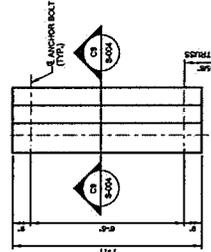
SHEET ID  
**S-004**



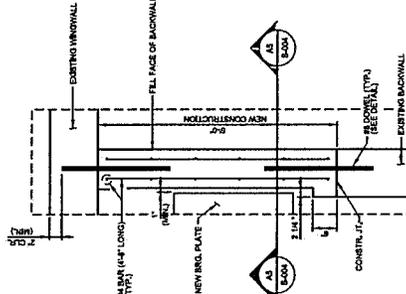
**ANCHOR BOLT INSTALLATION DETAIL**



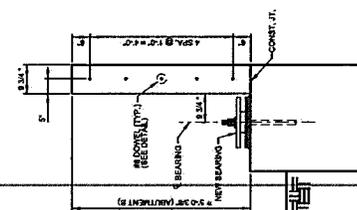
**WALKWAY ABUTMENT SECTION**



**WALKWAY ABUTMENT PLAN**



**BACKWALL DETAIL**  
 SEE NOTE FOR ABUTMENT BEHAVIOR



**BACKWALL SECTION**  
 ABUTMENT & SHOWING  
 \* FROM SURVEY

**NEW ABUTMENT PLAN**  
 SEE IN LAYOUT FOR NEW ANCHOR BOLT LAYOUT.

**BACKWALL SECTION**  
 ABUTMENT & SHOWING  
 \* FROM SURVEY

\* PRODUCTION DATA 1%  
 \* PRODUCTION DATA 2%  
 \* PRODUCTION DATA 3%  
 \* PRODUCTION DATA 4%

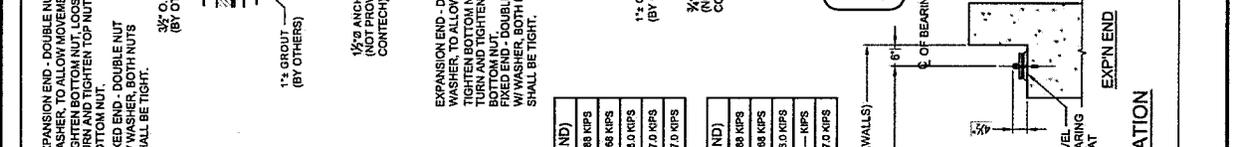
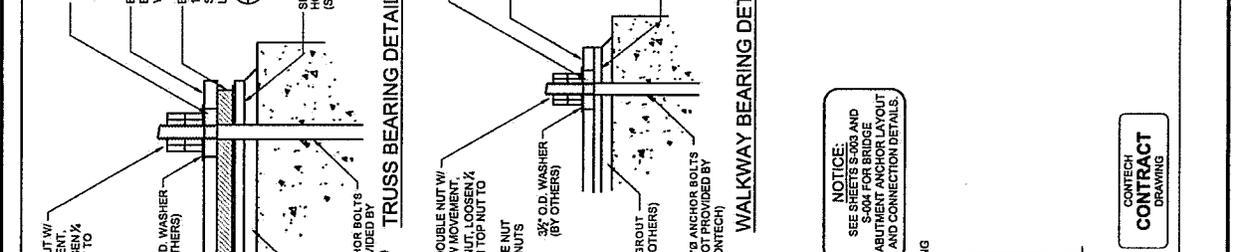






MARK	DESCRIPTION	DATE	BY

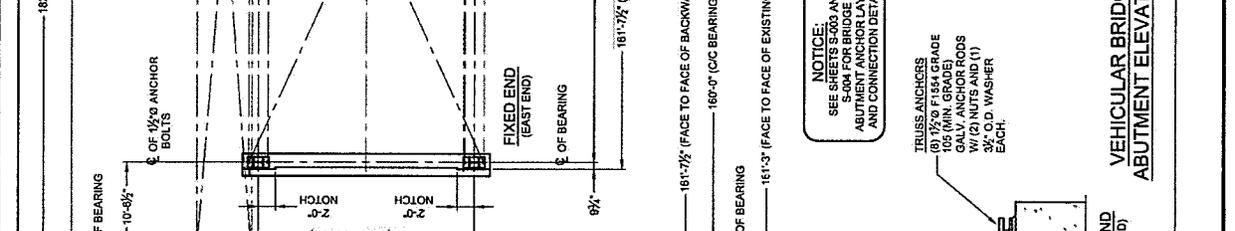
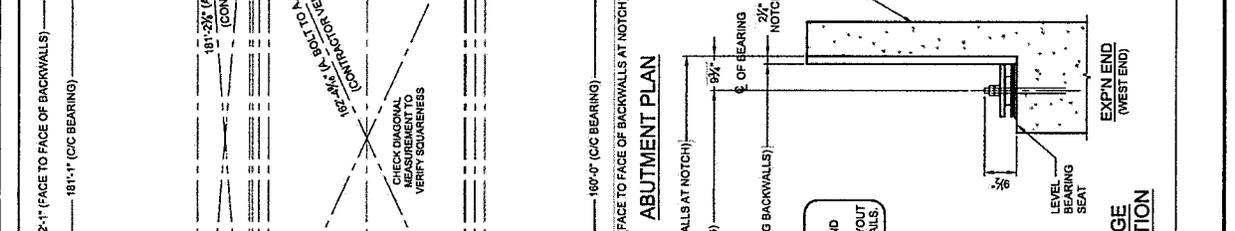
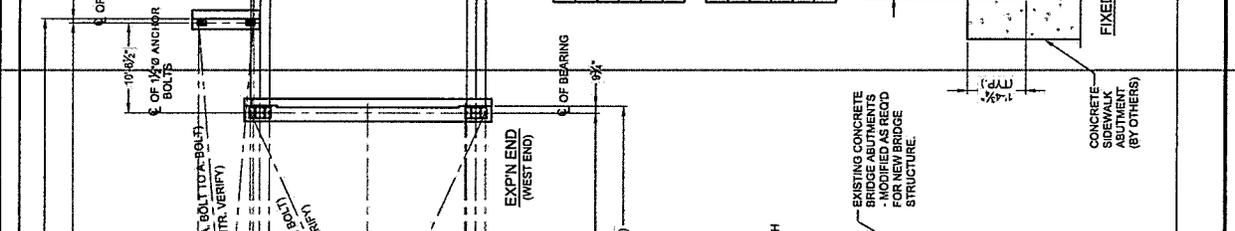
U.S. Army Corps of Engineers  
 160' x 24'  
 MT. VERNON BRIDGE NO. 1590  
 OVER DOUGUE CREEK  
 FORT BELVOIR, VA  
 CONTRACT NO. 686662  
 PROJECT NO. 686662  
 DATE: 7/11/2019  
 DESIGNED BY: TEB  
 CHECKED BY: BUB  
 APPROVED BY: [Signature]



ABUTMENT REACTIONS (FIXED END)	
VERTICAL DEAD LOAD	188 KIPS
VERTICAL LIVE LOAD W/O IMPACT	308 KIPS
HORIZONTAL LOAD (WIND)	39.0 KIPS
LONG SEISMIC LOAD (FIXED END ONLY)	47.0 KIPS
LATERAL SEISMIC LOAD	47.0 KIPS

ABUTMENT REACTIONS (EXPAN END)	
VERTICAL DEAD LOAD	188 KIPS
VERTICAL LIVE LOAD W/O IMPACT	238 KIPS
HORIZONTAL LOAD (WIND)	39.0 KIPS
LONG SEISMIC LOAD	— KIPS
LATERAL SEISMIC LOAD	47.0 KIPS





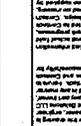


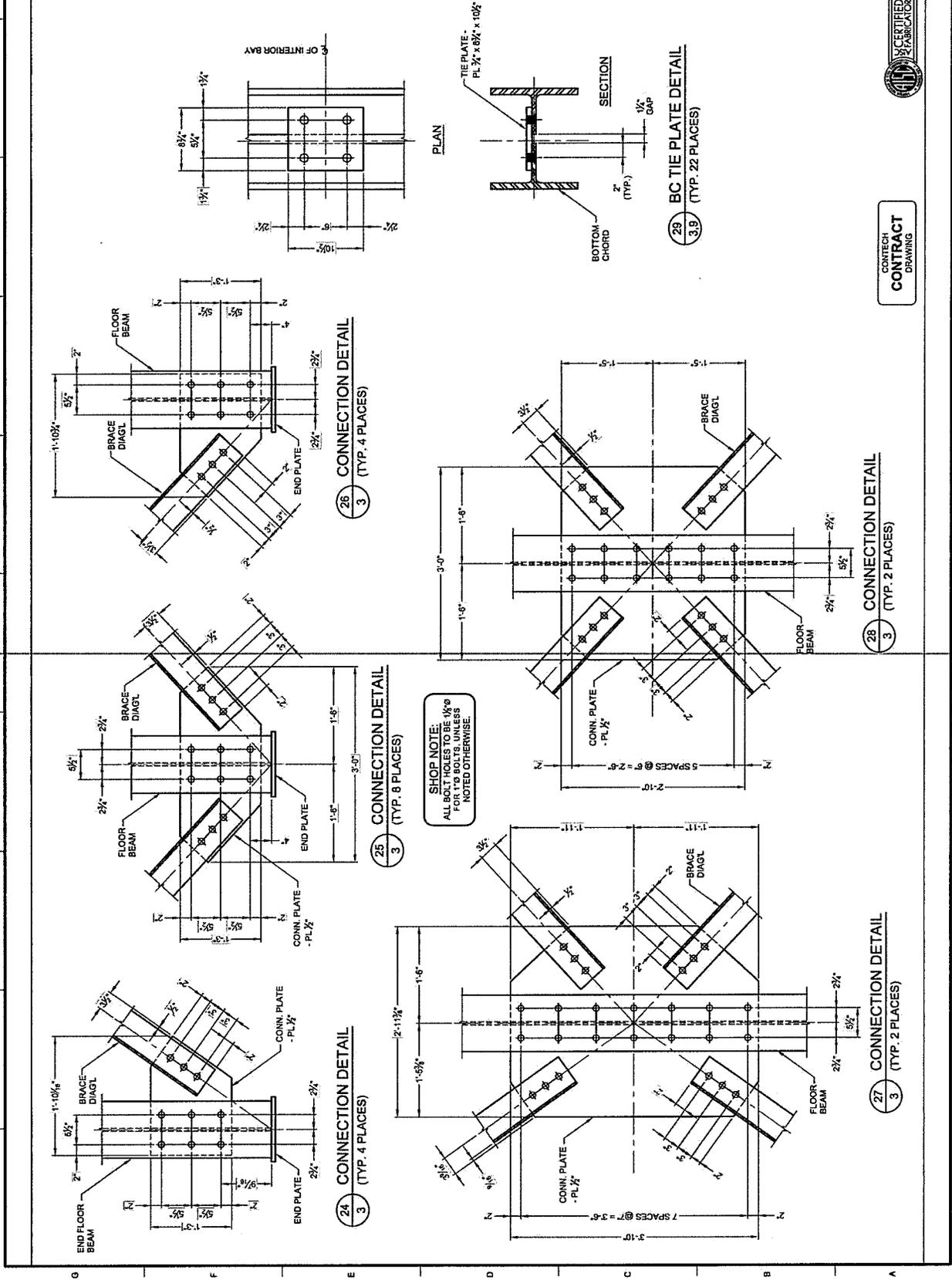






	<b>U.S. ARMY CORPS OF ENGINEERS</b> ENGINEERING PLANNING SCIENTISTS AND CONSTRUCTION MANAGERS CIVIL ENGINEERS 2100 BRIDGE BLVD FORT BELVOIR, VA 22060 (703) 616-3939 FAX (703) 616-3938 WWW.USACE.MIL	<b>CONNECTION DETAILS</b> OVERHUNG CRACK BRIDGE NO. 1590 ON MT. VERNON ROAD SUPERSTRUCTURE REPLACEMENT OF BALTIMORE DISTRICT	SHEET ID <b>S-014</b>
--	---	--	--------------------------

	<b>CONTECH</b> ENGINEERED SOLUTIONS LLC WWW.CONTECH.COM 1815 S. STATE ST. SUITE 200 DENVER, CO 80202 (303) 733-7100 FAX (303) 733-7101	<b>STEADFAST BRIDGES</b> ENGINEERING, PLANNING, SCIENTISTS AND CONSTRUCTION MANAGERS CIVIL ENGINEERS 2100 BRIDGE BLVD FORT BELVOIR, VA 22060 (703) 616-3939 FAX (703) 616-3938 WWW.USACE.MIL	PROJECT NO.: 055882 SHEET: 10 of 10 DATE: 7/11/2019 DESIGNED BY: TEB CHECKED BY: BAH APPROVED BY: TEB
---	--	--	--



100%

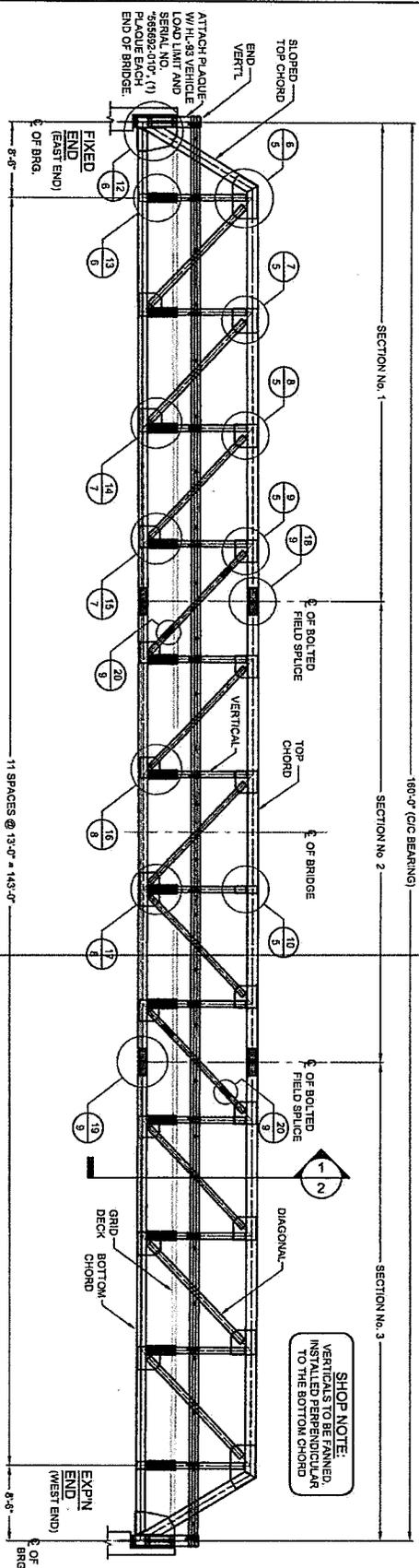
CONTECH  
 CONTRACT  
 DRAWING

100% PRODUCTION DATA 1/4"  
 100% PRODUCTION DATA 1/2"  
 100% PRODUCTION DATA 3/4"  
 100% PRODUCTION DATA 1"

### GENERAL NOTES

- ALL DESIGN STRESSES ARE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 8th EDITION USING LRFD BRIDGE DESIGN SPECIFICATIONS.
- BRIDGE MEMBERS ARE FABRICATED FROM HIGH STRENGTH STEEL, ASTM A572-50 OR 50W STRUCTURAL STEEL, SHAPES AND PLATES, ASTM A500 OR A547 HSS ALL STRUCTURAL MEMBERS TO BE F-70-50/50/50.
- FLUX CORDED ARC WELDING OR GMAW PROCESS WILL BE USED WELDING TO BE IN ACCORDANCE WITH AWS D1.5.
- ALL CONNECTION BOLTS SHALL BE 1" DIA. A325-SC TYPE 1, GALV. WASHERS UNLESS NOTED. FIELD CONNECTIONS SHALL BE MADE USING 1 1/2" DIA. A325-SC TYPE 1, GALV. WASHERS UNLESS NOTED. FIELD CONNECTIONS SHALL BE MADE USING 1 1/2" DIA. A325-SC TYPE 1, GALV. WASHERS UNLESS NOTED. SPECIFICALLY FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
- BRIDGE ANCHOR BOLTS TO BE GALVANIZED PER ASTM F1554, GRADE 40S (A315) UNLESS NOTED. THE MINIMUM DISTANCE TO THE EDGE OF CONCRETE SHALL BE 8" UNLESS NOTED. ANCHOR BOLTS ARE NOT GROUDED OR DRILLED HOLES. ANCHOR BOLTS ARE NOT GROUDED BY CONTECH.
- SETTING PLATES SHALL BE PLACED ON SHIMS. THE PREFORMED BEARING PADS AND THE BRIDGE SHALL THEN BE PLACED RESPECTIVELY. AFTER THE BRIDGE HAS BEEN PLACED TO ALLOW FOR FINAL VERTICAL ADJUSTMENT.
- LENGTH OF ANCHOR BOLTS AND FOUNDATION DETAILS ARE FOR GENERAL ARRANGEMENT PURPOSES ONLY. ACTUAL FOUNDATION AND SUBSTRUCTURE DESIGN SHALL BE THE RESPONSIBILITY OF THE DESIGNER. FOUNDATION DESIGN SHALL BE THE RESPONSIBILITY OF THE DESIGNER. ROADWAY AND WATERWAY ARE THE RESPONSIBILITY OF OTHERS.
- OPEN GRID BRIDGE DESIGN SHALL BE TYPE 5, 3/4" x 18" x 8" x 2" x 1/4" TOP CHORD GALVANIZED AS MANUFACTURED BY GALEY BRIDGES INC. THE DECK SHALL BE MANUFACTURED FROM THE FOLLOWING ELEMENTS:
  - A. MAIN BEAM (MB) @ 37' C.C. .... 3/4" x 1/2" (MIN) FLAT BAR
  - B. CROSS BAR (CBAR) @ 37' C.C. .... 3/4" x 1/2" (MIN) FLAT BAR
  - C. SUPPLEMENTAL BAR ..... 1" x 2" (MIN) FLAT BAR @ 12" SPACED EQUALLY BETWEEN EACH MB
- WALKWAY DECKING SHALL BE NOMINAL 3/4" THICK SELECT STRUCTURAL SOUTHERN YELLOW PINE (P=2,300 PSI MIN) TIMBER DECK MATERIAL SHALL BE TREATED WITH ALKALINE COPPER QUATERNARY (ACQ) TO A 0.4 FCF RETENTION ON TOP PER SCA.
- CLEANING AND PREPARATION OF STEEL STRUCTURES SHALL BE IN ACCORDANCE WITH STEEL STRUCTURES PAINTING SPECIFICATIONS NO. 10 NEAR WHITE BLAST CLEANING SSPC-SP10-LATEST EDITION.
- PAINTING: SHERWIN WILLIAMS 3 COAT PAINT SYSTEM (NEPCOAT QUALIFIED SYSTEM)
  - A. ONE PRIMER COAT ZINC CLOUD III HS ORGANIC ZINC RICH FINISH 3.5 MILS DFT.
  - B. ONE INTERMEDIATE COAT MACROPROXY 648 FAST CURE EPOXY 5-10 MILS DFT.
  - C. ONE TOP COAT AGRON 218 HS ACRYLIC POLYURETHANE SEMI-GLOSS 3.5 MILS DFT. COLOR TO BE DETERMINED BY OWNER.
- BRIDGE SHALL BE PROVIDED WITH TOUCH-UP PAINT FOR ALL PAINTING REQUIRED AFTER THE STRUCTURE REACHES FINAL ERECTION. TOUCH-UP PAINTING INCLUDES ANY AND ALL PAINTING REQUIRED AFTER THE STRUCTURE REACHES FINAL ERECTION. TOUCH-UP PAINTING SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING AREAS:
  - A. ANY AREAS DAMAGED DUE TO SHIPPING, HANDLING AND ERECTION OF THE BRIDGE.
  - B. BOLT HEADS AND EXPOSED AREAS OF BOLTS AND NUTS AS APPLICABLE.
  - C. UNGALVANIZED ANCHOR BOLTS IF NOT MADE OF CORROSION RESISTANT STEEL.
  - D. IF APPLICABLE, SMALL AREAS (0" x 2" EACH SIDE) AROUND BOLTED FIELD SPICES, DESIGNED AS SLIP CRITICAL TO WHERE ONE OR ALL PAINT COATS MAY BE REQUIRED TO MAINTAIN SLIP CRITICAL SURFACES OF THESE CONNECTIONS.

### BRIDGE ELEVATION (LOOKING SOUTH)



### BUY AMERICA

#### SCHEDULE OF MEMBERS

TOP CHORD	W 14 x 120
SLOPED TOP CHORD	W 14 x 120
SLIP TOP CHORD	(2) W 18 x 48
END VERTICAL	W 14 x 53
VERTICAL	W 14 x 53
DIAGONAL	W 14 x 34
CONN. TEE	PC W 30 x 108
END FLOOR BEAM	W 30 x 108
FLOOR BEAM	W 30 x 108
STRINGER	W 16 x 40
CLIP ANGLE	L 6 x 4 x 3/8
BRIDGE DIAGONAL	L 6 x 6 x 3/8
RAIL BRACKER	HSS 4 x 4 x 1/4
OUTRIGGER	W 18 x 50
WALKWAY STRINGER	C 12 x 20.7
WALKWAY FLOOR BEAM	HSS 5 x 3 x 1/4
WALKWAY SPICE FB	C 5 x 8
WALKER	HSS 3 x 3 x 1/4
DECK TRIM	ROLLFORM
RAIL POST	W 4 x 13
SPICE RAIL POST	C 4 x 7.25
SAFETY RAIL	HSS 2 x 2 x 1/8

### BRIDGE SHIPPING WEIGHTS

WEIGHTS SHOWN ARE APPROXIMATE AND ARE SUBJECT TO CHANGES

- TRUSS SECTION No. 1 ..... 27,513 LBS
- TRUSS SECTION No. 2 ..... 22,721 LBS
- TRUSS SECTION No. 3 ..... 27,513 LBS

### DESIGN CRITERIA

- OPEN GRID BRIDGE DECK (18.6 PSF)
- HSS & I-SECTION WASH TO LIVE CORROSION WITH IMPACT.
- 150 PSF WIND LOADING
- 75 PSF PEDESTRIAN SIDE WALK LOADING PER AASHTO

SHOP NOTE:  
VERTICALS TO BE FINISHED USING TO THE BOTTOM CHORD

CONTECH CONTRACT DRAWING



**CONTECH ENGINEERED SOLUTIONS LLC**  
www.contechES.com  
1201 West Street, Suite 200, Alexandria, VA 22304  
703.544.1100

DATE: 7/17/2019  
PROJECT NO: 1590-01  
DRAWN BY: EJB  
CHECKED BY: EJB  
SCALE: AS SHOWN  
SHEET: 1 OF 10

**STEADFAST BRIDGES**

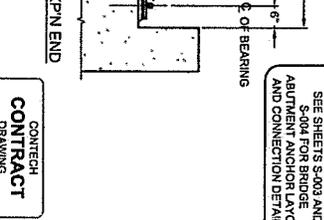
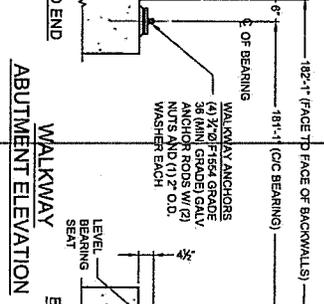
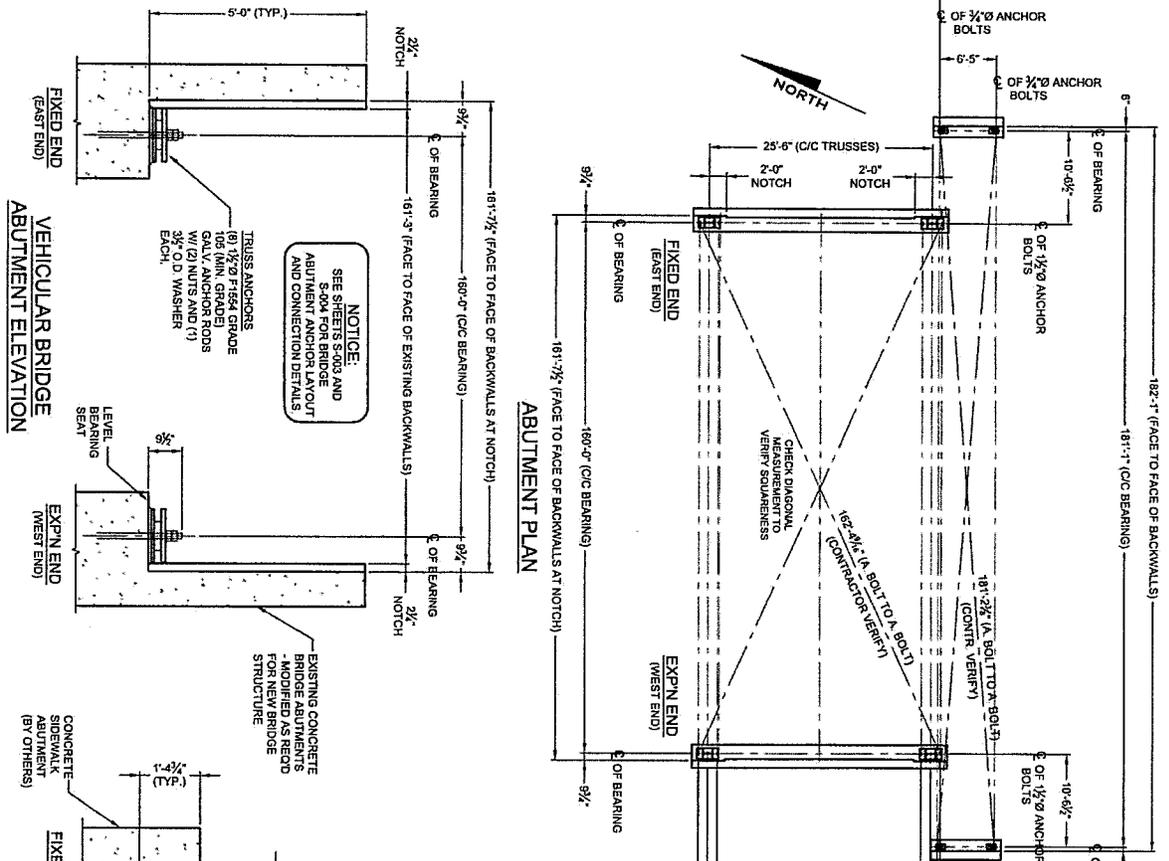
160' x 24'  
MT. VERNON BRIDGE No. 1590  
OVER DOGUE CREEK  
VEHICULAR BRIDGE  
FORT BELVOIR, VA

MARK	DATE	REVISION DESCRIPTION	BY

The design and information shown on this drawing is intended as a service to the project owner and is not to be used for any other purpose. The design is the property of Contech Engineered Solutions LLC. The design is not to be used for any other project without the written consent of Contech Engineered Solutions LLC. The design is not to be used for any other project without the written consent of Contech Engineered Solutions LLC. The design is not to be used for any other project without the written consent of Contech Engineered Solutions LLC.



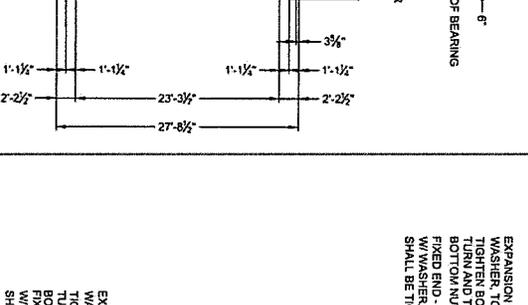
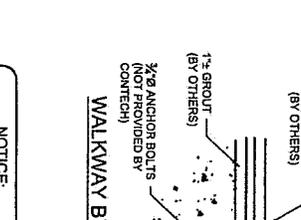




ABUTMENT REACTIONS (FIXED END)	
VERTICAL DEAD LOAD	188 KIPS
VERTICAL LIVE LOAD W/O IMPACT	288 KIPS
HORIZONTAL LOAD (WIND)	36.0 KIPS
LONG SEISMIC LOAD (FIXED END ONLY)	94.0 KIPS
LATERAL SEISMIC LOAD	47.0 KIPS

ABUTMENT REACTIONS (EXPN END)	
VERTICAL DEAD LOAD	188 KIPS
VERTICAL LIVE LOAD W/O IMPACT	288 KIPS
HORIZONTAL LOAD (WIND)	36.0 KIPS
LONG SEISMIC LOAD	---
LATERAL SEISMIC LOAD	47.0 KIPS



**COMMONWEALTH OF VIRGINIA**  
**PROFESSIONAL ENGINEER**  
 ADAM K. HOWELLS  
 No. 000200000  
 12 July 19

**CONTECH CONTRACT DRAWING**

**CONTECH ENGINEERED SOLUTIONS LLC**  
 www.conteches.com  
 421 South Meadows 24 West, Alexandria, VA 22304  
 703-544-2000 FAX 703-544-2001

**STEADFAST BRIDGES**

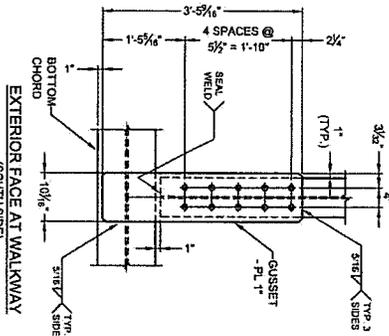
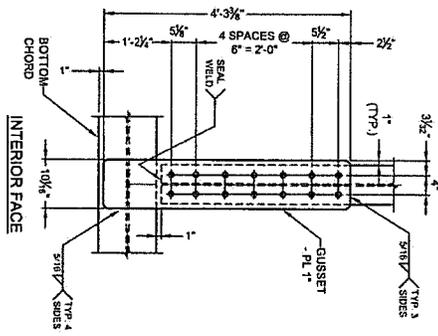
DATE: 7/11/2019  
 DESIGNED BY: BAH  
 DRAWN BY: TEH  
 CHECKED BY: SAH  
 PROJECT NO: 060592  
 SHEET NO: 010  
 OF: 10

160' x 24'  
 MT. VERNON BRIDGE No. 1590  
 OVER DOGUE CREEK  
 VEHICULAR BRIDGE  
 FORT BELVOIR, VA

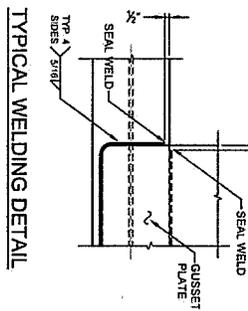
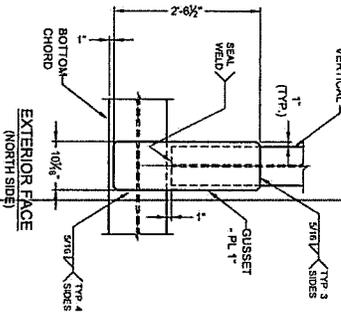
MARK	DATE	REVISION DESCRIPTION	BY

The design and information shown on this drawing is provided as a service to the project design engineer and contractor by Contech Engineered Solutions LLC. Contech Engineered Solutions LLC is not responsible for any errors or omissions in this drawing, and any use of these drawings without the written consent of Contech Engineered Solutions LLC is prohibited. Contech Engineered Solutions LLC does not accept liability for designs based on incorrect or incomplete information supplied by others.





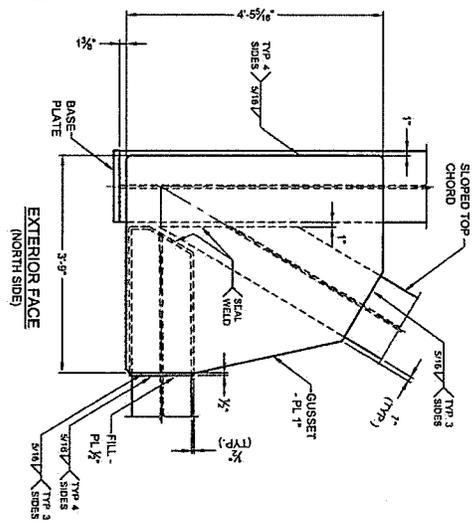
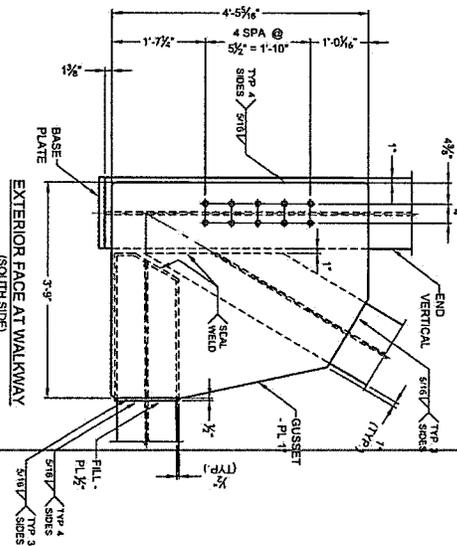
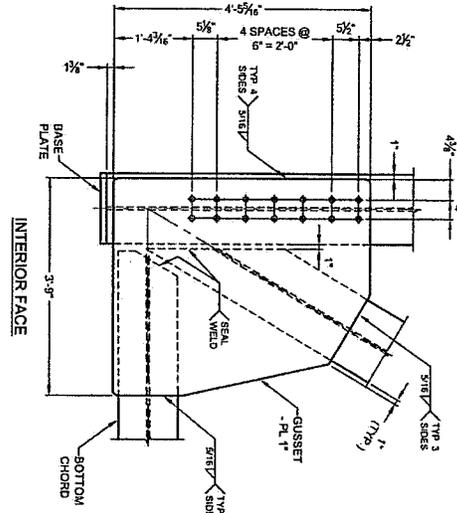
13 CONNECTION DETAIL



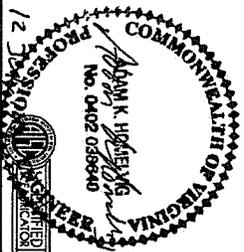
SHOP NOTE:  
SEAL WELD (ST) FROM  
AND RESISTION FROM  
ALL CHORD, VERTICAL &  
DIAGONAL LAP JOINTS)

SHOP NOTE:  
ALL BOLT HOLES TO BE 1 1/8  
FOR THE BOLTS UNLESS  
NOTED OTHERWISE.

12 CONNECTION DETAIL



CONTECH  
CONTRACT  
DRAWING



**CONTECH**  
ENGINEERED SOLUTIONS LLC  
www.ContechES.com  
231 E. Main Hwy 20 York, Pennsylvania, PA 17403  
717-766-2207 717-766-5100 717-766-3108

DATE: 7/12/2018  
DESIGNED: BAH  
DRAWN: TEB  
CHECKED: JHB  
SCALE: AS SHOWN  
PROJECT: 6 OF 10

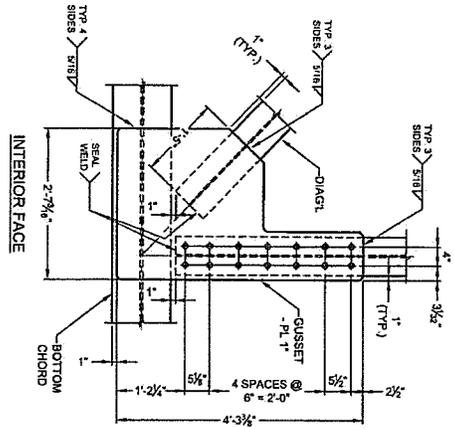
STEADFAST BRIDGES

160' x 24'  
MT. VERNON BRIDGE No. 1590  
OVER DOGUE CREEK  
VEHICULAR BRIDGE  
FORT BELVOIR, VA

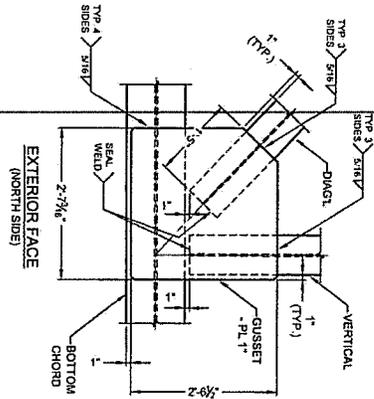
MARK	DATE	REVISION DESCRIPTION	BY

The design and information shown on this drawing is prepared as a service by the project engineer and computer by Contech Engineering Solutions LLC ("Contech"). Neither the drawing nor any part thereof may be used, reproduced or modified in any manner without the prior written consent of Contech. Taken to the extent of the user's own risk and Contech expressly disclaims any liability or responsibility for the same.

No warranty is made by Contech for the accuracy of the information shown on this drawing. Contech is not responsible for any errors or omissions in the information shown on this drawing. Contech is not responsible for any errors or omissions in the information shown on this drawing. Contech is not responsible for any errors or omissions in the information shown on this drawing.

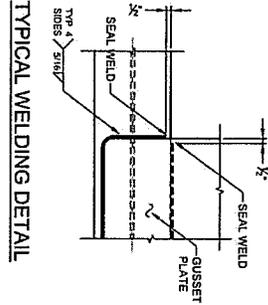


14 CONNECTION DETAIL  
EXTERIOR FACE AT WALKWAY  
(SOUTH SIDE)



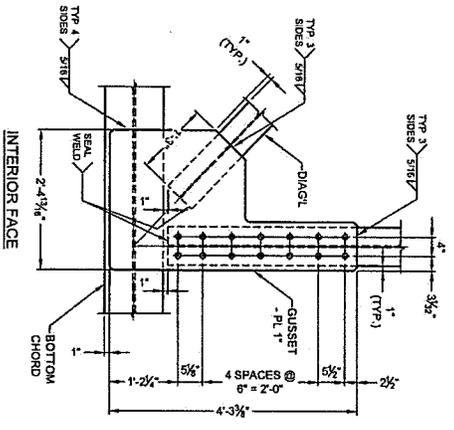
EXTERIOR FACE  
(NORTH SIDE)

SHOP NOTE:  
ALL BOLT HOLES TO BE 1/8\"/>

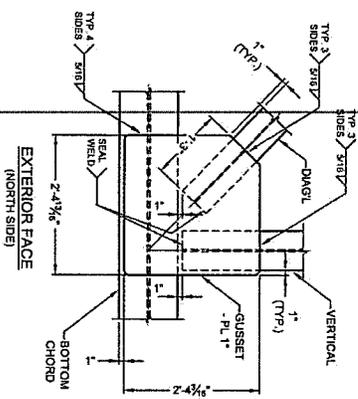


TYPICAL WELDING DETAIL

SHOP NOTE:  
SEAL WELD FROM  
INTERSECTION OF PLATE  
AND WIDE FLANGE (TYPICAL  
ALL CHORD, VERTICAL &  
DIAGONAL LAP JOINTS)

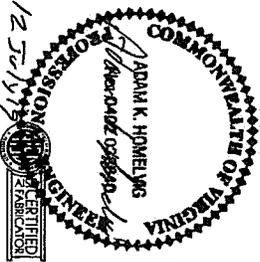


15 CONNECTION DETAIL  
INTERIOR FACE AT WALKWAY  
(SOUTH SIDE)



EXTERIOR FACE  
(NORTH SIDE)

CONTECH  
CONTRACT  
DRAWINGS



**CONTECH**  
ENGINEERED SOLUTIONS LLC  
www.contechES.com  
4321 East Highway 22 North, Alexandria, VA 22304  
800-329-2047 520-344-9178 202-699-3744 FAX

**STEADFAST BRIDGES**

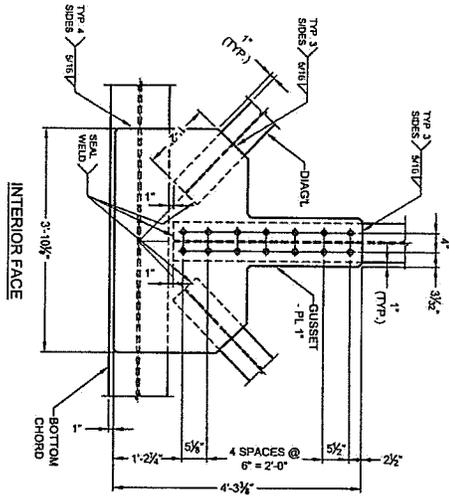
PROJECT: MT. VERNON BRIDGE No. 1590  
OVER DOGUE CREEK  
VEHICULAR BRIDGE  
FORT BELVOIR, VA

DATE: 7/11/2019  
DESIGNED BY: BAH  
CHECKED BY: GAA  
PROJECT NO.: 010  
SHEET: 7 OF 10

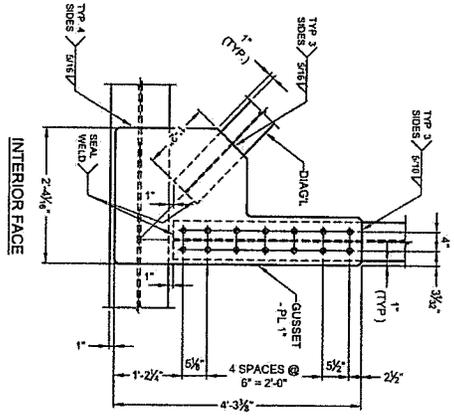
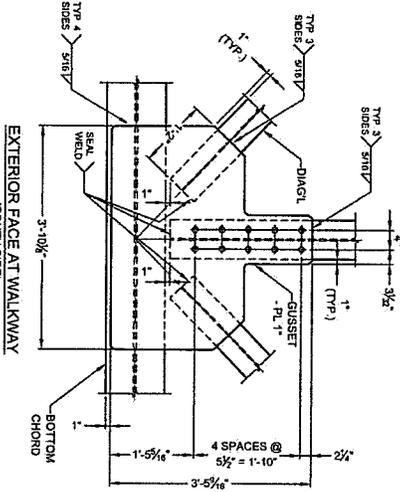
MARK	DATE	REVISION DESCRIPTION	BY

The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor by Contech Engineered Solutions LLC (Contech). Neither the drawing, nor any part thereof, may be used, reproduced or modified in any manner without the prior written consent of Contech. Failure to comply with the terms of this agreement shall constitute a breach of contract and the user shall hold Contech and any of its officers and employees harmless for any and all claims, damages, losses and expenses, including reasonable attorney's fees, that may be incurred by the user.

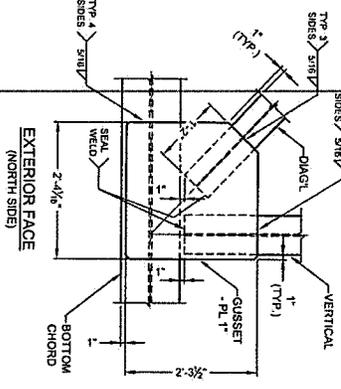
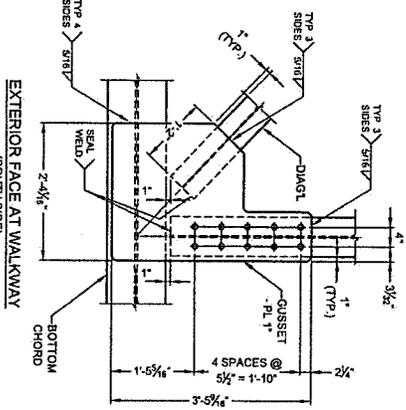
It is understood that the design information shown on this drawing is based on the actual field conditions and measurements of the project. These measurements may be required by Contech immediately for modification of the design. Contech accepts no liability for designs based on missing, incomplete or inaccurate information supplied by others.



17 CONNECTION DETAIL

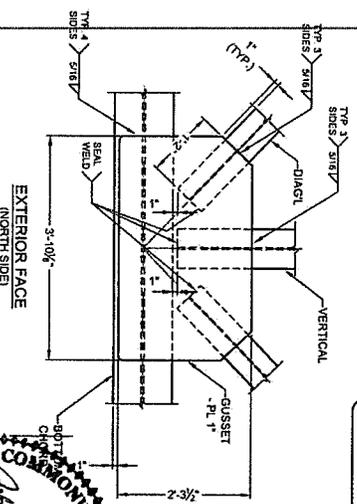
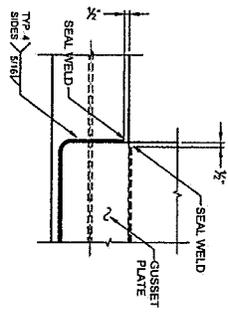


16 CONNECTION DETAIL

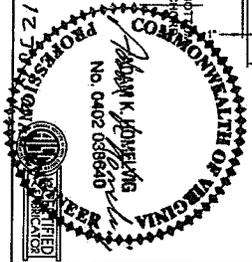


SHOP NOTE:  
ALL DIMENSIONS TO BE 1/8" FOR 120 BOLTS, UNLESS NOTED OTHERWISE

SHOP NOTE:  
SEAL WELD TO BE INTERIOR AND WIDE FLANGE (TYPICAL & DIAGONAL LAP JOINTS)



CONTECH CONTRACT DRAWING



**CONTECH ENGINEERED SOLUTIONS LLC**  
www.conteches.com  
6201 Stone Highway 22 South, Jacksonville, FL 32204  
904-253-2017 904-253-9126 320-460-3746 FAX

**STEADFAST BRIDGES**

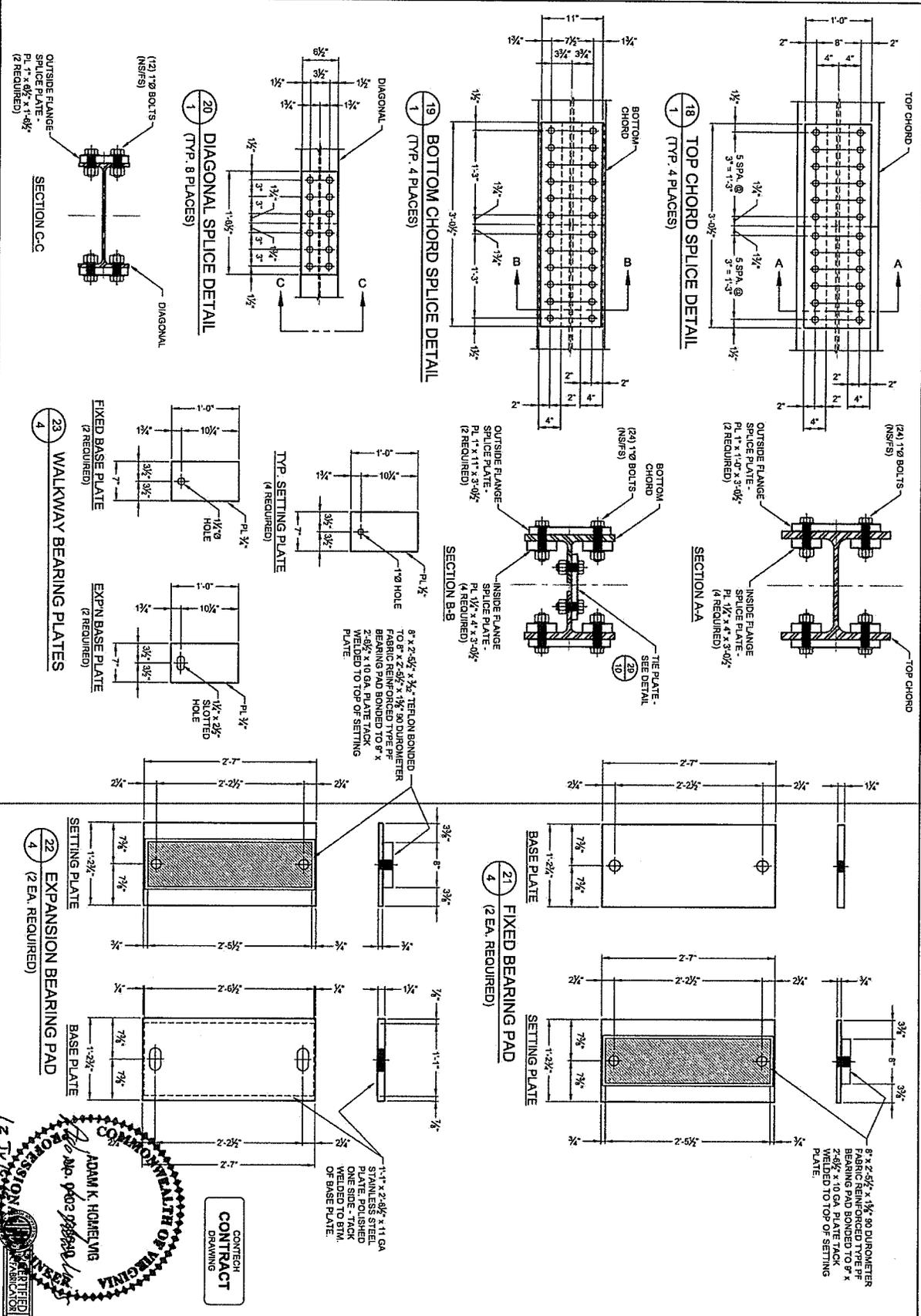
PROJECT NO. 565982  
SHEET 8 OF 10

160' x 24'  
MT. VERNON BRIDGE No. 1590  
OVER DOGUE CREEK  
VEHICULAR BRIDGE  
FORT BELVOIR, VA

MARK	DATE	REVISION DESCRIPTION	BY

The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor by Contech Engineered Solutions LLC (Contech). Neither this drawing nor any part thereof may be used, reproduced or modified in any manner without the prior written consent of Contech. Failure to comply with these terms shall constitute a breach of contract and the user's own risk and Contech accepts no liability or responsibility for such use.

No discrepancy between the provided information upon which this drawing is based and actual field conditions are intended to be a design program. There is no warranty, expressed or implied, by Contech regarding the use of this drawing. Contech will not be held liable for any design or construction errors or omissions or liability or responsibility for such use.



**CONTECH CONTRACT DRAWING**

DATE: 7/11/2019  
 DESIGNED BY: BAH  
 CHECKED BY: GAH  
 PROJECT NO: 010  
 SHEET: 9 OF 10

160' x 24'  
**MT. VERNON BRIDGE No. 1590**  
**OVER DOGUE CREEK**  
**VEHICULAR BRIDGE**  
**FORT BELVOIR, VA**

**CONTECH ENGINEERED SOLUTIONS LLC**  
 www.ContechES.com  
 2821 Base Highway 10 North, Newark, DE 19702  
 302-225-1171 302-225-1172 302-225-1173

**STEADFAST BRIDGES**

This design and information shown on this drawing is provided as a service to the project owner and is the property of Contech Engineered Solutions LLC ("Contech"). Neither the drawings nor any part thereof may be used, reproduced or stored in any manner without the prior written consent of Contech. Failure to comply is deemed the user's own risk and Contech's liability shall be limited to any liability or responsibility for design errors.

In the event of a discrepancy between the user's and Contech's information, the user's information shall prevail. Contech does not warrant or make any representation or guarantee, express or implied, in connection with the use of any product or service provided by Contech. Contech shall not be held liable for design errors resulting from the use of the user's information or from any other information supplied by others.



## PLAN SUBMITTER'S CHECKLIST

### FOR EROSION AND SEDIMENT CONTROL PLANS

Please fill in all blanks and reference the plan sheets/pages where the information may be found, where appropriate, or write N/A by items that are not applicable.

#### GENERAL

Plan Submission Date April 19, 2019

Project Name Superstructure replacement of Bridge No. 1590 on Mount Vernon Road over Dogue Creek

VSMP Permit Number \_\_\_\_\_

Site Plan Number \_\_\_\_\_

Site Address Mount Vernon Road over Dogue Creek

Applicant KCI Technologies Phone Number 410 316 7960

Applicant Legal Address 936 Ridgebrook Road Sparks, MD 21152

Owner Directorate of Public Works at Fort Belvoir Phone Number 571 748 9797

Principal Designer KCI Technologies Phone Number 410 316 7960

General Contractor B. L. Harbert International, LLC Phone Number 703 652 2724

Complete set of plans- Include all sheets pertaining to the site grading and stormwater and any activities impacting erosion and sediment control and drainage:

Existing conditions

Demolition

Site grading

Erosion and sediment control

N/A  Storm sewer systems

N/A  Stormwater management facilities

Utility layout

N/A  Landscaping

N/A  On-site and off-site borrow and disposal areas that do not have separate approved ESC Plans

80% Professional's seal - The designer's original seal, signature, and date are required on the *cover* sheet of each Narrative and each set of Plan Sheets. A facsimile is acceptable for subsequent Plan Sheets.

2 Number of plan sets - Two sets of ESC Plans should be submitted. The DEQ office will retain all submitted plans.

N/A Variations - Variations requested at the time of plan submission are governed by Section 9VAC25-840-50 of the *Virginia Erosion and Sediment Control Regulations*.

\_\_\_\_\_ Certified Responsible Land Disturber (RLD) - A certified RLD is required during all stages of construction, from the initial land disturbance through final site stabilization. **The name of the project RLD must be provided before any land disturbance may begin.** Notify DEQ in a timely manner if the RLD changes during the course of the project.

PROJECT NAME: Repair and Replace Dogue Creek Bridge SUBMITTAL#: 1

PLANS DATED: April 19, 2019

N/A   Local Consideration – Plans have been provided to the applicable jurisdictions.

- Dulles Airport (MWAA)
- Fairfax County
- Loudoun County
- Town of Herndon
- Dulles Greenway (Trip II)
- VDOT

**CHECKLIST PREPARER**

I certify that I am a professional in adherence to all minimum standards and requirements pertaining to the practice of that profession in accordance with Chapter 4 (§ 54.1-400 et seq.) of Title 54.1 of the Code of Virginia and attendant regulations. By signing this checklist I am certifying that this document and all attachments are, to the best of my knowledge and belief, true, accurate, and complete.

SIGNATURE \_\_\_\_\_

PRINTED NAME   Stephen F Drumm  

QUALIFICATIONS   PE 0402044936  

DATE   April 19, 2019  

---

PROJECT NAME:   Repair and Replace Dogue Creek Bridge   SUBMITTAL#:   1  

PLANS DATED:   April 19, 2019

**NARRATIVE**

Please reference plan sheet numbers where the information may be found.

- ✓ Project description - Briefly describe the nature and purpose of the land-disturbing activity. Provide the area (acres) to be disturbed.
- ✓ Existing site conditions - A description of the existing topography (% slopes), ground cover, and drainage (on-site and receiving channels).
- ✓ Adjacent areas - A description of all neighboring areas such as residential developments, agricultural areas, streams, lakes, roads, etc., that might be affected by the land disturbance.
- ✓ Off-site areas - Describe any off-site land-disturbing activities that may occur (borrow sites, disposal areas, easements, etc.). Identify the Owner of the off-site area and the entity responsible for plan review. Include a statement that any off-site land-disturbing activity associated with the project must have an approved ESC Plan. Submit documentation of the approved ESC Plan for each of these sites.
- ✓ Soils - Provide a description of the soils on the site, giving such information as soil name, mapping unit, erodibility, permeability, surface runoff, and a *brief* description of depth, texture and soil structure. Show the site location on the Soil Survey, if it is available. Include a plan showing the boundaries of each soil type on the development site.
- ✓ Critical areas - A description of areas on the site that have potentially serious erosion problems or that are sensitive to sediment impacts (e.g., steep slopes, watercourses, wet weather / underground springs, etc.).
- ✓ Erosion and sediment control measures - A description of the structural and vegetative methods that will be used to control erosion and sedimentation on the site. Controls should satisfy applicable minimum standards and specifications in Chapter 3 of the 1992 *Virginia Erosion and Sediment Control Handbook* (VESCH) or more stringent local requirements.
- ✓ Management strategies / Sequence of construction - Address management strategies, the sequence of construction, and any phasing of installation of ESC measures.
- ✓ Permanent stabilization - A brief description, including specifications, of how the site will be stabilized after construction is completed.
- ✓ Maintenance of ESC measures - A schedule of regular inspections, maintenance, and repair of erosion and sediment control structures should be set forth.
- N/A Calculations for temporary erosion and sediment control measures - For each temporary ESC measure, provide the calculations required by the standards and specifications.
- N/A Stormwater management considerations - Will the development of the site cause an increase in peak runoff rates? Will the increase in runoff cause flooding or channel degradation downstream? Describe the strategy to control stormwater runoff, including during construction.

PROJECT NAME: Repair and Replace Dogue Creek Bridge SUBMITTAL#: 1

PLANS DATED: April 19, 2019

✓

Specifications / Detail Drawings for erosion and sediment control measures - For each erosion and sediment control measure employed in the plan, include, at a minimum, the detail from the standard and specification in the VESCH or more stringent local requirements. Include any approved variances or revisions to the standards and specifications.

N/A

Specifications for stormwater and stormwater management structures - Provide specifications for stormwater and stormwater management structures, i.e., pipe materials, pipe bedding, stormwater structures.

---

PROJECT NAME: Repair and Replace Dogue Creek Bridge SUBMITTAL#: 1

PLANS DATED: April 19, 2019

**SITE PLAN**

Please reference plan sheet numbers where the information may be found.

- Vicinity map - A small map locating the site in relation to the surrounding area. Include any landmarks that might assist in locating the site.
- Indicate north - The direction of north in relation to the site.
- Off-site areas - Include any off-site land-disturbing activities (e.g., borrow sites, disposal areas, etc.) not covered by a separate approved ESC Plan.
- Legend - Provide a complete listing of all ESC measures used, including the VESCH uniform code symbol and the standard and specification number. Include any other items necessary to identify pertinent features in the plan.
- Property lines and easements - Show all property and easement lines. For each adjacent property, list the deed book and page number and the property owner's name and address.
- Existing vegetation - Show the existing tree lines, grassed areas, or unique vegetation.
- Limits of clearing and grading - Delineate all areas that are to be cleared and graded.
- Protection of areas not being cleared - Fencing or other measures to protect areas that are not to be disturbed on the site.
- Critical areas - Note all critical areas on the plan.
- Existing contours - Show the existing contours of the site.

---

- Final contours and elevations - Show changes to the existing contours, including final drainage patterns.
- Site development - Show all improvements such as buildings, parking lots, access roads, utility construction, etc. Show all physical items that could affect or be affected by erosion, sediment, and drainage.
- Location of practices - The locations of erosion and sediment control and stormwater management practices used on the site. Use the standard symbols and abbreviations in Chapter 3 of the VESCH.
- Adequate Conveyances - Ensure that stormwater conveyances with adequate capacity and adequate erosion resistance have been provided for all on-site concentrated stormwater runoff. Off-site channels that receive runoff from the site, including those receiving runoff from stormwater management facilities, must be adequate. Increased volumes of sheet flows must be diverted to a stable outlet, adequate channel, pipe or pipe system, or a stormwater management facility.  
 Provide exhibits showing the drainage divides, the direction of flow, and the size (acreage) of each of the site drainage areas that discharge runoff off-site, both existing and proposed.

PROJECT NAME: Repair and Replace Dogue Creek Bridge SUBMITTAL#: 1

PLANS DATED: April 19, 2019

- Provide calculations for pre- and post-development runoff from these drainage areas.
- Ensure that Minimum Standard 19 is satisfied for each off-site receiving channel, including those that receive runoff from stormwater management facilities.
- Provide calculations for the design of each permanent stormwater management facility.
- Ensure that increased volumes of sheet flows are diverted to a stable outlet, to an adequate channel, pipe or pipe system, or to a stormwater management facility.
- Provide adequacy calculations for all on-site stormwater conveyances.

  N/A   Calculations for permanent stormwater conveyances - For each permanent stormwater conveyance or structure, provide the following design calculations, as applicable:

- Drainage area map with time of concentration (T<sub>C</sub>) path shown
- T<sub>C</sub> calculation/nomograph
- Locality IDF curve
- Composite runoff coefficient or RCN calculation
- Peak runoff calculations
- Stormwater conveyance channel design calculations
- Storm drain and storm sewer system design calculations
- Hydraulic Grade Line if any pipe in the system is more than 90% full for a 10-year storm
- Culvert design calculations
- Drop inlet backwater calculations
- Curb inlet length calculations

  N/A   Direction of Flow for Conveyances - Indicate the direction of flow for all stormwater conveyances (storm drains, stormwater conveyance channels).

  N/A   Storm Drain Profiles - Provide profiles of all storm drains except roof drains. If the type of pipe (RCP, CMP, HDPE, etc.) is not called out on the profiles, then the most conservative pipe material that may be specified for the project must be used in the adequacy calculations.

---

PROJECT NAME: Repair and Replace Dogue Creek Bridge SUBMITTAL#:   1  

PLANS DATED:   April 19, 2019

**MINIMUM STANDARDS**

Plan Sheet #

**Minimum Standards - All Minimum Standards must be addressed.**

Yes No NA

- MS-1 Have temporary and permanent stabilization been addressed in the narrative?  
   Are practices shown on the plan?  
   Temporary and permanent seed specifications?  
   Lime and fertilizer?  
   Mulching?  
   Blankets/Matting?  
   Pavement/Construction Road Stabilization?
- MS-2 Has stabilization of soil stockpiles, borrow areas, and disposal areas been addressed in the narrative and on the plan?  
   Have sediment trapping measures been provided?
- MS-3 Has the establishment and maintenance of permanent vegetative stabilization been addressed?
- MS-4 Does the plan specifically state that sediment-trapping facilities shall be constructed as a first step in land-disturbing activities?
- MS-5 Does the plan specifically state that stabilization of earthen structures is required immediately after installation? Is this noted for each measure on the plan?
- MS-6 Are sediment traps and sediment basins specified where needed and designed to the standard and specification?
- MS-7 Have the design and temporary/permanent stabilization of cut and fill slopes been adequately addressed? Is Surface Roughening provided for slopes steeper than 3:1?
- MS-8 Have adequate temporary or permanent conveyances (paved flumes, channels, slope drains) been provided for concentrated stormwater runoff on cut and fill slopes?
- MS-9 Has water seeping from a slope face been addressed (e.g., subsurface drains)?
- MS-10 Is adequate inlet protection provided for all operational storm drain and culvert inlets?

PROJECT NAME: Repair and Replace Dogue Creek Bridge SUBMITTAL#: 1

PLANS DATED: April 19, 2019

Yes No NA

- MS-11 Are adequate outlet protection and/or channel linings provided for all stormwater conveyance channels and receiving channels? Is there a schedule indicating:  
   Dimensions of the outlet protection? Lining? Size of riprap?  
   Cross section and slope of the channels? Type of lining? Size of riprap, if used?
- MS-12 Are in-stream protection measures required so that channel impacts are minimized?
- MS-13 Are temporary stream crossings of non-erodible material required where applicable?
- MS-14 Are all applicable federal, state and local regulations pertaining to working in or crossing live watercourses being followed?
- MS-15 Has immediate restabilization of areas subject to in-stream construction (bed and banks) been adequately addressed?
- MS-16 Have disturbances from underground utility line installations been addressed?  
   No more than 500 linear feet of trench open at one time?  
   Effluent from dewatering filtered or passed through a sediment-trapping device?  
   Proper backfill, compaction, and restabilization?
- MS-17 Is the transport of soil and mud onto public roadways properly controlled? (i.e., Construction Entrances, wash racks, transport of sediment to a trapping facility, cleaning of roadways at the end of each day, no washing before sweeping and shoveling)
- MS-18 Has the removal of temporary practices been addressed?  
   Have the removal of accumulated sediment and the final stabilization of the resulting disturbed areas been addressed?
- 
- MS-19 Are properties and waterways downstream from development adequately protected from sediment deposition, erosion, and damage due to increases in volume, velocity and peak flow rate of stormwater runoff? Have adequate channels been provided on-site?

PROJECT NAME: Repair and Replace Dogue Creek Bridge SUBMITTAL#: 1

PLANS DATED: April 19, 2019

**ARCHITECTURAL RECONNAISSANCE SURVEY  
U.S. ARMY GARRISON, FORT BELVOIR  
DOGUE CREEK BRIDGE  
FAIRFAX COUNTY, VIRGINIA**

[DHR ID 029-5427]



Prepared By:  
U.S. Army Corps of Engineers  
Baltimore District  
2 Hopkins Plaza  
Baltimore, Maryland, 21201

Prepared for:  
Fort Belvoir Directorate of Public Works  
9430 Jackson Loop, Building 1442  
Fort Belvoir, VA 22060

April 2019

## ABSTRACT

Dogue Creek Bridge is a vehicular and pedestrian metal truss bridge located along Mount Vernon Road to the west of Walker Gate on the South Post of U.S. Army Garrison Fort Belvoir (Fort Belvoir). The bridge was designed by the U.S. Army 497<sup>th</sup> Engineer Company and 79<sup>th</sup> Engineer Group (Construction) and built by the 497<sup>th</sup> Engineer Company (Port Construction) and 79<sup>th</sup> Engineer Group (Construction) in 1958. In the past, the bridge has been referred to as Facility No. 1699 or Facility No. 3168, although it is now known as Facility No. 1590.

According to a recent inspection, Dogue Creek Bridge has several structural deficiencies. If action is not taken, the bridge will continue to deteriorate and will eventually be unsafe for vehicle and/or pedestrian traffic. This situation could either result in closure of the bridge due to safety concerns or a potentially catastrophic failure causing injury or fatality. In either case, the approximately 68-acre parcel of Fort Belvoir's South Post located east of Dogue Creek would be isolated from the main portion of Fort Belvoir, resulting in the loss of Walker Gate as an access point to all of South Post and increasing traffic at the other South Post access points. Walker Gate would serve only as an access point for River Village and the marina facilities.

To prevent further deterioration of Dogue Creek Bridge, Fort Belvoir is proposing to repair and rehabilitate the bridge to meet the National Bridge Inspection Standards and Army Regulation 420-1. Repairing and rehabilitating the bridge would improve safety conditions for vehicle and pedestrian traffic. The proposed rehabilitation of Dogue Creek Bridge is an undertaking, as defined by Section 106 of the National Historic Preservation Act (NHPA), as amended. This reconnaissance survey was completed as part of Fort Belvoir's efforts to identify historic properties that could be affected by the proposed undertaking. The goal of the survey was to determine whether the Dogue Creek Bridge is eligible for the National Register of Historic Places (NRHP).

---

Dogue Creek Bridge was previously evaluated for NRHP eligibility in 2006, as documented in Fort Belvoir's report by John Milner & Associates, Inc. titled "Historical Resource Survey and Evaluation, U.S. Army Garrison, Fort Belvoir, Virginia." At the time the bridge was less than 50 years old, and it was determined it did not possess the exceptional significance necessary, as required for a resource less than 50 years old, for inclusion in the NRHP individually or as a contributing resource to an established historic district. However, the bridge is now over 50 years of age, so this Reconnaissance architectural survey was undertaken to determine if the bridge is now eligible for the NRHP. The bridge is a single resource, and the survey area was limited to the bridge itself, which is approximately 0.125 acres in surface area. The architectural survey determined that Dogue Creek Bridge does possess the significance and integrity necessary for inclusion in the NRHP under Criteria A and C.

## TABLE OF CONTENTS

ABSTRACT.....		i
1 INTRODUCTION .....		1
1.1 Site Location .....		1
2 NARRATIVE DESCRIPTION .....		5
3 HISTORIC CONTEXT .....		9
3.1 Military Education and Training at Fort Belvoir .....		9
3.2 History of the Dogue Creek Bridge .....		10
4 SIGNIFICANCE.....		18
4.1 Previous Surveys.....		18
4.2 NRHP Criteria.....		19
4.3 Integrity.....		20
5 SUMMARY AND RECOMMENDATIONS.....		21
6 REFERENCES .....		22

### LIST OF FIGURES

FIGURE 1: TOPOGRAPHIC IMAGE OF THE AREA SURROUNDING FACILITY NO. 1590 .....	3
FIGURE 2: SATELLITE IMAGE OF THE AREA SURROUNDING FACILITY NO. 1590 .....	4
FIGURE 3: PRESENT DAY PHOTO (2018) OF FACILITY NO. 1590 LOOKING EAST. ....	6
FIGURE 4: PRESENT DAY PHOTO (2018) OF FACILITY NO. 1590 LOOKING NORTHEAST. ....	6
FIGURE 5: PRESENT DAY PHOTO (2018) OF FACILITY NO. 1590 LOOKING NORTHEAST. ....	7
FIGURE 6: PRESENT DAY PHOTO (2018) OF FACILITY NO. 1590, PEDESTRIAN WALKWAY, LOOKING EAST. ....	7
FIGURE 7: PRESENT DAY PHOTO (2018) OF FACILITY NO. 1590 LOOKING SOUTHEAST. ....	8
FIGURE 8: 1925, USGS INDIAN HEAD 15' QUAD, 1:62,500 .....	11
FIGURE 9: 1948, USGS BELVOIR 7.5' QUAD, 1:24,000 .....	12
FIGURE 10: 1951, USGS BELVOIR 7.5' QUAD, 1:24,000 .....	12
FIGURE 11: 1965, USGS BELVOIR 7.5' QUAD, 1:24,000 .....	13
FIGURE 12: CONSTRUCTION OF FACILITY NO. 1590 .....	14
FIGURE 13: CONSTRUCTION OF FACILITY NO. 1590 .....	14
FIGURE 14: CONSTRUCTION OF FACILITY NO. 1590 .....	15
FIGURE 15: CONSTRUCTION OF FACILITY NO. 1590 .....	15
FIGURE 16: CONSTRUCTION OF FACILITY NO. 1590 .....	16
FIGURE 17: CONSTRUCTION OF FACILITY NO. 1590 .....	16
FIGURE 18: CONSTRUCTION OF FACILITY NO. 1590 .....	17
FIGURE 19: CONSTRUCTION OF FACILITY NO. 1590 .....	17
FIGURE 20: U.S. ARMY PHOTO OF FACILITY NO. 1590, DOGUE CREEK BRIDGE, TAKEN CA. 1981 LOOKING NORTHEAST ( <i>CASTLE</i> 1981). ....	18
FIGURE 21: PHOTO TAKEN OF FACILITY NO. 1590 IN 2004 LOOKING NORTHEAST (JMA 2006). ...	19

**ARCHITECTURAL RECONNAISSANCE SURVEY  
DOGUE CREEK BRIDGE  
FORT BELVOIR  
FAIRFAX COUNTY, VIRGINIA**

## **1 INTRODUCTION**

Dogue Creek Bridge is a vehicular and pedestrian metal truss bridge located along Mount Vernon Road to the west of Walker Gate on the South Post of U.S. Army Garrison Fort Belvoir (Fort Belvoir; Figure 1). In the past the bridge has been referred to as Facility No. 1699 or Facility No. 3168; although it is now known as Facility No. 1590. Mount Vernon Road connects to Mount Vernon Memorial Hwy (Route 235) outside of the Walker Gate, an access control point for entering onto Fort Belvoir's Main Post. Route 235 is a significant roadway that links a mixture of commercial and residential uses, and offers access to public transportation to and from Fort Belvoir.

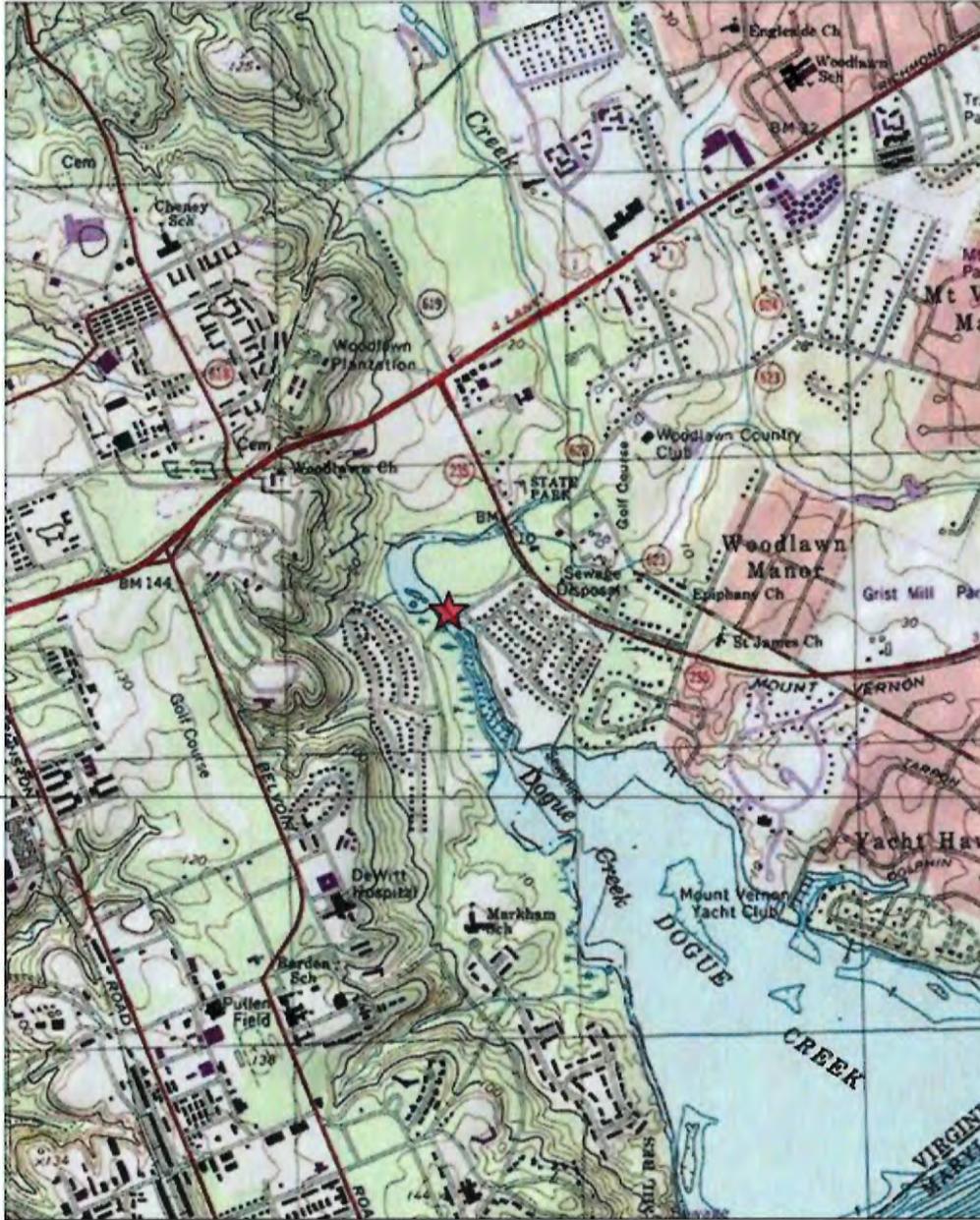
According to a recent inspection, Dogue Creek Bridge has several structural deficiencies. If remedial action is not taken, the bridge will continue to deteriorate and become unsafe for vehicle and pedestrian traffic. This situation could result in either the closure of the bridge due to safety concerns, or a potentially catastrophic failure causing injury or death. In either case, the approximately 68-acre parcel of South Post that located east of Dogue Creek would be isolated from the main portion of South Post, resulting in the loss of Walker Gate as an access point to all of South Post and increasing traffic at the other South Post access points. Walker Gate would serve only as an access point for River Village and the marina facilities.

To prevent further deterioration of Dogue Creek Bridge, Fort Belvoir is proposing to repair and rehabilitate it to meet the National Bridge Inspection Standards and Army Regulation 420-1. Repairing and rehabilitating the bridge would improve safety conditions for vehicle and pedestrian traffic. The proposed rehabilitation of Dogue Creek Bridge is an undertaking as defined by Section 106 of the National Historic Preservation Act (NHPA), as amended. This Reconnaissance architectural survey was completed by the U.S. Army Corps of Engineers, Baltimore District (USACE) as part of Fort Belvoir's efforts to identify historic properties that could be affected by the proposed undertaking. The goal of the survey was to determine whether the Dogue Creek Bridge is eligible for the National Register of Historic Places (NRHP). Dogue Creek Bridge is a single resource, and the survey area was limited to the bridge itself, which is approximately 0.125 acres in surface area. The survey took place in June 2018.

### **1.1 Site Location**

The vehicular and pedestrian Dogue Creek Bridge spans Dogue Creek along Mount Vernon Road (Figures 1 and 2). The intersection of Mount Vernon road with Hudson Road lies to the northeast of the bridge, and the intersection of Mount Vernon Road and Delegate Road lies to the southwest. A parking lot and small boat launch for kayaks and canoes are northwest of the bridge, while a military entrance check point is directly east of the bridge. The Fort Belvoir Marina is downstream of the bridge to the south. Dogue Creek is buffered by wooded areas on the eastern and western banks, separating the creek from the surrounding residential neighborhoods on either side. George

## Location Map for Facility No. 1590



★ Facility No. 1590 Dogue Creek Bridge  
USGS 7.5' Fort Belvoir Quad

0 1,000 2,000 4,000 Feet



Figure 1: Topographic image of the area surrounding Facility No. 1590

## 2 NARRATIVE DESCRIPTION

Placed into position in November 1958, Dogue Creek Bridge is a vehicular and pedestrian bridge on Mount Vernon Road over Dogue Creek (Figures 3-7). Dogue Creek Bridge, consists of two-vehicular lanes and a pedestrian walkway. A steel grid construction, Dogue Creek Bridge includes steel trusses and floor beams with concrete abutments. The top of the bridge is not joined together with lateral cross braces, characteristic of a pony truss bridge. Instead, it is a single span Neville-type truss, with isosceles triangular panels that have verticals on alternating panel points. The bridge measures 160 feet in length and 32 feet in width. Eighty cubic yards of steel reinforced concrete were required for the bridge abutments. Additionally, a special design feature of this bridge was the use of approximately 10,000 self-locking rib bolts that required the design and fabrication of specialized wrenches (Fort Belvoir 1959).

Fort Belvoir's Real Property Records indicate that Dogue Creek Bridge was rehabilitated in the 1980's. The rehabilitation, estimated to cost \$127,000, is reported to have cost approximately \$148,000. A 1981 *Castle* newspaper article states that the rehabilitation work was necessary because "the superstructure of the bridge has rusted and deteriorated." Each of the supporting beams was replaced and the entire bridge was sandblasted and painted. A temporary Bailey Bridge was erected to provide access over Dogue Creek while the bridge was being repaired (*Castle*, 1981).

Although Real Property Records imply that rehabilitation work took place during the summer of 1989, there is documentation indicating that extensive rehabilitation work also occurred in 1997. Documents on file with the Environmental Division of Fort Belvoir include drawings of the 1997 bridge rehabilitation. Work included the replacement of deteriorated or missing bearings and truss connection bolts, the installation of new guardrails, and the cleaning and painting of all structural steel. The 1997 project also included the replacement of deteriorated timber planks on the existing deck walkway and the replacement of the existing sidewalk at each pedestrian approach.



**Figure 5: Present day photo (2018) of Facility No. 1590 looking northeast.**



**Figure 6: Present day photo (2018) of Facility No. 1590, pedestrian walkway, looking east.**

### 3 HISTORIC CONTEXT

#### 3.1 Military Education and Training at Fort Belvoir

The following section is an excerpt from the Fort Belvoir Historic District Nomination Form completed in 2010 by R. Goodwin & Associates, Inc.

Fort Belvoir has a long history of being critical to the training of Army engineers during the 20<sup>th</sup> century. In 1901, the military transferred the Army's Engineer School from Fort Totten, Willets Point, New York, to Washington Barracks (now Fort McNair) in Washington, D.C. (Fort Belvoir *Castle* 1967:1, 6; Manchester 1976:5). Engineer training facilities at Washington Barracks soon became insufficient. The Army sought additional property to house the Engineer School and expanded to Fort Belvoir. The Engineer School at Fort Belvoir (then Camp Humphreys) initially provided summer training facilities. The installation later provided emergency wartime training facilities during World War I. Throughout World War I, Fort Belvoir offered several specialized engineer schools to provide troops with the experience and training necessary for combat conditions, including the pontoon school, gas school, non-commissioned officers school, and engineer officers school (Lione 2004:76). After the war ended, the Engineer School officially moved to Fort Belvoir in 1919 (Fowle 1992:66).

Training activities for engineers continued at Fort Belvoir through WWII. In March 1941, Fort Belvoir founded the first Engineer Replacement Training Center (ERTC) (Harnsberger and Hubbard 1996). Students at the ERTC received training in technical and tactical subjects including the "elements of reconnaissance, coordination with larger groups, and building fixed and floating bridges, roads, and obstacles" (Fowle 1992:72). In April 1944, the ERTC was designated as an Army Service Training Center (Fowle 1992:68). Engineers were organized into combat and construction battalions, topographic battalions, and specialized engineer companies after World War II (U.S. Army Corps of Engineers 1998:120). During the early 1960s, a reorganization of the Corps of Engineers resulted in the elimination of the engineer construction battalion and creation of a standardized engineer combat battalion (U.S. Army Corps of Engineers 1998:121).

At Fort Belvoir, the Cold War resulted in new construction projects, including modifications to existing buildings and the construction of new housing and research facilities. The expansion of the Engineer Research and Development Laboratory (ERDL) also occurred during the early Cold War period. Buildings currently associated with the ERDL were constructed during World War II for the Engineering Board, which was responsible for designing, testing, and adopting equipment for use by the Army Corps of Engineers (John Milner Associates, Inc. 2008:3). Construction at the ERDL, located south of Fort Belvoir's historic district, where Gunston Road becomes Gridley Road, continued through mid-1950s. The ERDL experimented with a variety of technical military applications, including the development and testing of new techniques for generating electrical power, camouflage, bridging, and mine detection (Fort Belvoir n.d.).

Between 1950 and 1970, Fort Belvoir's mission expanded as it became host to a number of tenants, including DeWitt Hospital, the Defense Systems Management College, and the Defense Mapping School, which was created by expanding the mission of an Army mapping school that had been located at Fort Belvoir since 1918 (Fort Belvoir n.d.). These new missions resulted in an increase

A band, reporters, and dignitaries witnessed the placing of the bridge. When interviewed by the Fort Belvoir Post Historian, Mr. James Delmar Seely, the person responsible for the actual placement of the bridge, recalled that the whole process was completed within two hours (O'Neill 2002). Upon completion it was estimated that the finished weight of the bridge was 110 tons. The cantilever pedestrian walkway was added to the bridge sometime between its completion (Figure 19) and 1981 (Figure 20).

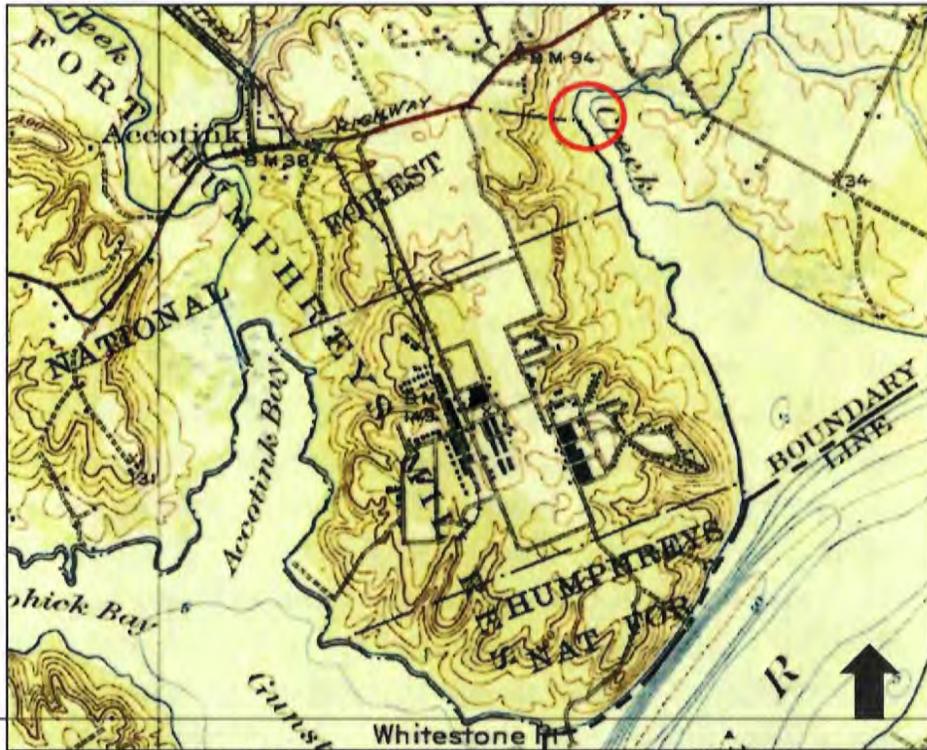


Figure 8: 1925, USGS Indian Head 15' Quad, 1:62,500

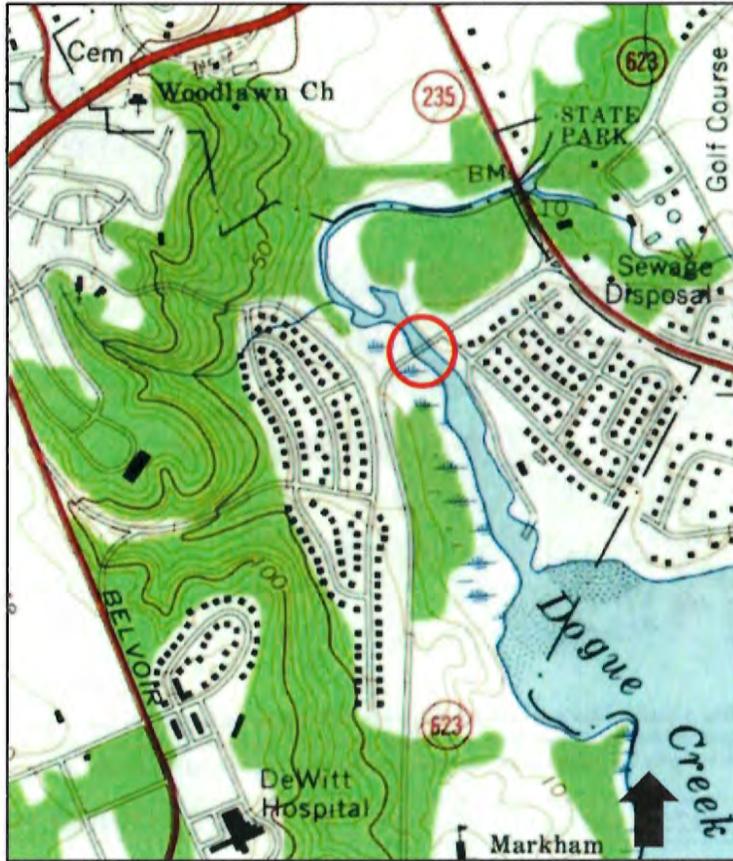
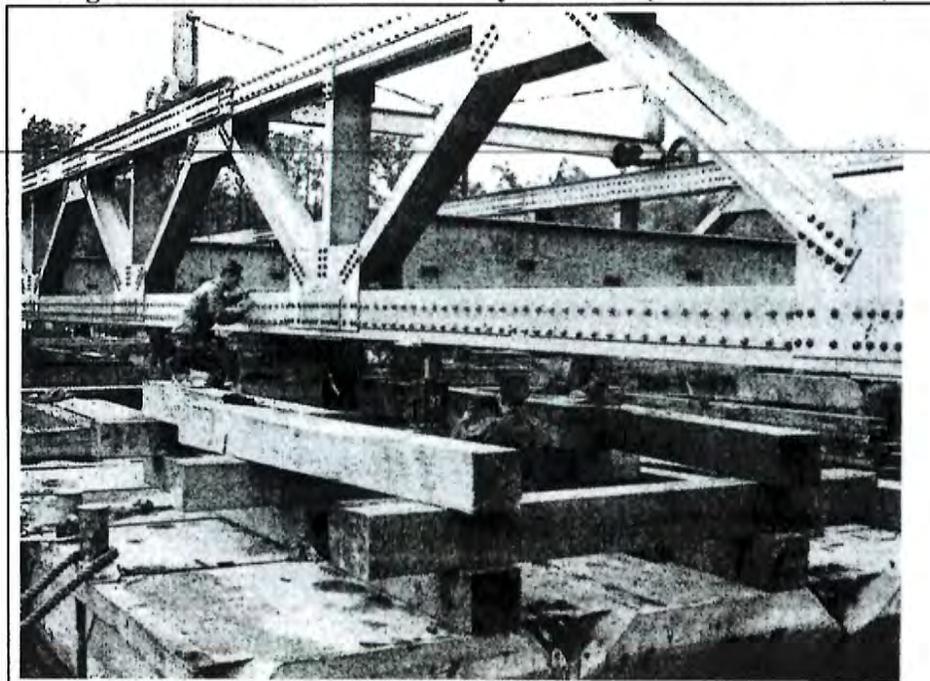


Figure 11: 1965, USGS Belvoir 7.5' Quad, 1:24,000



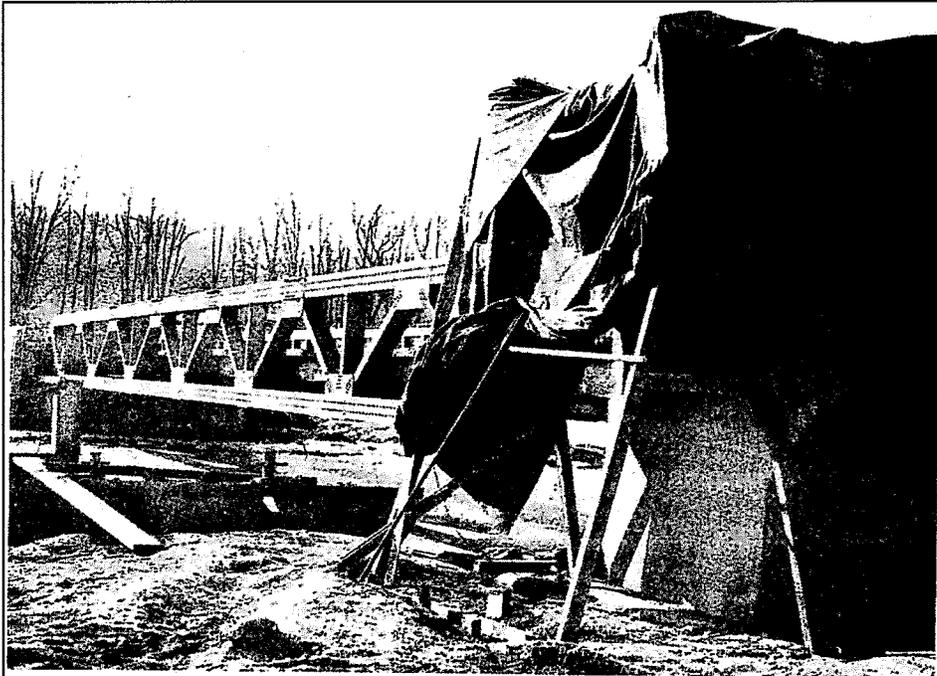
- 3** At the bridge site the barge was swung into position on a rising tide. Then, lining the barge up by mechanical means and with surveying instruments (note man on end floor beams), the bridge was positioned over the sills. As the tide rose to its maximum height, 50-ton hydraulic jacks were set in extended positions at 4 points between the bottom chord members and barge cribbing to prepare for lowering the bridge onto the shore cribbing, and to facilitate removal of the barge.

**Figure 14: Construction of Facility No. 1590 (Fort Belvoir 1959)**



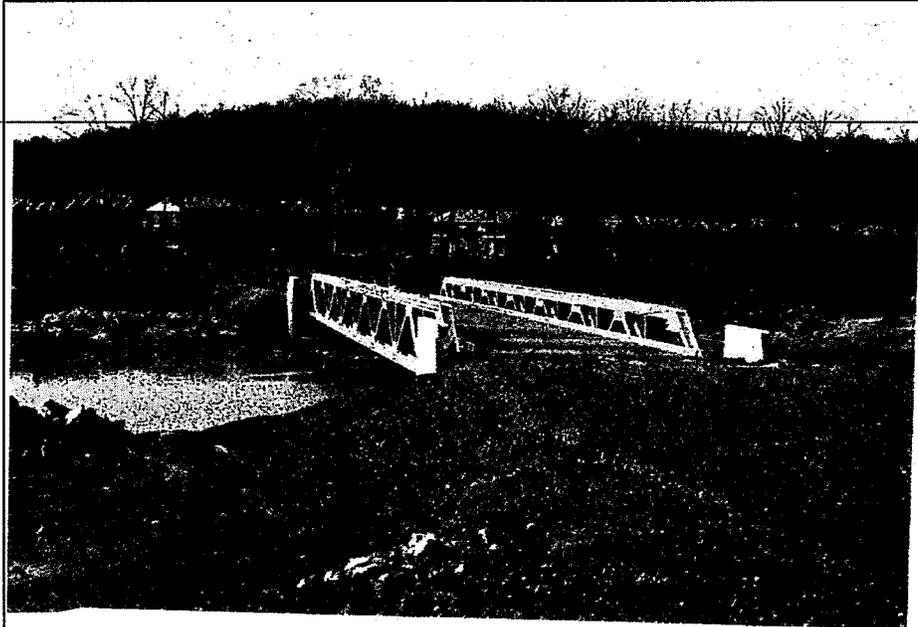
- 4** After the bridge was aligned and as the tide fell, the jacks were used to complete the lowering of the bridge onto the shore cribbing. Then, layer by layer, the barge cribbing was removed. Stacks of 2-inch timber shims replaced the barge cribbing and were, in turn, alternately removed. With the gradual release of pressure on the jacks the barge was allowed to rise to its normal draft without disturbing the bridge alignment.

**Figure 15: Construction of Facility No. 1590 (Fort Belvoir 1959)**



**7** To construct the end dams and side walls the 497th Engineer Company had to pour concrete in freezing temperatures. This necessitated the use of a canvas shelter to cover the entire pour area and the use of Herman-Nelson heaters to heat the inclosure to maintain the temperature necessary for proper curing.

**Figure 18: Construction of Facility No. 1590 (Fort Belvoir 1959)**



**8** Shown above is the completed class 80, 160-foot pony truss bridge spanning Fort Belvoir's Dogue Creek. The bridge has a 22-foot roadway and weighs about 110 tons. Completion of the road this spring provides Fort Belvoir another access route, thus alleviating current congested traffic conditions.

2-7279-ARMY-FORT BELVOIR, VA.

**Figure 19: Construction of Facility No. 1590 (Fort Belvoir 1959)**



**Figure 21: Photo taken of Facility No. 1590 in 2004 looking northeast (JMA 2006).**

## **4.2 NRHP Criteria**

Based on background research, the 2006 JMA survey, and a site visit in 2018, Dogue Creek Bridge was reevaluated under the four criteria for eligibility to the NRHP, now that it is over 50 years old. The bridge was determined to be NRHP eligible under Criteria A and C. Under Criterion A, resources that are eligible must be associated with events that have made a significant contribution to the broad patterns of our history. A structure that meets Criterion A in the area of military significance is associated with the role of the Army in significant military strategies, development, and/or conflicts. Dogue Creek Bridge is significant as an example of the engineering training that occurred on Fort Belvoir during the period of significance. Fort Belvoir was home to engineers who were up-to-date on the latest bridge construction technology and who used that knowledge to construct Dogue Creek Bridge. This structure contributes to the military significance, planning, and development of Fort Belvoir as a vital link between the South Post and the Mount Vernon Parkway, which allowed easier access to the expansion areas of Fort Belvoir. The period of significance is from the date of the bridge's construction in 1958 until 1988, when the Engineer School moved from Fort Belvoir to Fort Leonard Wood.

An Army structure eligible under Criterion C is one that embodies the distinctive characteristics of a type, period, or method of construction or that represents the work of a master, or that possesses high artistic value, or that represents a significant and distinguishable entity whose components may lack individual distinction. Dogue Creek Bridge is significant as a representation of the technology, techniques, and materials utilized in bridge construction by the Army Corps of

- Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. The workmanship of the Engineers that designed and constructed Dogue Creek Bridge is evident in the placement of the steel beams, cross bracing, and rib bolts.
- Feeling is a property's expression of the aesthetic or historic sense of a particular time period. Through its appearance and even the sound cars make as they drive over the metal grating, Dogue Creek Bridge still expresses the feeling of a mid-century two lane back road.
- Association is the direct link between an important historic event or person and a historic property. A period appearance or setting is desirable; integrity of setting, location, design, workmanship, materials, and feeling combine to convey integrity of association. Dogue Creek Bridge's design and placement are directly associated with the training of engineers at Fort Belvoir during the Cold War.

## 5 SUMMARY AND RECOMMENDATIONS

Dogue Creek Bridge was previously evaluated in 2006. At the time the bridge was less than 50 years old, and it did not possess the exceptional NRHP significance necessary for resources less than 50 years old, individually or as a contributing resource to an established historic district. The bridge is now over 50 years of age, and does possess the significance and integrity necessary for individual inclusion in the NRHP under Criteria A and C.

O'Neill, Patrick

2002 Bridge linked Mount Vernon Memorial Parkway to South Post in '58. Post Historian, U.S. Army Garrison, Fort Belvoir, VA.

Paradis, Tom

n.d. "Architectural Styles of America. International (1930s-1980s). Electronic document. Available at <http://jan.ucc.nau.edu/~twp/architecture/international/>. Viewed on 15 January 2010.

U.S. Army Corps of Engineers

1998 *The History of the US Army Corps of Engineers*. Office of History: Alexandria, Virginia.

IN REPLY REFER TO:  
NCPC File No. 8176

May 19, 2020

Mr. Felix Mariani  
Chief of Environmental and Natural Resources Division  
United States Army Garrison Fort Belvoir  
Directorate of Public Works – Building 1442  
9430 Jackson Loop  
Fort Belvoir, VA 22060-5116

Re: Dogue Creek Bridge Replacement Environmental Assessment and Finding of No Significant Impact

Dear Mr. Mariani:

Thank you for the opportunity to comment on the final Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) for the Dogue Creek Bridge replacement at Fort Belvoir on behalf of the National Capital Planning Commission (NCPC). As the federal government's planning agency in the National Capital Region, NCPC has advisory review authority over projects at Fort Belvoir under the National Capital Planning Act (40 USC § 8722 (b) (1)).<sup>1</sup> Please note that the Army should submit the project for preliminary and final review by the Commission prior to advertisement and award of construction contracts. As the project is not in the current 2015 Fort Belvoir Vision and Development Plan, NCPC must refer the project out to local and State planning agencies for comment prior to preliminary Commission review based on our submission policies.

NCPC staff has reviewed the final EA and we do not have any additional comments for Army consideration at this time. We support the need for the project to improve safety conditions for vehicle and pedestrian traffic, and we note that the EA anticipates negligible to minor adverse impacts for each impact area with the exception of moderate impacts to the bridge. It is our understanding that the Army and Virginia State Historic Preservation Office have determined the project will have an adverse effect on the Dogue Creek Bridge as the bridge is a historic resource. The EA describes the significance of the bridge as representative of technology, techniques, and materials utilized in bridge construction by the Army during the 1940s and 1950s, and one of the few surviving mid-20<sup>th</sup> Century bridges of its kind in Virginia. Proposed project mitigation would be implemented pursuant to a Memorandum of Agreement (MOA) between Fort Belvoir and Virginia State Historic Preservation Office. Please include a copy of the signed MOA and FONSI in future project submissions to NCPC.

We appreciate the opportunity to comment on the bridge rehabilitation, and we look forward to future project submissions to NCPC. Please make sure that NCPC is notified of all future comment

---

<sup>1</sup> The Planning Act requires federal agencies to advise and consult with NCPC in the preparation of agency plans prior to preparation of construction plans.

opportunities associated with project scoping and NEPA document review phases. If you have any questions, please contact Michael Weil at (240) 575-0212 / [michael.weil@ncpc.gov](mailto:michael.weil@ncpc.gov), or consult our Agency website ([www.ncpc.gov/](http://www.ncpc.gov/)) for information regarding our Comprehensive Plan policies, review process, and/or submission guidelines.

Sincerely,

*Diane Sullivan*

Diane Sullivan  
Director, Urban Design and Plan Review Division

---

**From:** Brian D Hopper - NOAA Federal [brian.d.hopper@noaa.gov]  
**Sent:** Tuesday, May 05, 2020 9:33 AM  
**To:** Cowen, Nicola D CTR USARMY ID-SUSTAINMENT (USA)  
**Cc:** Murray Brown, Mark A CIV (US); Vaccaro, Christine M CIV (US)  
**Subject:** [Non-DoD Source] Dogue Creek Bridge Project

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

---

Hi Nicola,

Thank you for following up with us about the NOA. Your Environmental Assessment (EA) regarding Fort Belvoir's removal and replacement of the bridge over Dogue Creek, contained information regarding the project and potential environmental impacts.

Although shortnose sturgeon and Atlantic sturgeon originating from five Distinct Population Segments (DPS) are known to occur in the Potomac River and its tributaries, based on the activities associated with the project, the location of the project, and information you provided

in EA, we believe that these species will not be exposed to any direct or indirect effects of the action. Therefore, we do not believe a consultation in accordance with section 7 of the Endangered Species Act (ESA) is necessary. As such, no further coordination on this activity with the NMFS Protected Resources Division is necessary at this time. Should there be additional changes to the project plans or new information becomes available that changes the basis for this determination, further coordination should be pursued. Please contact me (brian.d.hopper@noaa.gov < Caution-mailto:brian.d.hopper@noaa.gov > ), should you have any questions regarding these comments.

Regards,  
-Brian

--

Brian D. Hopper  
Protected Resources Division  
NOAA Fisheries  
Greater Atlantic Regional Fisheries Office  
200 Harry S Truman Parkway  
Suite 460  
Annapolis, MD 21401  
410 267 5649  
[Brian.D.Hopper@noaa.gov](mailto:brian.d.hopper@noaa.gov) < Caution-mailto:brian.d.hopper@noaa.gov >  
[Caution-http://www.greateratlantic.fisheries.noaa.gov/](http://www.greateratlantic.fisheries.noaa.gov/) < Caution-  
<http://www.greateratlantic.fisheries.noaa.gov/> >

**From:** [Fleming, Gregory W CIV USARMY ID-SUSTAINMENT \(USA\)](#)  
**To:** [Niki Cowen](#); [Keough, Dorothy E CIV USARMY ID-SUSTAINMENT \(USA\)](#)  
**Cc:** [Mariani, Felix M CIV USARMY ID-SUSTAINMENT \(USA\)](#); [Harback, Wilamena G CIV USARMY ID-SUSTAINMENT \(USA\)](#); [Bartley, Brice C CIV USARMY ID-SUSTAINMENT \(USA\)](#); [jcolonruiz@res.us](mailto:jcolonruiz@res.us)  
**Subject:** RE: [Non-DoD Source] RE: NEW PROJECT-EXPEDITED REVIEW-ARMY Dogue Creek Bridge Rehab, DEQ #20-066F (UNCLASSIFIED)  
**Date:** Tuesday, May 5, 2020 5:34:04 PM

---

CLASSIFICATION: UNCLASSIFIED

Hi all,

I called Daniel Moore today about this project and he agreed to use the Public Road CZMA exemption for this project. He said he would send a letter to Julia in the morning stating this and our project could start on time and not need a WQIA as he stated in his letter.

V/r,

Greg

Gregory W Fleming  
Natural Resources Specialist  
Environmental Division  
U.S. Army Garrison Fort Belvoir Directorate of Public Works  
9430 Jackson Loop, Building 1442, Room #227 USAG Fort Belvoir, VA 22060-5116  
Desk: (703) 806-3408  
DSN: 656-3408  
FAX: 703) 806-0145  
NIPR: [gregory.w.fleming.civ@mail.mil](mailto:gregory.w.fleming.civ@mail.mil)

We are the Army's Home  
Learn more at <https://home.army.mil/belvoir/>

IF THIS EMAIL CONTAINS INFORMATION SUBJECT TO THE PRIVACY ACT, FREEDOM OF INFORMATION ACT, OR CONTAINING PII:

- ATTENTION: The information contained in this communication and any accompanying attachments is intended for the sole use of the names addresses/recipients to whom it is addressed in their in conduct of official business of the United States Government. This communication may contain information that is exempt from disclosure under the Freedom of Information Act, 5 U.S.C. 552 and the Privacy Act, 5 U.S.C. 552a. Addressees/recipients are not to disseminate this communication to individuals other than those who have an official need to know the information in the course of their official government duties. If you received this communication in error, any disclosure, copying, distribution, or the taking of any action on this information is prohibited. If you received this confidential electronic mailing in error, please notify the sender by a "reply to the sender only" message, delete the email immediately and destroy all electronic and hard copies of the communication, including attachments.

FOR ALL OTHER EMAILS:

- ATTENTION: The email message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure, or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message.

-----Original Message-----

From: Niki Cowen [<mailto:ncowen@paragonstar.com>]  
Sent: Tuesday, May 5, 2020 7:45 AM  
To: Fleming, Gregory W CIV USARMY ID-SUSTAINMENT (USA) <[gregory.w.fleming.civ@mail.mil](mailto:gregory.w.fleming.civ@mail.mil)>; Keough, Dorothy E CIV USARMY ID-SUSTAINMENT (USA) <[dorothy.e.keough.civ@mail.mil](mailto:dorothy.e.keough.civ@mail.mil)>  
Subject: [Non-DoD Source] RE: NEW PROJECT-EXPEDITED REVIEW-ARMY Dogue Creek Bridge Rehab, DEQ #20-066F (UNCLASSIFIED)

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

----

Greg,

Please see attached.

Thank you,

Niki  
Nicola Cowen  
Senior Environmental Specialist - NEPA Contractor Paragon Business Solutions, Inc.  
Environmental Division  
US Army Fort Belvoir Directorate of Public Works (DPW)  
9430 Jackson Loop, Building 1442, Rm # 226 Fort Belvoir, VA 22060-5116  
Desk: (703) 806-0054  
Cell: (703) 473-9231  
DSN: 656-0054  
NIPR: [nicola.d.cowen.ctr@mail.mil](mailto:nicola.d.cowen.ctr@mail.mil)

We are the Army's Home  
Learn more at Caution-<https://home.army.mil/belvoir/>

ATTENTION: The email message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure, or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message.

-----Original Message-----

From: Fleming, Gregory W CIV USARMY ID-SUSTAINMENT (USA) <[gregory.w.fleming.civ@mail.mil](mailto:gregory.w.fleming.civ@mail.mil)>  
Sent: Monday, May 4, 2020 6:15 PM  
To: Keough, Dorothy E CIV USARMY ID-SUSTAINMENT (USA) <[dorothy.e.keough.civ@mail.mil](mailto:dorothy.e.keough.civ@mail.mil)>  
Cc: Niki Cowen <[ncowen@paragonstar.com](mailto:ncowen@paragonstar.com)>  
Subject: RE: NEW PROJECT-EXPEDITED REVIEW-ARMY Dogue Creek Bridge Rehab, DEQ #20-066F (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Dorothy,

I will call Daniel Moore. Niki could you send me the impact map for this that was in the EA? Then I can talk it over with Daniel. I was not aware of any permanent impact to the RPA. Initially a WQIA was needed but we made changes so we didn't impact the RPA. Sounds like the WQIA statement was not removed from the EA.

V/r,

Greg

-----Original Message-----

From: Keough, Dorothy E CIV USARMY ID-SUSTAINMENT (USA)  
Sent: Monday, May 4, 2020 10:29 AM  
To: Fleming, Gregory W CIV USARMY ID-SUSTAINMENT (USA) <gregory.w.fleming.civ@mail.mil>  
Subject: FW: NEW PROJECT-EXPEDITED REVIEW-ARMY Dogue Creek Bridge Rehab, DEQ #20-066F  
Importance: High

Greg, looks like this is yours?

Dorothy E. Keough  
Branch Chief, Conservation  
Environmental Division, Directorate of Public Works  
9430 Jackson Loop, Building 1442, Room # 227 Fort Belvoir, VA 22060

Desk: 703-806-0049  
DSN: 656-0049  
FAX: 703-806-0145  
NIPR: Dorothy.e.Keough.civ@mail.mil

We are the Army's Home  
Learn more at Caution-<https://home.army.mil.belvoir>

IF THIS EMAIL CONTAINS INFORMATION SUBJECT TO THE PRIVACY ACT, FREEDOM OF INFORMATION ACT, OR CONTAINING PII:

-ATTENTION: The information contained in this communication and any accompanying attachments is intended for the sole use of the names, addresses/recipients to whom it is addressed in the conduct of official business of the United States Government. This communication may contain information that is exempt from disclosure under the Freedom of Information Act, 5 U.S.C. 552 and the Privacy Act, 5 U.S.C. 552a. Addressees/recipients are not to disseminate this communication to individuals other than those who have an official need to know the information in the course of their official government duties. If you received this communication in error, any disclosure, copying distribution, or taking of any action on this information is prohibited. If you received this confidential electronic mailing in error, please notify the sender by a "reply to the sender only" message, delete the email immediately and destroy all electronic and hard copies of the communication, including attachments.

FOR ALL OTHER EMAILS:

-ATTENTION: The email message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure, or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message.

For Official Use Only (FOUO)

-----Original Message-----

From: Niki Cowen [Caution-<mailto:ncowen@paragonstar.com>]  
Sent: Monday, May 4, 2020 9:42 AM  
To: Keough, Dorothy E CIV USARMY ID-SUSTAINMENT (USA) <dorothy.e.keough.civ@mail.mil>; Bartley, Brice C CIV USARMY ID-SUSTAINMENT (USA) <brice.c.bartley.civ@mail.mil>; jcolonruiz@res.us; Harback, Wilamena G CIV USARMY ID-SUSTAINMENT (USA) <wilamena.g.harback.civ@mail.mil>  
Cc: Cowen, Nicola D CTR USARMY ID-SUSTAINMENT (USA) <nicola.d.cowen.ctr@mail.mil>

Subject: FW: NEW PROJECT-EXPEDITED REVIEW-ARMY Dogue Creek Bridge Rehab, DEQ #20-066F  
Importance: High

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

---

Dear All,

Please see below the email from Daniel Moore (DEQ) regarding the Dogue Creek Bridge EA. Please advise on how to address the requirement for a Water Quality Impact Assessment (WQIA) in accordance with 9VAC25-830-140 6 of the Regulations. I believe that this can be addressed with our responses to his comments. I am also waiting on additional comments from other agencies, since they did not receive the NOA in early March.

Thank you,

Niki

Nicola Cowen  
Senior Environmental Specialist - NEPA Contractor Paragon Business Solutions, Inc.  
Environmental Division  
US Army Fort Belvoir Directorate of Public Works (DPW)  
9430 Jackson Loop, Building 1442, Rm # 226 Fort Belvoir, VA 22060-5116  
Desk: (703) 806-0054

Cell: (703) 473-9231

DSN: 656-0054

NIPR: nicola.d.cowen.ctr@mail.mil < Caution-Caution-<mailto:nicola.d.cowen.ctr@mail.mil> >

We are the Army's Home

Learn more at Caution-Caution-<https://home.army.mil/belvoir/> < Caution-Caution-<https://home.army.mil/belvoir/> >

ATTENTION: The email message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure, or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message.

From: Wellman, Julia <julia.wellman@deq.virginia.gov>

Sent: Monday, May 4, 2020 9:20 AM

To: Niki Cowen <ncowen@paragonstar.com>

Subject: Fwd: NEW PROJECT-EXPEDITED REVIEW-ARMY Dogue Creek Bridge Rehab, DEQ #20-066F

Ms. Cowen,

Please see the note below from Daniel Moore and the attachment. Please coordinate with Daniel regarding the WQIA.

----- Forwarded message -----

From: Moore, Daniel <daniel.moore@deq.virginia.gov < Caution-Caution-<mailto:daniel.moore@deq.virginia.gov> >  
>

Date: Fri, May 1, 2020 at 3:39 PM

Subject: Re: NEW PROJECT-EXPEDITED REVIEW-ARMY Dogue Creek Bridge Rehab, DEQ #20-066F

To: Wellman, Julia <julia.wellman@deq.virginia.gov < Caution-Caution-<mailto:julia.wellman@deq.virginia.gov> >  
>

I saw that they asked for expedited review. They will need to submit a WQIA, which no doubt will impact their schedule and this review.

Daniel Moore

Principal Environmental Planner

Department of Environmental Quality

Office of Local Government Programs

1111 E. Main Street

Richmond, VA 23219

(804) 698-4520

daniel.moore@deq.virginia.gov < Caution-Caution-<mailto:daniel.moore@deq.virginia.gov> >

On Thu, Apr 30, 2020 at 5:06 PM Wellman, Julia <julia.wellman@deq.virginia.gov < Caution-Caution-<mailto:julia.wellman@deq.virginia.gov> > > wrote:

This project is in the RPA.

----- Forwarded message -----

From: Fulcher, Valerie <valerie.fulcher@deq.virginia.gov < Caution-Caution-<mailto:valerie.fulcher@deq.virginia.gov> > >  
Date: Thu, Apr 30, 2020 at 4:48 PM  
Subject: NEW PROJECT-EXPEDITED REVIEW-ARMY Dogue Creek Bridge Rehab, DEQ #20-066F  
To: rr dgif-ESS Projects <essprojects@dgif.virginia.gov < Caution-Caution-<mailto:essprojects@dgif.virginia.gov> > >, Roberta Rhur <robbie.rhur@dcr.virginia.gov < Caution-Caution-<mailto:robbie.rhur@dcr.virginia.gov> > >, odwreview (VDH) <odwreview@vdh.virginia.gov < Caution-Caution-<mailto:odwreview@vdh.virginia.gov> > >, Carlos Martinez <carlos.martinez@deq.virginia.gov < Caution-Caution-<mailto:carlos.martinez@deq.virginia.gov> > >, Kotur Narasimhan <kotur.narasimhan@deq.virginia.gov < Caution-Caution-<mailto:kotur.narasimhan@deq.virginia.gov> > >, Lawrence Gavan <larry.gavan@deq.virginia.gov < Caution-Caution-<mailto:larry.gavan@deq.virginia.gov> > >, Daniel Moore <daniel.moore@deq.virginia.gov < Caution-Caution-<mailto:daniel.moore@deq.virginia.gov> > >, Holly Sepety <holly.sepety@deq.virginia.gov < Caution-Caution-<mailto:holly.sepety@deq.virginia.gov> > >, Benjamin Holland <benjamin.holland@deq.virginia.gov < Caution-Caution-<mailto:benjamin.holland@deq.virginia.gov> > >, Roger Kirchen <roger.kirchen@dhr.virginia.gov < Caution-Caution-<mailto:roger.kirchen@dhr.virginia.gov> > >, Mark Eversole <mark.eversole@mrc.virginia.gov < Caution-Caution-<mailto:mark.eversole@mrc.virginia.gov> > >, Bob Lazaro <rlazaro@novaregion.org < Caution-Caution-<mailto:rlazaro@novaregion.org> > >, James, Denise <Denise.James@fairfaxcounty.gov < Caution-Caution-<mailto:Denise.James@fairfaxcounty.gov> > >, rr EIR Coordination <eir.coordination@vdot.virginia.gov < Caution-Caution-<mailto:eir.coordination@vdot.virginia.gov> > >  
>  
Cc: Wellman, Julia <julia.wellman@deq.virginia.gov < Caution-Caution-<mailto:julia.wellman@deq.virginia.gov> > >

Good afternoon - this is a new OEIR review request/project:

Document Type: Environmental Assessment/Federal Consistency Determination

Project Sponsor: Department of the Army

Project Title: Dogue Creek Bridge Rehabilitation, U.S. Army Garrison Fort Belvoir

Location: Fairfax County

Project Number: DEQ #20-066F

The document is available at Caution-Caution-[www.deq.virginia.gov/filesshare/oeir](http://www.deq.virginia.gov/filesshare/oeir) < Caution-Caution-<http://www.deq.virginia.gov/filesshare/oeir> > in the ARMY folder.

The due date for comments is MAY 20, 2020. You can send your comments either directly to JULIA WELLMAN by email (Julia.Wellman@deq.virginia.gov < Caution-Caution-<mailto:Julia.Wellman@deq.virginia.gov> > ), or you can send your comments by regular interagency/U.S. mail to the Department of Environmental Quality, Office of Environmental Impact Review, P.O. Box 1105, Richmond, VA 23218.

NOTE: This deadline is expedited at the request of the Army.

If you cannot meet the deadline, please notify the project coordinator prior to the comment due date. Arrangements may be made to extend the deadline for comments if possible. An agency will be considered to have no concerns if comments are not received (or contact is made) within the review period. However, it is important that agencies consistently participate in accordance with Virginia Code Section 10.1-1192.

REVIEW INSTRUCTIONS:

A. Please review the document carefully. If the proposal has been previously reviewed (e.g. as a draft EIS or a Part 1 EIR), please consider whether your earlier comments have been adequately addressed.

B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency (agency stationary or email) and include the project number on all correspondence.

If you have any questions, please email Julia.

Thanks!

Valerie

--

Valerie A. Fulcher, CAP, OM, Environmental Program Specialist

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

804/698-4330 <tel:(804)%20698-4330 >

804/698-4319 <tel:(804)%20698-4319 > (Fax)

email: Valerie.Fulcher@deq.virginia.gov < Caution-Caution-<mailto:Valerie.Fulcher@deq.virginia.gov> >

Caution-Caution-<http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx> < Caution-Caution-<http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx> >

For program updates and public notices please subscribe to Constant Contact: Caution-

Caution-<https://lp.constantcontact.com/su/MVcCump/EIR> < Caution-  
Caution-<https://lp.constantcontact.com/su/MVcCump/EIR> >

--

Julia Wellman  
Environmental Impact Review Coordinator  
Department of Environmental Quality  
1111 E Main Street, Suite 1400 < Caution-Caution-[https://maps.google.com/?  
q=1111+E+Main+Street,+Suite+1400+%0D%0ARichmond,+VA+23219+%0D%0A\(804&entry=gmail&source=g](https://maps.google.com/?q=1111+E+Main+Street,+Suite+1400+%0D%0ARichmond,+VA+23219+%0D%0A(804&entry=gmail&source=g)  
>  
Richmond, VA 23219  
804-698-4326 < tel:(804)%20698-4326 >  
Julia.Wellman@deq.virginia.gov < Caution-Caution-<mailto:Julia.Wellman@deq.virginia.gov> >  
Caution-Caution-[www.deq.virginia.gov](http://www.deq.virginia.gov/) < Caution-Caution-<http://www.deq.virginia.gov/> >

\*\*\*\* For program updates and public notices, please subscribe to Constant Contact: Caution-  
Caution-<https://lp.constantcontact.com/su/MVcCump/EIR> < Caution-  
Caution-<https://lp.constantcontact.com/su/MVcCump/EIR> > \*\*\*\*

--

Julia Wellman  
Environmental Impact Review Coordinator  
Department of Environmental Quality  
1111 E Main Street, Suite 1400 < Caution-Caution-[https://maps.google.com/?  
q=1111+E+Main+Street,+Suite+1400+%0D%0ARichmond,+VA+23219+%0D%0A\(804&entry=gmail&source=g](https://maps.google.com/?q=1111+E+Main+Street,+Suite+1400+%0D%0ARichmond,+VA+23219+%0D%0A(804&entry=gmail&source=g)  
> Richmond, VA 23219  
804-698-4326 < tel:(804)%20698-4326 >  
Julia.Wellman@deq.virginia.gov < Caution-Caution-<mailto:Julia.Wellman@deq.virginia.gov> > Caution-Caution-  
[www.deq.virginia.gov](http://www.deq.virginia.gov/) < Caution-Caution-<http://www.deq.virginia.gov/> >

\*\*\*\* For program updates and public notices, please subscribe to Constant Contact: Caution-  
Caution-<https://lp.constantcontact.com/su/MVcCump/EIR> < Caution-  
Caution-<https://lp.constantcontact.com/su/MVcCump/EIR> > \*\*\*\*

CLASSIFICATION: UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 1111 East Main Street, Suite 1400, Richmond, VA 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Matthew J. Strickler  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4000  
1-800-592-5482

### MEMORANDUM

**TO:** Julia Wellman, DEQ Office of Environmental Impact Review

**FROM:** Daniel Moore, DEQ Principal Environmental Planner

**DATE:** May 1, 2020

**SUBJECT:** DEQ #20-66F: US Department of Army: Dogue Creek Bridge Rehabilitation, Ft. Belvoir, Fairfax County Virginia

We have reviewed the Environmental Assessment for the above-referenced project and offer the following comments regarding consistency with the provisions of the *Chesapeake Bay Preservation Area Designation and Management Regulations* (Regulations):

In Fairfax County, the areas protected by the Chesapeake Bay Preservation Act (CBPA), as locally implemented, require conformance with performance criteria. These areas include Resource Protection Areas (RPAs) and Resource Management Areas (RMAs) as designated by the local governments. RPAs include tidal wetlands, certain non-tidal wetlands, and tidal shores. RPAs also include a 100-foot vegetated buffer area located adjacent to and landward of these features and along both sides of any water body with perennial flow. RMAs, which require less stringent performance criteria than RPAs, are designated jurisdiction-wide in Fairfax County and include all lands not designated as RPA.

The proposed project involves the removal of the existing Dogue Creek Bridge superstructure and installation of new bridge superstructure. (The existing bridge *substructure* will remain in place.) Removal of the bridge superstructure will involve the use of a 30-foot crane to be placed on Mt. Vernon Road immediately adjacent to the existing bridge. Bridge sections removed will be stored in a laydown area directly behind the crane. This laydown area would also be used for material storage, material handling, and bridge assembly and disassembly. An area south of the laydown area would be used for additional material storage, a turnaround for equipment and a secondary crane location. The bridge replacement project includes the following actions:

- Removal (in separate sections) of the existing truss bridge and sidewalk structure
- Clearing of dirt and debris from abutment bridge seats
- Replacement of all existing bridge bearings

- Installation of new bridge superstructure
- Replacement of existing concrete sidewalks at east and west ends of bridge walkways with new concrete sidewalks
- Tree trimming and removal of three trees (mitigation to include 1-for-1 replacement of trees removed)
- Relocation of all existing utilities

Under the Federal Consistency Regulations of the *Coastal Zone Management Act of 1972*, federal actions in Virginia must be conducted in a manner “consistent to the maximum extent practicable” with the enforceable policies of the Virginia Coastal Management Program. The Coastal Lands Management enforceable policy is administered through the Chesapeake Bay Preservation Act and Regulations.

Federal actions on installations located within Tidewater Virginia are required to be consistent with the performance criteria of the Regulations on lands analogous to locally designated RPAs and RMAs, as provided in 9VAC25-830-130 and 140 of the Regulations, including compliance with the requirements of the *Virginia Erosion and Sediment Control Handbook*, and stormwater management criteria consistent with water quality protection provisions of the *Virginia Stormwater Management Regulations*. For land disturbance over 2,500 square feet, the project must comply with the requirements of the *Virginia Erosion and Sediment Control Handbook*. 9VAC25-830-130 of the Regulations specifically requires all proposed land development activities to meet the following three specific performance criteria: 1) no more land shall be disturbed than is necessary to provide for the proposed use or development; 2) indigenous vegetation shall be preserved to the maximum extent practicable, consistent with the use or development proposed; and 3) land development shall minimize impervious cover consistent with the proposed use or development.

Figure 3-1 (page 3-10: *Wetlands and Resource Protection Areas*) of the Environmental Assessment show that the entire project site is on lands analogous to locally designated RPA. 9VAC25-830-140 of the Regulations describes development (and redevelopment) criteria for RPAs. Land development similar to the proposed action may be allowed in the RPA only if it is water-dependent, constitutes redevelopment, and/or is a road or driveway crossing through a RPA that satisfies 9VAC25-830-140 1 (d) of the Regulations. 9VAC25-830-140 1 (a) requires that a Water Quality Impact Assessment (WQIA) in accordance with 9VAC25-830-140 6 of the Regulations “...shall be required for any proposed land disturbance.” As referenced in the submitted EA document:

*Minor short-term adverse impacts to surface water would be anticipated from bridge dust and debris and earth disturbance and potential for increased erosion from clearing dirt and debris from abutments. Minor short-term adverse impacts to Resource Protection Areas would be anticipated because of Dogue Creek and its tidal wetlands buffers in the project area.*

Provided adherence to the above requirements, particularly regarding the submission of a WQIA, the proposed activity would be consistent with the *Chesapeake Bay Preservation Act* and the Regulations. A WQIA for the proposed project should be of sufficient specificity to demonstrate compliance with the Regulations and should be sent to the DEQ Office of Local Government Programs.

**From:** [Cowen, Nicola D CTR USARMY ID-SUSTAINMENT \(USA\)](#)  
**To:** [Niki Cowen](#)  
**Subject:** FW: [Non-DoD Source] FW: Dogue Creek Bridge EA  
**Date:** Monday, May 4, 2020 9:50:40 AM

---

---

**From:** Harper, John - NRCS, Richmond, VA [john.harper@usda.gov]  
**Sent:** Monday, May 04, 2020 9:35 AM  
**To:** USARMY Ft Belvoir IMCOM Atlantic Mailbox ENRD  
**Cc:** Cowen, Nicola D CTR USARMY ID-SUSTAINMENT (USA); Bricker, Jack - NRCS, Richmond, VA  
**Subject:** [Non-DoD Source] FW: Dogue Creek Bridge EA

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

---

Mr Felix Mariani,

This is the Natural Resource Conservation Service's response to your EA request for the Dogue Creek Bridge Project

Please follow all local and state erosion and sediment ordinances and laws to reduce erosion and water quality issues.

Thank you, Please do not hesitate to contact me if you have questions.

## J. David Harper

State Soil Scientist  
State Resource Inventory Coordinator  
1606 Santa Rosa Road, Suite 209  
Richmond, Virginia 23229  
804-287-1647

**From:** Cowen, Nicola D CTR USARMY ID-SUSTAINMENT (USA)  
<nicola.d.cowen.ctr@mail.mil < Caution-mailto:nicola.d.cowen.ctr@mail.mil > >  
**Sent:** Monday, May 4, 2020 8:44 AM  
**To:** Bricker, Jack - NRCS, Richmond, VA <jack.bricker@usda.gov < Caution-mailto:jack.bricker@usda.gov > >  
**Cc:** Anderson, Kathleen - NRCS, Richmond, VA <kathleen.anderson@usda.gov < Caution-mailto:kathleen.anderson@usda.gov > >  
**Subject:** Dogue Creek Bridge EA  
**Importance:** High

Dear Mr. Bricker,

I am writing to confirm that you received the attached NOA via mail in early March. If that is not the case, please let me know that you received the attached and are able to download the document from our website. We did not receive comments from other agencies that generally comment on our Environmental Assessments and have been in contact with them only to find out that the NOA was not received.

Best regards,

**Niki**

Nicola Cowen

Senior Environmental Specialist - NEPA Contractor

Paragon Business Solutions, Inc.

Environmental Division

US Army Fort Belvoir Directorate of Public Works (DPW)

9430 Jackson Loop, Building 1442, Rm # 226

Fort Belvoir, VA 22060-5116

Desk: (703) 806-0054

**Cell: (703) 473-9231**

DSN: 656-0054



## COMMONWEALTH of VIRGINIA

### DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 1111 East Main Street, Suite 1400, Richmond, VA 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Matthew J. Strickler  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4000  
1-800-592-5482

May 27, 2020

Ms. Nicola Cowen  
Senior Environmental Specialist - NEPA Contractor  
Paragon Business Solutions, Inc.  
Environmental Division  
US Army Fort Belvoir Directorate of Public Works (DPW)  
9430 Jackson Loop, Building 1442, Rm # 226  
Fort Belvoir, VA 22060-5116  
Sent via email: [ncowen@paragonstar.com](mailto:ncowen@paragonstar.com) and [nicola.d.cowen.ctr@mail.mil](mailto:nicola.d.cowen.ctr@mail.mil)

RE: U.S. Department of the Army, Draft Environmental Assessment and Federal Consistency Determination: Dogue Creek Bridge Rehabilitation, U.S. Army Garrison Fort Belvoir, Fairfax County (DEQ 20-066F).

Dear Ms. Cowen:

The Commonwealth of Virginia has completed its review of the draft Environmental Assessment (EA), which includes a federal consistency determination (FCD), for the above-referenced project. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to the National Environmental Policy Act (NEPA) and responding to appropriate federal officials on behalf of the Commonwealth. DEQ is also responsible for coordinating state reviews of FCDs submitted under the Coastal Zone Management Act. The following agencies and locality participated in this review:

Department of Environmental Quality  
Department of Conservation and Recreation  
Department of Game and Inland Fisheries  
Department of Historic Resources  
Department of Health  
Department of Transportation  
Fairfax County

The Virginia Marine Resources Commission and the Northern Virginia Regional Commission also were invited to comment on the project.

## **PROJECT DESCRIPTION**

The U.S. Department of the Army is proposing to rehabilitate Dogue Creek Bridge by removing and replacing the bridge's superstructure to meet safety standards. The bridge is located on Fort Belvoir in Fairfax County. The bridge's substructure will remain in place. The proposed project would involve the following:

- Set up detour route and close bridge to vehicular and pedestrian traffic;
- Install traffic barricades on the east and west sides of existing bridge;
- Trim trees (grubbing not anticipated);
- Remove existing truss bridge and sidewalk structure;
- Clear dirt and debris from abutment beam seats;
- Replace existing bearings;
- Set new bridge superstructure;
- Replace concrete sidewalks at east and west ends of bridge walkway (replace existing concrete sidewalk with new sidewalk);
- Install new W-beam guardrail on bridge and approaches (existing W-beam traffic barrier would be removed); and
- Relocate existing utilities.

## **FEDERAL CONSISTENCY PURSUANT TO THE COASTAL ZONE MANAGEMENT ACT**

Pursuant to the Coastal Zone Management Act of 1972, as amended, activities both within and outside of the Commonwealth's designated coastal zone with reasonably foreseeable effects on any coastal uses or resources resulting from a Federal agency activity (15 CFR Part 930, Subpart C) must be consistent to the maximum extent practicable with Virginia's Coastal Zone Management (CZM) Program. The Virginia CZM Program consists of a network of programs administered by several agencies. DEQ coordinates the review of FCDs with agencies administering the enforceable policies of the Virginia CZM Program.

## **PUBLIC PARTICIPATION**

In accordance with 15 CFR §930.2, a public notice with a comment period of May 5, 2020 to May 20, 2020 of this proposed action was published in OEIR's Program Newsletter and on the DEQ website. No public comments were received in response to the notice.

## **FEDERAL CONSISTENCY CONCURRENCE**

The FCD states that the project is consistent to the maximum extent practicable with the enforceable policies of the Virginia CZM Program. The reviewing agencies that are responsible for the administration of the enforceable policies generally agree with the FCD. Based on the review of the FCD and the comments submitted by agencies administering the enforceable policies of the Virginia CZM Program, DEQ concurs that the proposed project is consistent to the maximum extent practicable with the Virginia CZM Program provided all applicable permits and approvals are obtained as described. In addition, in accordance with 15 CFR §930.39(c), DEQ recommends that the Army consider the impacts of the proposed action on the [advisory policies](#) of the Virginia CZM Program. However, other state approvals which may apply to this project are not included in this concurrence. Therefore, the responsible agent must also ensure that this project is constructed and operated in accordance with all applicable federal, state and local laws and regulations.

## NEPA CONCLUSION

Provided activities are performed in accordance with the recommendations which follow in the Environmental Impacts and Mitigation section of this report, the proposal described in the EA is unlikely to have significant effects on ambient air quality, water quality, wetlands, wildlife resources, forest resources, historic resources, and solid and hazardous wastes. It is unlikely to adversely affect species of animals, plants or insects listed by state agencies as rare, threatened, or endangered.

## ENVIRONMENTAL IMPACTS AND MITIGATION

**1. Wetlands and Water Quality.** The EA (page 3-13) states that the proposed action would avoid all wetlands and would not result in direct impacts to wetlands.

**1(a) Agency Jurisdiction.** The State Water Control Board promulgates Virginia's water regulations covering a variety of permits to include the Virginia Pollutant Discharge Elimination System Permit regulating point source discharges to surface waters, Virginia Pollution Abatement Permit regulating sewage sludge, storage and land application of biosolids, industrial wastes (sludge and wastewater), municipal wastewater, and animal wastes, the Surface and Groundwater Withdrawal Permit, and the Virginia Water Protection (VWP) Permit regulating impacts to streams, wetlands, and other surface waters. The VWP Permit is a state permit which governs wetlands, surface water, and surface water withdrawals and impoundments. It also serves as §401 certification of the federal Clean Water Act and §404 permits for dredge and fill activities in waters of the U.S. The VWP Permit Program is under the Office of Wetlands and Stream Protection within the DEQ Division of Water Permitting. In addition to central office staff who review and issue VWP permits for transportation and

water withdrawal projects, the six DEQ regional offices perform permit application reviews and issue permits for the covered activities:

- Clean Water Act, §401;
- Section 404(b)(i) Guidelines Mitigation Memorandum of Agreement (2/90);
- State Water Control Law, Virginia Code section 62.1-44.15:20 *et seq.*; and
- State Water Control Regulations, 9VAC25-210-10.

Tidal wetlands are regulated by the Virginia Marine Resources Commission (VMRC) under the authority of Virginia Code §28.2-1301 through §28.2-1320.

**1(b) Requirements.** The DEQ Northern Regional Office (NRO) states that a VWP permit from DEQ may be required. Upon receipt of a Joint Permit Application for proposed surface water impacts, DEQ VWP Permit staff will review the proposed project in accordance with the VWP permit program regulations and current VWP permit program guidance.

**1(c) Agency Recommendations.** In general, DEQ recommends that stream and wetland impacts be avoided to the maximum extent practicable. To minimize unavoidable impacts to wetlands and waterways, DEQ recommends the following practices:

- Operate machinery and construction vehicles outside of stream-beds and wetlands; use synthetic mats when in-stream work is unavoidable.
- Preserve the top 12 inches of material removed from wetlands for use as wetland seed and root-stock in the excavated area.
- Design erosion and sedimentation controls in accordance with the most current edition of the *Virginia Erosion and Sediment Control Handbook*. These controls should be in place prior to clearing and grading, and maintained in good working order to minimize impacts to state waters. The controls should remain in place until the area is stabilized.
- Place heavy equipment, located in temporarily impacted wetland areas, on mats, geotextile fabric, or use other suitable measures to minimize soil disturbance, to the maximum extent practicable.
- Restore all temporarily disturbed wetland areas to pre-construction conditions and plant or seed with appropriate wetlands vegetation in accordance with the cover type (emergent, scrub-shrub or forested). The applicant should take all appropriate measures to promote revegetation of these areas. Stabilization and restoration efforts should occur immediately after the temporary disturbance of each wetland area instead of waiting until the entire project has been completed.
- Place all materials which are temporarily stockpiled in wetlands, designated for use for the immediate stabilization of wetlands, on mats or geotextile fabric in order to prevent entry in state waters. These materials should be managed in a

manner that prevents leachates from entering state waters and must be entirely removed within thirty days following completion of that construction activity. The disturbed areas should be returned to their original contours, stabilized within thirty days following removal of the stockpile, and restored to the original vegetated state.

- Clearly flag or mark all non-impacted surface waters within the project or right-of-way limits that are within 50 feet of any clearing, grading or filling activities for the life of the construction activity within that area. The project proponent should notify all contractors that these marked areas are surface waters where no activities are to occur.
- Employ measures to prevent spills of fuels or lubricants into state waters.

**1(d) Conclusion.** Provided a VWP Permit or approval is obtained if necessary and the requirements are met, the proposed project would be consistent to the maximum extent practicable with the wetlands management enforceable policy of the Virginia CZM Program.

**2. Subaqueous Lands.** The EA (Appendix E, FCD, page E-2) states that the project would have no foreseeable impact on subaqueous resources.

**2(a) Agency Jurisdiction.** The VMRC regulates encroachments in, on or over state-owned subaqueous beds as well as tidal wetlands pursuant to Virginia Code §28.2-1200 through 1400. For nontidal waterways, VMRC states that it has been the policy of the Habitat Management Division to exert jurisdiction only over the beds of perennial streams where the upstream drainage area is 5 square miles or greater. The beds of such waterways are considered public below the ordinary high water line.

**2(b) Agency Findings.** VMRC did not respond to DEQ's request for comments.

**2(c) Conclusion.** As proposed, the project would be consistent to the maximum extent practicable with the subaqueous lands management enforceable policy of the Virginia CZM Program.

**3. Air Pollution Control.** The EA (Appendix E, FCD, page E-3) states that the proposed project would create temporary and minor impacts to air quality during construction.

**3(a) Agency Jurisdiction.** The DEQ Air Division, on behalf of the State Air Pollution Control Board, is responsible for developing regulations that implement Virginia's Air Pollution Control Law (Virginia Code §10.1-1300 *et seq.*). DEQ is charged with carrying out mandates of the state law and related regulations as well as Virginia's federal obligations under the Clean Air Act as amended in 1990. The objective is to protect and enhance public health and quality of life through control and mitigation of air pollution.

The division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement strategies to protect Virginia's air quality. The appropriate DEQ regional office is directly responsible for the issuance of necessary permits to construct and operate all stationary sources in the region as well as monitoring emissions from these sources for compliance. As a part of this mandate, environmental impact reviews (EIRs) of projects to be undertaken in the state are also reviewed. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

The Air Division regulates emissions of air pollutants from industries and facilities and implements programs designed to ensure that Virginia meets national air quality standards. The most common regulations associated with projects are:

- Open burning: 9VAC5-130 *et seq.*
- Fugitive dust control: 9VAC5-50-60 *et seq.*
- Permits for fuel-burning equipment: 9VAC5-80-1100 *et seq.*

**3(b) Ozone Nonattainment Area.** According to the DEQ Air Division, the project site is located in an ozone nonattainment area and an emission control area for volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>), which are contributors to ozone pollution.

**3(c) Requirements.** The following requirements may be applicable to the proposed project.

**3(c)(i) Fugitive Dust.** During land-disturbing activities, fugitive dust must be kept to a minimum by using control methods outlined in 9VAC5-50-60 *et seq.* of the Regulations for the Control and Abatement of Air Pollution. These precautions include, but are not limited to, the following:

- Use, where possible, of water or suitable chemicals for dust control during the proposed demolition and construction operations and from material stockpiles;
- Installation and use of hoods, fans and fabric filters to enclose and vent the handling of dusty materials;
- Covering of open equipment for conveying materials; and
- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.

**3(c)(ii) Open Burning.** If project activities change to include the burning of vegetative debris, this activity must meet the requirements under 9VAC5-130 *et seq.* of the regulations for open burning, and it may require a permit. The regulations provide for,

but do not require, the local adoption of a model ordinance concerning open burning. Contact officials with the locality to determine what local requirements, if any, exist.

**3(c)(iii) Fuel-Burning Equipment.** Fuel-burning equipment (generators, compressors, etc.) or any other air-pollution-emitting equipment may be subject to registration or permitting requirements.

**3(d) Conclusion.** Provided the project adheres to any applicable requirements, the project would be consistent to the maximum extent practicable with the air pollution control enforceable policy of the Virginia CZM Program.

**4. Coastal Lands Management.** The EA (Appendix C, FCD, page E-3) states that areas analogous to Resource Protection Areas (RPA) are associated with Dogue Creek and its tidal wetlands. Minor short-term adverse impacts are anticipated. Best Management Practices (BMPs) will be implemented.

**4(a) Agency Jurisdiction.** The DEQ Local Government Assistance Programs (LGAP) administers the Chesapeake Bay Preservation Act (Virginia Code §62.1-44.15:67 *et seq.*) (Bay Act) and Chesapeake Bay Preservation Area Designation and Management Regulations (9VAC25-830-10 *et seq.*). Each Tidewater locality must adopt a program based on the Chesapeake Bay Preservation Act and the Chesapeake Bay Preservation Area Designation and Management Regulations. The Act and regulations recognize local government responsibility for land use decisions and are designed to establish a framework for compliance without dictating precisely what local programs must look like. Local governments have flexibility to develop water quality preservation programs that reflect unique local characteristics and embody other community goals. Such flexibility also facilitates innovative and creative approaches in achieving program objectives. The regulations address nonpoint source pollution by identifying and protecting certain lands called Chesapeake Bay Preservation Areas. The regulations use a resource-based approach that recognizes differences between various land forms and treats them differently.

**4(b) Chesapeake Bay Preservation Area.** In Fairfax County, the areas protected by the Chesapeake Bay Preservation Act (CBPA), as locally implemented, require conformance with performance criteria. These areas include Resource Protection Areas (RPAs) and Resource Management Areas (RMAs) as designated by the local governments. RPAs include tidal wetlands, certain non-tidal wetlands, and tidal shores. RPAs also include a 100-foot vegetated buffer area located adjacent to and landward of these features and along both sides of any water body with perennial flow. RMAs, which require less stringent performance criteria than RPAs, are designated jurisdiction-wide in Fairfax County and include all lands not designated as RPA.

**4(c) Agency Findings.** DEQ LGAP states that Figure 3-1 (page 3-10: *Wetlands and Resource Protection Areas*) shows that the project site includes lands analogous to locally designated RPA.

**4(d) Requirements.** Section 9VAC25-830-140 of the Regulations describes development (and redevelopment) criteria for RPAs. Land development similar to the proposed action may be allowed in the RPA only if it is water-dependent, constitutes redevelopment, and/or is a road or driveway crossing through a RPA that satisfies 9VAC25-830-140 1 (d) of the Regulations. 9VAC25-830-150 B 1 exempts the construction, installation, operation, and maintenance of public roads and their appurtenant structures. This exemption extends to public roadway bridges.

Federal actions on installations located within Tidewater Virginia are required to be consistent with the performance criteria of the Regulations on lands analogous to locally designated RPAs and RMAs, as provided in 9VAC25-830-130 and 140 of the Regulations, including compliance with the requirements of the *Virginia Erosion and Sediment Control Handbook*, and stormwater management criteria consistent with water quality protection provisions of the *Virginia Stormwater Management Regulations*. For land disturbance over 2,500 square feet, the project must comply with the requirements of the *Virginia Erosion and Sediment Control Handbook*. 9VAC25-830-130 of the Regulations specifically requires all proposed land development activities to meet the following three specific performance criteria: 1) no more land shall be disturbed than is necessary to provide for the proposed use or development; 2) indigenous vegetation shall be preserved to the maximum extent practicable, consistent with the use or development proposed; and 3) land development shall minimize impervious cover consistent with the proposed use or development.

**4(e) Conclusion.** Provided adherence to the above requirements, the proposed activity would be consistent to the maximum extent practicable with the coastal lands management enforceable policy of the Virginia CZM Program.

**5. Erosion and Sediment Control and Stormwater Management.** According to the EA (Appendix E, FCD, page E-2), temporary erosion and sediment control measures and stormwater Best Management Practices (BMPs) would be employed to minimize impacts to water quality.

**5(a) Agency Jurisdiction.** The DEQ Office of Stormwater Management (OSM) administers the following laws and regulations governing construction activities:

- Virginia Erosion and Sediment Control Law (VESCL) (§ 62.1-44.15:51 *et seq.*) and Regulations (VESCL&R) (9VAC25-840);
- Virginia Stormwater Management Act (VSMA) (§ 62.1-44.15:24 *et seq.*);

- Virginia Stormwater Management Program (VSMP) regulation (9VAC25-870); and
- 2014 General Virginia Pollutant Discharge Elimination System (VPDES) Permit for Discharges of Stormwater from Construction Activities (9VAC25-880).

In addition, DEQ is responsible for the VSMP General Permit for Stormwater Discharges from Construction Activities related to Municipal Separate Storm Sewer Systems (MS4s) and construction activities for the control of stormwater discharges from MS4s and land disturbing activities under the Virginia Stormwater Management Program (9VAC25-890-40).

### **5(b) Requirements.**

**5(b)(i) Erosion and Sediment Control and Stormwater Management Plans.** The applicant and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with VESCL&R and VSMA and regulations, including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater than 2,500 square feet in Chesapeake Bay Preservation Area would be regulated by VESCL&R. Accordingly, the applicant must prepare and implement an erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. Land-disturbing activities that result in the total land disturbance of equal to or greater than 1 acre (2,500 square feet in Chesapeake Bay Preservation Area) would be regulated by VSMA and regulations. Accordingly, the applicant must prepare and implement a Stormwater Management (SWM) plan to ensure compliance with state law and regulations. The ESC/SWM plan is submitted to the DEQ regional office that serves the area where the project is located for review for compliance. The applicant is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy (Reference: VESCL 62.1-44.15 *et seq.*).

**5(b)(ii) General Permit for Stormwater Discharges from Construction Activities (VAR10).** The operator or owner of a construction project involving land-disturbing activities equal to or greater than one acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project-specific SWPPP. The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the VSMP Permit Regulations. General information and registration forms for the General Permit are available on

DEQ's website at <http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx> (Reference: VSMA 62.1-44.15 *et seq.*; VSMP Permit Regulations 9VAC 25-880 *et seq.*).

**5(c) Conclusion.** Provided the above requirements are satisfied, the project would be consistent to the maximum extent practicable with the nonpoint pollution control enforceable policy of the Virginia CZM Program.

**6. Solid and Hazardous Waste Management.** The EA (page 3-27) states that the proposed action would cause minor short-term adverse impacts from disturbance of lead-based paint (LBP) on the bridge. Best Management Practices (BMPs) would minimize human health and environmental impacts. Small sections of LBP would be safely removed in the areas that would be disturbed for disassembly (i.e. paint around existing bolts and steel to be cut as parts of the disassembly process).

**6(a) Agency Jurisdiction.** On behalf of the Virginia Waste Management Board, the DEQ Division of Land Protection and Revitalization is responsible for carrying out the mandates of the Virginia Waste Management Act (Virginia Code §10.1-1400 *et seq.*), as well as meeting Virginia's federal obligations under the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response Compensation Liability Act (CERCLA), commonly known as Superfund. The DEQ Division of Land Protection and Revitalization also administers those laws and regulations on behalf of the State Water Control Board that govern Petroleum Storage Tanks (Virginia Code §62.1-44.34:8 *et seq.*), including Aboveground Storage Tanks (9VAC25-91 *et seq.*) and Underground Storage Tanks (9VAC25-580 *et seq.* and 9VAC25-580-370 *et seq.*), also known as Virginia Tank Regulations, and § 62.1-44.34:14 *et seq.* which covers oil spills. Virginia:

- Virginia Waste Management Act, Virginia Code § 10.1-1400 *et seq.*
- Virginia Solid Waste Management Regulations, 9VAC20-81
  - (9VAC20-81-620 applies to asbestos-containing materials)
- Virginia Hazardous Waste Management Regulations, 9VAC20-60
  - (9VAC20-60-261 applies to lead-based paints)
- Virginia Regulations for the Transportation of Hazardous Materials, 9VAC20-110.

Federal:

- Resource Conservation and Recovery Act (RCRA), 42 U.S. Code sections 6901 *et seq.*
- U.S. Department of Transportation Rules for Transportation of Hazardous Materials, 49 Code of Federal Regulations, Part 107
- Applicable rules contained in Title 40, Code of Federal Regulations.

**6(b) Database Search.** The DEQ Division of Land Protection and Revitalization (DLPR) conducted a search (500-foot radius) of the project area of solid and hazardous waste databases (including petroleum releases) to identify waste sites in close proximity to the project area. DLPR identified one petroleum release site within the project area which might impact the project: PC Number 20023021, Fort Belvoir – Building 01695, Telegraph Rd and Potomac River, Fort Belvoir, Virginia 22060, Release Date: 07/06/2001, Status: Closed.

**6(c) Agency Recommendations.** Evaluate the identified petroleum release to determine its ability to affect the project site. DEQ encourages all projects to implement pollution prevention principles, including:

- the reduction, reuse and recycling of all solid wastes generated; and
- the minimization and proper handling of generated hazardous wastes.

**6(d) Requirements.**

- Test and dispose of any soil/sediment that is suspected of contamination (including petroleum contamination) or wastes that are generated during construction-related activities in accordance with applicable federal, state, and local laws and regulations.
- All structures being demolished or removed should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM and LBP are found, in addition to the federal waste-related regulations mentioned above, state regulations 9VAC20-81-640 for ACM and 9VAC20-60-261 for LBP must be followed.

**7. Natural Heritage Resources.** The EA (page 3-16) states that minor short-term adverse vegetation impacts would be expected from the trimming of trees within the project areas.

**7(a) Agency Jurisdiction.**

**7(a)(i) The Virginia Department of Conservation and Recreation's (DCR) Division of Natural Heritage (DNH):** DNH's mission is conserving Virginia's biodiversity through inventory, protection and stewardship. The Virginia Natural Area Preserves Act (Virginia Code §10.1-209 through 217), authorized DCR to maintain a statewide database for conservation planning and project review, protect land for the conservation of biodiversity, and to protect and ecologically manage the natural heritage resources of Virginia (the habitats of rare, threatened and endangered species, significant natural communities, geologic sites, and other natural features).

**7(a)(ii) The Virginia Department of Agriculture and Consumer Services (VDACS):** The Endangered Plant and Insect Species Act of 1979 (Virginia Code Chapter 39 §3.1-1020 through 1030) authorizes VDACS to conserve, protect and manage endangered and threatened species of plants and insects. Under a Memorandum of Agreement established between VDACS and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species.

**7(b) Agency Findings – Natural Heritage Resources and Forest Fragmentation.** According to the information currently in the Biotics Data System, natural heritage resources have not been documented within the submitted project boundary, including a 100-foot buffer. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. In addition, the project boundary does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

**7(c) Agency Findings – State-listed Plant and Insect Species.** DCR states that the proposed project will not affect any documented state-listed plants or insects.

**7(d) Agency Findings – Natural Area Preserves.** There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

**7(e) Agency Recommendations.** Contact the DCR DNH and re-submit project information and a map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

**8. Floodplain Management.** The EA (page 3-13) states that the proposed action is located within the 100-year floodplain but would not result in an impact to the floodplain with regard to water storage capacity or elevation.

**8(a) Agency Jurisdiction.** DCR is the lead coordinating agency for the Commonwealth's floodplain management program and the National Flood Insurance Program (Executive Memorandum 2-97). Pursuant to §10.1-603 of the Virginia Code and in accordance with 44 CFR section 60.12 of the National Flood Insurance Program Regulations for Floodplain Management and Flood Hazard Identification, all construction or land-disturbing activities initiated by an agency of the Commonwealth, or by its contractor, in floodplains shall be submitted to the locality and comply with the locally adopted floodplain management ordinance.

**8(b) Agency Recommendation.** For federal projects, DCR encourages the applicant/developer to reach out to the local floodplain administrator and comply with the community's local floodplain ordinance. If the project is located in the Special Flood Hazard Area (SFHA), DCR recommends that this project comply with the community's

local floodplain ordinance. To find flood zone information, use the Virginia Flood Risk Information System (VFRIS): [www.dcr.virginia.gov/vfris](http://www.dcr.virginia.gov/vfris).

**8(c) Requirement.** Projects conducted by federal agencies within the SFHA must comply with Executive Order 11988: Floodplain Management.

**9. Water Supply.** The EA (page 3-2) states that groundwater resources would not be disturbed. Water supply resources are not otherwise addressed.

**9(a) Agency Jurisdiction.** The Virginia Department of Health (VDH) Office of Drinking Water (ODW) reviews projects for the potential to impact public drinking water sources (groundwater wells, springs and surface water intakes). The VDH ODW administers both federal and state laws governing waterworks operation.

**9(b) Agency Finding.** VDH states that there are no apparent impacts on public drinking water sources due to this project.

**9(c) Requirement.** Potential impacts to public water distribution systems must be verified by the local utility, according to VDH.

**10. Historic Resources.** The EA (page 3-22) states that Fort Belvoir has been coordinating with the State Historic Preservation Office.

**10(a) Agency Jurisdiction.** The Virginia Department of Historic Resources (DHR) conducts reviews of both federal and state projects to determine their effect on historic properties. Under the federal process, DHR is the State Historic Preservation Office, and ensures that federal undertakings – including licenses, permits, or funding – comply with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulation at 36 CFR Part 800. Section 106 requires federal agencies to consider the effects of federal projects on properties that are listed or eligible for listing on the National Register of Historic Places.

**10(b) Agency Findings.** DHR states that Fort Belvoir has consulted with DHR on this undertaking pursuant to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR Part 800. DHR concurred with the Army the undertaking will have an adverse effect on the historic Dogue Creek Bridge, a property eligible for listing in the National Register of Historic Places, on June 6, 2019.

DHR reviewed and commented on a draft Memorandum of Agreement (MOA) for the undertaking on October 29, 2019. Since then, DHR has not seen a revised draft MOA for further comment or signature. As a consequence, Section 106 for this undertaking has not concluded.

**10(c) Agency Recommendation.** DHR recommends that the Army of its responsibility to conclude the Section 106 process for this undertaking by providing DHR a final MOA for DHR's signature.

**11. Pesticides and Herbicides.** In general, when pesticides or herbicides must be used, their use should be strictly in accordance with manufacturers' recommendations. In addition, we recommend that the applicable use the least toxic pesticides or herbicides effective in controlling the target species to the extent feasible. For more information on pesticide or herbicide use, contact VDACS (804-371-6560).

**12. Energy Conservation.** Architectural and engineering designers should consider incorporating the energy, environmental, and sustainability concepts listed in the Leadership in Energy and Environmental Design (LEED) Green Building Rating System into the development and procurement of their projects.

Please contact Department of Mines, Minerals and Energy (David Spears at 434-951-6350) for additional information on energy conservation measures. For more information on the LEED rating system, visit [www.leedbuilding.org](http://www.leedbuilding.org).

**13. Pollution Prevention.** DEQ advocates that principles of pollution prevention and sustainability be used in all construction projects as well as in facility operations. Effective siting, planning, and on-site Best Management Practices (BMPs) will help to ensure that environmental impacts are minimized. However, pollution prevention and sustainability techniques also include decisions related to construction materials, design, and operational procedures that will facilitate the reduction of wastes at the source.

**13(a) Recommendations.** We have several pollution prevention recommendations that may be helpful in constructing or operating this facility:

- Consider development of an effective Environmental Management System (EMS). An effective EMS will ensure that the proposed facility is committed to complying with environmental regulations, reducing risk, minimizing environmental impacts, setting environmental goals, and achieving improvements in its environmental performance. DEQ offers EMS development assistance and recognizes facilities with effective Environmental Management Systems through its Virginia Environmental Excellence Program (VEEP). VEEP provides recognition, annual permit fee discounts, and the possibility for alternative compliance methods.
- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level, and amount of packaging should be considered and can be specified in purchasing contracts.

- Consider contractors' commitment to the environment when choosing contractors. Specifications regarding raw materials and construction practices can be included in contract documents and requests for proposals.
- Choose sustainable materials and practices for building construction and design.

DEQ's Office of Pollution Prevention provides information and technical assistance relating to pollution prevention techniques and EMS. If interested, please contact DEQ (Meghann Quinn at 804-698-4021).

**14. Transportation Impacts.** The EA (page 1-4) states that proposed repairs to the bridge would address safety deficiencies.

**14(a) Agency Jurisdiction.** The Virginia Department of Transportation (VDOT) provides comments pertaining to potential impacts to existing and future transportation systems.

**14(b) Agency Findings.** VDOT states that since the bridge is located on a section of roadway not maintained by VDOT, a Land Use Permit would not be required for the work. VDOT currently does not have any permits on the state-maintained roadways near this location that would conflict with any detours this project may request.

**14(c) Requirements.** If the closure of the bridge will require maintenance of traffic and detours on state-maintained roadways, then a VDOT permit would be required. This request must include submission of maintenance of traffic and detours plans to be reviewed by VDOT.

**15. Fisheries Management and Wildlife Resources.** The EA (Appendix E, FCD, page E-2) states that the proposed action has no foreseeable impacts on fish or shellfish resources.

**15(a) Agency Jurisdiction.** The Virginia Department of Game and Inland Fisheries (DGIF), as the Commonwealth's wildlife and freshwater fish management agency, exercises enforcement and regulatory jurisdiction over wildlife and freshwater fish, including state- or federally-listed endangered or threatened species, but excluding listed insects (Virginia Code, Title 29.1). DGIF is a consulting agency under the U.S. Fish and Wildlife Coordination Act (16 U.S. Code §661 *et seq.*) and provides environmental analysis of projects or permit applications coordinated through DEQ and several other state and federal agencies. DGIF determines likely impacts upon fish and wildlife resources and habitat, and recommends appropriate measures to avoid, reduce or compensate for those impacts. For more information, see the DGIF website at [www.dgif.virginia.gov](http://www.dgif.virginia.gov).

**15(b) Agency Findings.** DGIF states that this project does not currently propose instream work in Dogue Creek.

DGIF documents state-listed endangered Tri-colored Bats and state-listed threatened wood turtles from the project site.

Dogue Creek, upstream of this project location, has been designated a Threatened and Endangered Species Water due to the presence of wood turtles. DGIF understands that a wood turtle habitat assessment was performed on site. However, DGIF cannot locate that assessment in the documents provided.

Dogue Creek and waters downstream have been designated Confirmed Anadromous Fish Use Areas.

This project site is located within close proximity of historic and/or active bald eagle nests.

**15(c) Agency Recommendations.**

To best protect listed bats from harm associated with tree removal, trimming, timbering, DGIF recommends that such activities adhere to a time-of-year restriction from April 1 through October 31 of any year.

DGIF recommends that the Army provide the wood turtle habitat assessment for Dogue Creek be provided to DGIF for review so that DGIF can concur that the project is not likely to result in adverse impacts upon them. Until DGIF is in receipt of this information, DGIF must recommend that all activities in naturally vegetated uplands or wetlands located within 900 feet of Dogue Run adhere to a time-of-year restriction from April 1 through September 30 of any year.

If any instream work becomes necessary, DGIF recommends additional coordination with regarding potential impacts upon wood turtles. DGIF also recommends that prior to the commencement of work all contractors associated with work at this site be made aware of the possibility of encountering wood turtles on site and become familiar with their appearance, status and life history. An appropriate information sheet / field observation form to distribute to contractors and employees is attached. If any wood turtles are encountered and are in jeopardy during the development or construction of this project, remove them from immediate harm and contact DGIF. If staff on site hold an appropriate Threatened and Endangered Species Scientific Collection Permit, this staff member may relocate wood turtles out of harm's way and into suitable habitat, preferably within the nearest perennial stream. Any relocations should be reported to DGIF. Further information about wood turtles can be found online at: <https://www.dgif.virginia.gov/wildlife/information/wood-turtle/>.

If any instream work becomes necessary, coordinate with DGIF regarding potential impacts upon anadromous fishes.

To ensure protection of bald eagles in compliance with the Bald and Golden Eagle Act, DGIF recommends using the Center for Conservation Biology (CCB) [Eagle Nest Locator](#) to determine if any active eagle nests are known from the project area. If active bald eagle nests have been documented from the project area, DGIF recommends that the project move forward in a manner consistent with [state and federal guidelines for protection of bald eagles](#) and coordination, as indicated, with the U.S. Fish and Wildlife Service regarding possible impacts upon bald eagles or the need for a federal bald eagle take permit.

DGIF recommends adherence to the installation's currently approved Integrated Natural Resources Management Plan.

To minimize the adverse impacts of linear utility/road project development on wildlife resources, DGIF has the following recommendations regarding development activities:

- Avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable.
- Maintain undisturbed naturally vegetated buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial and intermittent streams.
- Maintain wooded lots to the fullest extent possible.
- Conduct significant tree removal and ground clearing activities outside of the primary songbird nesting season of March 15 through August 15.
- Implement and maintain appropriate erosion and sediment controls throughout project construction and site restoration.
- To minimize potential wildlife entanglements resulting from use of synthetic/plastic erosion and sediment control matting, use matting made from natural/organic materials such as coir fiber, jute, and/or burlap.

**15(d) Conclusion.** Assuming adherence to erosion and sediment controls, the proposed project would be consistent to the maximum extent practicable with the fisheries management enforceable policy of the Virginia CZM Program.

**16. Local Coordination.** As customary, DEQ invited the affected locality and planning district commission to comment.

**16(a) Jurisdiction.** DEQ distributes a copy of environmental documents to the chief administrative officer of every locality in which each project is proposed to be located. The purpose of the distribution is to enable the locality to evaluate the proposed project

for environmental impact, consistency with the locality's comprehensive plan, local ordinances adopted pursuant to this chapter, and other applicable law and to provide the locality with an opportunity to comment.

**16(b) Local Recommendations.** Additional information from the county is attached. Fairfax County has the following recommendations:

- Fairfax County requests that the Army follow the floodplain management requirements contained in Fairfax County Zoning Ordinance, Article 2, Part 9, Floodplain Regulations and notify the county of any floodplain changes that might impact Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps.
- Fairfax County asks that the Army consider the County's Chesapeake Bay Preservation Ordinance as described in Chapter 118 of the County Code, including conformance with the requirements for areas designated as RPAs and RMAs.
- It is recommended that project staff coordinate with the county Department of Public Works and Environmental Services regarding mitigation procedures. Additionally, staff recommends that the Army schedule briefings before the Fairfax County Wetlands Board regarding any proposed actions affecting tidal wetlands, freshwater wetlands, and floodplains, to include project impacts and remediation measures.
- Fairfax County is aware of a hydrologic study that VDOT performed as part of the Route 1 Corridor Improvement Project. It is recommended that the Army coordinate with VDOT to ensure the latest/best available data be used to evaluate the stream flows for Dogue Creek. The latest study performed by VDOT may show a change in stream flow that may impact the FEMA Flood Insurance Study published flow and related base flood elevations.
- It is recommended that this project protect against removal of as much vegetation as possible. Replanting for areas that may have been disturbed during construction should utilize native plant species.
- The Army has committed to using erosion and sediment control features. It is further recommended that a variety of filters, sediment blankets and silt fencing be used and maintained throughout the project as recommended by engineers on-site and from the manufacturers.
- This proposed project is located within the Fairfax County Woodlawn Historic Overlay District. The Fairfax County Architectural Review Board provided comments and requested that the Army consider using a gray paint color for the new bridge.
- The Fairfax County Park Authority requested that the attached Archaeological Survey Data Form be completed within 30 days of May 20, 2020.

## REGULATORY AND COORDINATION NEEDS

**1. Wetlands and Water Quality.** If surface waters, including wetlands, are proposed to be affected, the project must adhere to the requirements of any DEQ permit or authorization issued pursuant to Virginia Code § 62.1-44.15:20 *et seq.* and 9VAC25-210 *et seq.* A VWP Permit or approval may be required. Contact DEQ NRO (Trisha Beasley at [Trisha.Beasley@deq.virginia.gov](mailto:Trisha.Beasley@deq.virginia.gov)) for coordination. Submit a JPA application to VMRC (Mark Eversole at [Mark.Eversole@mrc.virginia.gov](mailto:Mark.Eversole@mrc.virginia.gov)) for proposed impacts to surface waters, including wetlands.

**2. Air Quality.** The following sections of Virginia Administrative Code may be applicable:

- fugitive dust and emissions control (9VAC5-50-60 *et seq.*);
- permits for fuel-burning equipment (9VAC5-80-110 *et seq.*); and
- open burning restrictions (9VAC5-130 *et seq.*).

Contact DEQ NRO (Justin Wilkinson at [Justin.Wilkinson@deq.virginia.gov](mailto:Justin.Wilkinson@deq.virginia.gov)) for additional information about air quality regulations and to determine air permitting or registration needs for fuel-burning equipment.

**3. Coastal Lands Management.** The project must be conducted in a manner that is consistent with the coastal lands management enforceable policy of the Virginia CZM Program as administered by DEQ pursuant to the Chesapeake Bay Preservation Act (Virginia Code 62.1-44.15 *et seq.*) and the Chesapeake Bay Preservation Area Designation and Management Regulations (9VAC25-830 *et seq.*). Coordinate with the locality for project-specific questions. For additional information about DEQ's comments, contact DEQ OLGP (Daniel Moore at [Daniel.Moore@deq.virginia.gov](mailto:Daniel.Moore@deq.virginia.gov)).

**4. Erosion and Sediment Control and Stormwater Management.** This project must comply with Virginia's Erosion and Sediment Control Law (Virginia Code § 62.1-44.15:61) and Regulations (9VAC25-840-30 *et seq.*) and Stormwater Management Law (Virginia Code § 62.1-44.15:31) and Regulations (9VAC25-870-210 *et seq.*) as administered by DEQ. Erosion and sediment control, and stormwater management requirements should be coordinated with the DEQ NRO (Kelly Vanover at [Kelly.Vanover@deq.virginia.gov](mailto:Kelly.Vanover@deq.virginia.gov)).

**5. General Permit for Stormwater Discharges from Construction Activities (VAR10).** The operator or owner of a construction activity involving land disturbance of equal to or greater than 1 acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project specific stormwater pollution prevention plan (SWPPP). Specific questions regarding

the Stormwater Management Program requirements should be directed to DEQ (Holly Sepety at 804-698-4039) (Reference: VSMA §62.1-44.15 *et seq.*).

**6. Solid and Hazardous Wastes.** Contact DEQ NRO (Richard Doucette at 703-583-3813 or Richard.Doucette@deq.virginia.gov) for additional information about waste management if necessary. All solid waste, hazardous waste and hazardous materials must be managed in accordance with all applicable federal, state and local environmental regulations.

**6(a) Asbestos-Containing Material.** It is the responsibility of the owner or operator of a renovation or demolition activity, prior to the commencement of the renovation or demolition, to thoroughly inspect the affected part of the facility where the operation will occur for the presence of asbestos, including Category I and Category II nonfriable asbestos-containing material (as applicable). Upon classification as friable or non-friable, all asbestos-containing material shall be disposed of in accordance with the Virginia Solid Waste Management Regulations (9VAC20-81-640) and transported in accordance with the Virginia regulations governing Transportation of Hazardous Materials (9VAC20-110-10 *et seq.*). Contact the DEQ Division of Land Protection and Revitalization (Carlos Martinez at 804-698-4575) and the Department of Labor and Industry (804-371- 2327) for additional information.

**6(b) Lead-Based Paint.** If applicable, this project must comply with the U.S. Department of Labor Occupational Safety and Health Administration (OSHA) regulations and with the Virginia Lead-Based Paint Activities Rules and Regulations. For additional information regarding these requirements, contact the Department of Professional and Occupational Regulation (804-367-8500).

**7. Natural Heritage Resources.** Contact the DCR DNH (804-371-2708) to re-submit project information and a map for an update on natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

**8. Fisheries Management and Wildlife Resources.** Contact DGIF (Amy Ewing at Amy.Ewing@dgif.virginia.gov) for additional information about its comments and recommendations as necessary.

If any wood turtles are encountered and are in jeopardy during the development or construction of this project, remove them from immediate harm and call DGIF's Herpetologist, John (J.D.) Kleopfer at 804-829-6703. Any relocations should be reported to J.D. Kleopfer and the wood turtle observation form should be completed and faxed to 804-829-6788.

**9. Water Supply.** Potential impacts to public water distribution systems must be verified by the local utility, according to VDH. Contact VDH (Arlene Warren at

Arlene.Warren@vdh.virginia.gov) for additional information about its comments if necessary.

**10. Floodplain Management.** Contact the local floodplain administrator for an official floodplain determination, and if the project is located in the SFHA, consider complying with the community's local floodplain ordinance. To find local floodplain administrator contact information, use DCR's Local Floodplain Management Directory: [www.dcr.virginia.gov/dam-safety-and-floodplains/floodplain-directory](http://www.dcr.virginia.gov/dam-safety-and-floodplains/floodplain-directory).

**11. Transportation Impacts.** Coordinate with VDOT (Cina Dabestani at 703-259-2991 or [Cina.Dabastani@vdot.virginia.gov](mailto:Cina.Dabastani@vdot.virginia.gov)) regarding required permits.

**12. Local Coordination.** Coordinate with Fairfax County (Katie Hermann at [Katherine.Hermann@fairfaxcounty.gov](mailto:Katherine.Hermann@fairfaxcounty.gov)) regarding its comments and recommendations as necessary.

Thank you for the opportunity to comment on this EA and FCD. The detailed comments of reviewers are attached. If you have questions, please do not hesitate to call me at (804) 698-4204 or Julia Wellman at (804) 698-4326.

Sincerely,



Bettina Rayfield, Manager  
Environmental Impact Review and Long Range  
Priorities Program

Enclosures

ec: Amy Ewing, DGIF  
Robbie Rhur, DCR  
Arlene Warren, VDH  
Roger Kirchen, DHR  
Mark Eversole, VMRC  
Heather Williams, VDOT  
Robert Lazaro, NRVC  
Bryan J. Hill, Fairfax County



Wellman, Julia <julia.wellman@deq.virginia.gov>

---

## ARMY Dogue Creek Bridge Rehab, DEQ #20-066F

1 message

---

**Dabestani, Cina** <cina.dabestani@vdot.virginia.gov>

Wed, May 20, 2020 at 12:02 PM

To: Julia Wellman <Julia.Wellman@deq.virginia.gov>

Cc: rr EIR Coordination <eir.coordination@vdot.virginia.gov>, "Trivedi, Rahul" <rahul.trivedi@vdot.virginia.gov>

Ms. Wellman-

Thank you for the opportunity to review and provide comments on the subject project. Since the bridge is located on a section of roadway not maintained by VDOT a Land Use Permit would not be required for the work.

However, if the closure of the bridge will require Maintenance of Traffic (MOT) and detours on state maintained roadways then obtaining a VDOT permit is required. This request must include submission of MOT/Detour plans to be reviewed by Traffic Engineering.

Please note that we currently do not have any permits on the state maintained roadways near this location that would conflict with any detours this project may request.

Should you have any questions on this response, please let me know.

--

**Thank you,**  
**Cina S. Dabestani**  
**Sr. Transportation Engineer**  
**Transportation Planning**  
**Virginia Department of Transportation**  
**703 . 259 . 2991**  
**[Cina.Dabestani@VDOT.Virginia.GOV](mailto:Cina.Dabestani@VDOT.Virginia.GOV)**



Please consider the environment before printing this email





# County of Fairfax, Virginia

---

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

May 20, 2020

Ms. Julia Wellman  
Department of Environment Quality  
Office of Environmental Impact Review  
P.O. Box 1105  
Richmond, VA 23218

RE: Scoping Request – Dogue Creek Bridge Rehabilitation, US Army Garrison Fort Belvoir  
DEQ #20-066F

Dear Ms. Wellman:

Thank you for the opportunity to comment on the scope of study for the draft Environmental Impact Statement (EIS) pursuant to the proposed Dogue Creek Bridge Rehabilitation in Fort Belvoir. It is our understanding from your submission that this project involves removing and replacing the bridge's superstructure but that the substructure will remain in place. A 30-foot crane will be placed on Mount Vernon Road and will be used to complete the removal and replacement of the superstructure.

In collaboration with the Department of Public Works and Environmental Services (DPWES), the Fairfax County Department of Transportation (FCDOT) and the Fairfax County Park Authority (FCPA), the Department of Planning and Development (DPD) has reviewed the documents and prepared the attached environmental conditional map (attached) for the proposed field development and offers the following comments:

## Stormwater

It should be noted that, as a federal entity, the Department of the Army is not subject to the provisions of the Fairfax County Chesapeake Bay Preservation Ordinance (CBPO) or the associated Resource Protection Areas (RPAs) generated by the county. As a result, the Army does not use the RPA maps produced by Fairfax County and, instead, delineates RPAs on its individual installations. Army's Fort Belvoir installation is spread across three watersheds, including Pohick Creek, Accotink Creek, and Dogue Creek, all of which are listed as impaired by the Virginia Department of Environmental Quality for water quality.



**PLANNING & DEVELOPMENT**

---

## **Department of Planning and Development**

Planning Division  
12055 Government Center Parkway, Suite 730  
Fairfax, Virginia 22035-5507  
Phone 703-324-1380  
Fax 703-653-9447

[www.fairfaxcounty.gov/planning-development](http://www.fairfaxcounty.gov/planning-development)

While recognizing that the Department of the Army is not subject to the provisions of the Fairfax County CBPO, staff offers the following comments:

- Fairfax County requests that the Army follow the floodplain management requirements contained in Fairfax County Zoning Ordinance, Article 2, Part 9, Floodplain Regulations and notify the county of any floodplain changes that might impact Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps.
- Fairfax County asks that the Army consider the County's CBPO as described in Chapter 118 of the County Code, including conformance with the requirements for areas designated as RPAs and Resource Management Areas.
- It is recommended that project staff coordinate with the county Department of Public Works and Environmental Services regarding mitigation procedures. Additionally, staff recommends that the Corps schedule briefings before the Fairfax County Wetlands Board regarding any proposed actions affecting tidal wetlands, freshwater wetlands, and floodplains, to include project impacts and remediation measures.
- Fairfax County is aware of a hydrologic study that VDOT performed as part of the Route 1 Corridor Improvement Project. It is recommended that the Army coordinate with VDOT to ensure the latest/best available data be used to evaluate the stream flows for Dogue Creek. The latest study performed by VDOT may show a change in stream flow that may impact the FEMA Flood Insurance Study published flow and related base flood elevations.

#### Water Quality and Erosion

- It is recommended that this project protect against removal of as much vegetation as possible. Replanting for areas that may have been disturbed during construction should utilize native plant species.
- The Army has committed to using erosion and sediment control features. It is further recommended that a variety of filters, sediment blankets and silt fencing be used and maintained throughout the project as recommended by engineers on-site and from the manufacturers.

#### Safety

- The Army has committed to using fencing around the project area to discourage adults and any children from the nearby playgrounds from accessing the construction site. It is recommended that high-quality and durable fencing be used and maintained throughout the project as recommended by engineers on-site and from the manufacturers.

#### Historical and Archaeological Resources

- This proposed project is located within the Fairfax County Woodlawn Historic Overlay District. The Fairfax County Architectural Review Board provided comments and requested that the Army consider using a gray paint color for the new bridge.
- The Fairfax County Park Authority requested that the attached Archaeological Survey Data Form be completed within 30 days of the date of this letter.

Julia Wellman

May 20, 2020

Page 3

Thank you again for the opportunity to comment on this proposal. If you have any questions about the comments, please contact Katie Hermann with the Department of Planning and Development at [Katherine.Hermann@fairfaxcounty.gov](mailto:Katherine.Hermann@fairfaxcounty.gov).

Sincerely,

A handwritten signature in black ink that reads "Leanna H O'Donnell". The signature is written in a cursive, flowing style.

Leanna H. O'Donnell, Director, Planning Division  
Department of Planning and Development

LHO: KHH

Attachments

cc:

Board of Supervisors

Bryan J. Hill, County Executive

Rachel O'Dwyer Flynn, Deputy County Executive

Barbara Byron, Director, DPD

Denise James, Chief, Environment and Development Review, DPD

Michael Garcia, Chief, Transportation Planning, FCDOT

Catherine Torgersen, DPWES

Andrea Dorlester, FCPA

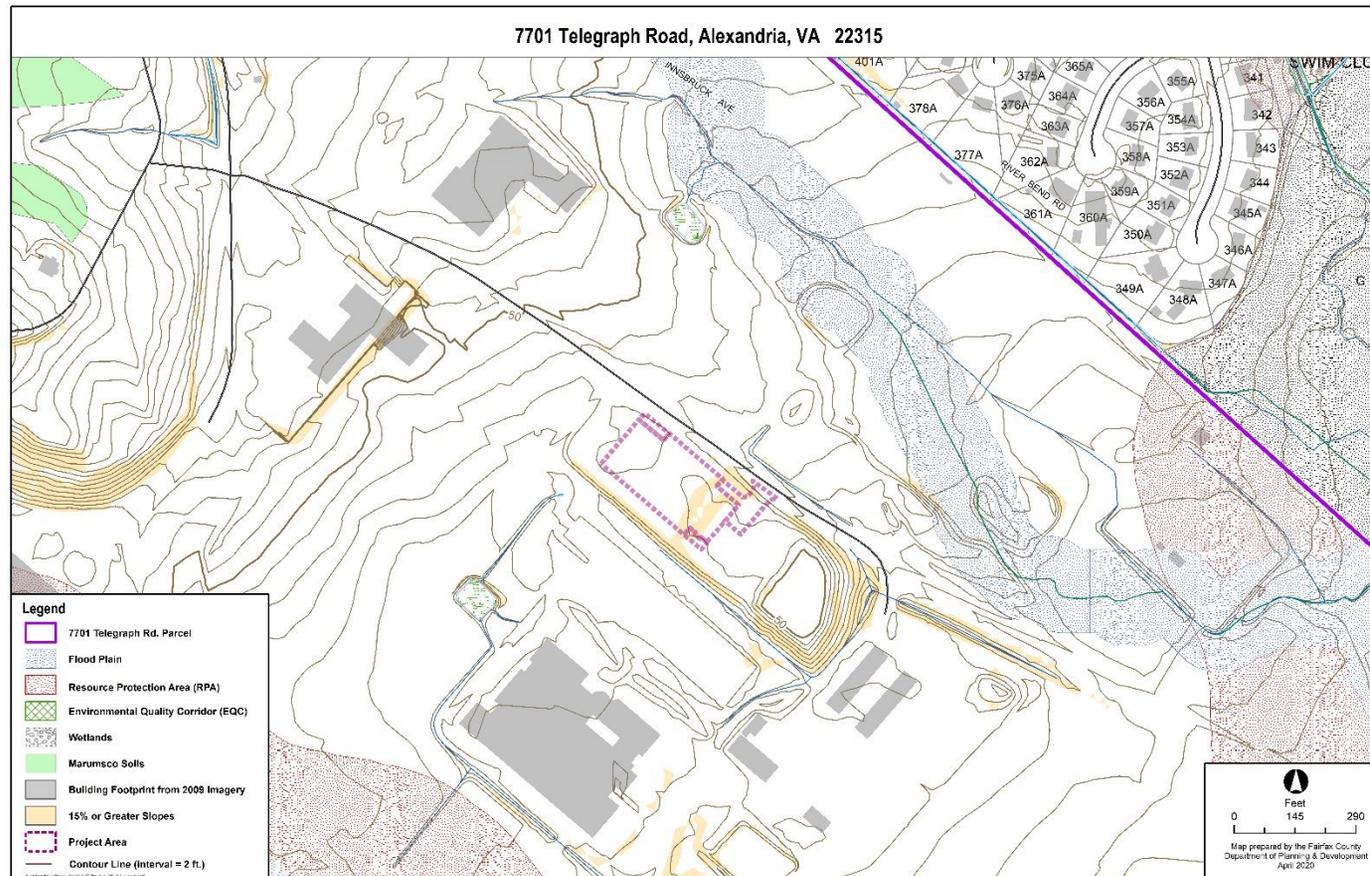
Christine Morin, Chief of Staff, BOS



# County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

## Attachment: Environmental Map



**Department of Planning and Development**  
Planning Division  
12055 Government Center Parkway, Suite 730  
Fairfax, Virginia 22035-5507  
Phone 703-324-1380  
Fax 703-653-9447  
[www.fairfaxcounty.gov/planning-development](http://www.fairfaxcounty.gov/planning-development)

## Archaeological Survey Data Form – Part A

In order to determine the existing on-site conditions, the following information must be provided to the Cultural Resource Management and Protection Section of the Fairfax County Park Authority, James Lee Community Center 2855 Annandale Road, Room 124, Falls Church, VA, 22042, prior to submission of any rezoning, development plan, special exception, special permit or variance application that involves 2500 square feet or more of land disturbing activity and where the application property is located wholly or partially within or contiguous to a Historic Overlay District. Following the County's review of available files and GIS information for the application property, a determination will be made as to the probability of the application property to yield significant archaeological resources. The Cultural Resource Management and Protection Section will reply to the applicant within fifteen (15) working days of receipt of the following required information:

<b>APPLICANT</b>	Name
	Mailing Address
	Phone Home ( )                      Work ( )                      Mobile ( )
<b>PROPERTY INFORMATION</b>	Property Address
	Tax Map and Parcel Number:                      Size (acre/sq.ft.)
	Zoning District:                      Magisterial District
	Proposed Zoning if concurrent with rezoning application:
<b>HISTORIC OVERLAY DISTRICT ARCHAEOLOGICAL SURVEY REQUEST INFORMATION</b>	Provide the following: One (1) copy of the current Fairfax County Zoning Section Sheet(s) at a scale of one inch equals five hundred feet (1" = 500'), covering the area within at least a 500 foot radius of the proposed use, showing the existing zoning classification for all land appearing on the map. If more than one (1) Zoning Section Sheet is required to cover the area, such sheets shall be attached so as to create an intelligible map. The boundaries of the subject site shall be outlined in red thereon.
	Description of the proposal including type of application and proposed use, and a graphic drawn to scale showing the dimensions of all existing buildings and their distance from property lines (attach additional sheets, as necessary):
<b>AGENT/CONTACT INFORMATION</b>	Name
	Mailing Address
	Phone Home ( )                      Work ( )                      Mobile ( )
<b>MAILING</b>	Send all correspondence to (check one): ___ Applicant or ___ Agent/Contact
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%; border-top: 1px solid black; margin-top: 10px;">Type/Print Name of Applicant</div> <div style="width: 45%; border-top: 1px solid black; margin-top: 10px;">Signature of Applicant/Agent</div> </div>	

**FOR OFFICIAL COUNTY USE ONLY**

Date all required information received: \_\_\_\_\_

No probability. No Survey Required. \_\_\_\_\_

Low probability. Survey Required (see Sect. 7-210 of the Zoning Ordinance): \_\_\_\_\_

Medium to high probability. Survey Required (see Sect. 7-210 of the Zoning Ordinance): \_\_\_\_\_

Comments (attach additional sheets, if necessary): \_\_\_\_\_

Date of response to applicant: \_\_\_\_\_

## Archaeological Survey Data Form – Part B

If the Cultural Resource Management and Protection Section of the Fairfax County Park Authority determines that a Survey is required and a report of the survey results must be submitted prior to submission of any rezoning, development plan, special exception, special permit or variance application that involves 2500 square feet or more of land disturbing activity and where the application property is located wholly or partially within or contiguous to a Historic Overlay District, then a copy of the Executive Summary contained in the report must be printed in the space below (attach additional sheets if necessary). (See Par. 6L of Sect. 7-210 of the Zoning Ordinance.)

### EXECUTIVE SUMMARY:

I certify that the above Executive Summary is a true copy of the Executive Summary contained in the Report dated \_\_\_\_\_ submitted to the Cultural Resource Section.

\_\_\_\_\_  
Type/Print Name of Applicant

\_\_\_\_\_  
Signature of Applicant/Agent and Date

### FOR OFFICIAL COUNTY USE ONLY

Date of Report submitted to the Park Authority \_\_\_\_\_

Report submitted and meets submission requirements. Staff recommendation forthcoming: \_\_\_\_\_

Matthew J. Strickler  
Secretary of Natural Resources

Clyde E. Cristman  
Director



Rochelle Altholz  
Deputy Director of  
Administration and Finance

Russell W. Baxter  
Deputy Director of  
Dam Safety & Floodplain  
Management and Soil & Water  
Conservation

Thomas L. Smith  
Deputy Director of Operations

**COMMONWEALTH of VIRGINIA**  
DEPARTMENT OF CONSERVATION AND RECREATION

**MEMORANDUM**

DATE: May 20, 2020  
TO: Julia Wellman, DEQ  
FROM: Roberta Rhur, Environmental Impact Review Coordinator  
SUBJECT: DEQ 20-066F, Bridge Rehabilitation

**Division of Natural Heritage**

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics, natural heritage resources have not been documented within the submitted project boundary including a 100 foot buffer. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. In addition, the project boundary does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from <http://vafwis.org/fwis/> or contact Ernie Aschenbach at 804-367-2733 or [Ernie.Aschenbach@dgif.virginia.gov](mailto:Ernie.Aschenbach@dgif.virginia.gov).

## Division of Dam Safety and Floodplain Management

### Floodplain Management Program:

The National Flood Insurance Program (NFIP) is administered by the Federal Emergency Management Agency (FEMA), and communities who elect to participate in this voluntary program manage and enforce the program on the local level through that community's local floodplain ordinance. Each local floodplain ordinance must comply with the minimum standards of the NFIP, outlined in 44 CFR 60.3; however, local communities may adopt more restrictive requirements in their local floodplain ordinance, such as regulating the 0.2% annual chance flood zone (Shaded X Zone).

All development within a Special Flood Hazard Area (SFHA), as shown on the locality's Flood Insurance Rate Map (FIRM), must be permitted and comply with the requirements of the local floodplain ordinance.

### State Agency Projects Only

[Executive Order 45](#), signed by Governor Northam and effective on November 15, 2019, establishes mandatory standards for development of state-owned properties in Flood-Prone Areas, which include Special Flood Hazard Areas, Shaded X Zones, and the Sea Level Rise Inundation Area. These standards shall apply to all state agencies.

1. Development in Special Flood Hazard Areas and Shaded X Zones
  - A. All development, including buildings, on state-owned property shall comply with the locally-adopted floodplain management ordinance of the community in which the state-owned property is located and any flood-related standards identified in the Virginia Uniform Statewide Building Code.
  - B. If any state-owned property is located in a community that does not participate in the NFIP, all development, including buildings, on such state-owned property shall comply with the NFIP requirements as defined in 44 CFR §§ 60.3, 60.4, and 60.5 and any flood-related standards identified in the Virginia Uniform Statewide Building Code.
    - (1) These projects shall be submitted to the Department of General Services (DGS), for review and approval.
    - (2) DGS shall not approve any project until the State NFIP Coordinator has reviewed and approved the application for NFIP compliance.
    - (3) DGS shall provide a written determination on project requests to the applicant and the State NFIP Coordinator. The State NFIP Coordinator shall maintain all documentation associated with the project in perpetuity.
  - C. No new state-owned buildings, or buildings constructed on state-owned property, shall be constructed, reconstructed, purchased, or acquired by the Commonwealth within a Special Flood Hazard Area or Shaded X Zone in any community unless a variance is granted by the Director of DGS, as outlined in this Order.

The following definitions are from Executive Order 45:

*Development for NFIP purposes is defined in 44 CFR § 59.1 as "Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials."*

*The Special Flood Hazard Area may also be referred to as the 1% annual chance floodplain or the 100-year floodplain, as identified on the effective Flood Insurance Rate Map and Flood Insurance Study. This includes the following flood zones: A, AO, AH, AE, A99, AR, AR/AE, AR/AO, AR/AH, AR/A, VO, VE, or V.*

*The Shaded X Zone may also be referred to as the 0.2% annual chance floodplain or the 500-year floodplain, as identified on the effective Flood Insurance Rate Map and Flood Insurance Study.*

*The Sea Level Rise Inundation Area referenced in this Order shall be mapped based on the National Oceanic and Atmospheric Administration Intermediate-High scenario curve for 2100, last updated in 2017, and is intended to denote the maximum inland boundary of anticipated sea level rise.*

*“State agency” shall mean all entities in the executive branch, including agencies, offices, authorities, commissions, departments, and all institutions of higher education.*

*“Reconstructed” means a building that has been substantially damaged or substantially improved, as defined by the NFIP and the Virginia Uniform Statewide Building Code.*

#### Federal Agency Projects Only

Projects conducted by federal agencies within the SFHA must comply with federal Executive Order 11988: Floodplain Management.

DCR’s Floodplain Management Program does not have regulatory authority for projects in the SFHA. The applicant/developer must reach out to the local floodplain administrator for an official floodplain determination and comply with the community’s local floodplain ordinance, including receiving a local permit. Failure to comply with the local floodplain ordinance could result in enforcement action from the locality. For state projects, DCR recommends that compliance documentation be provided prior to the project being funded. For federal projects, the applicant/developer is encouraged reach out to the local floodplain administrator and comply with the community’s local floodplain ordinance.

To find flood zone information, use the Virginia Flood Risk Information System (VFRIS): [www.dcr.virginia.gov/vfris](http://www.dcr.virginia.gov/vfris)

To find community NFIP participation and local floodplain administrator contact information, use DCR’s Local Floodplain Management Directory: [www.dcr.virginia.gov/dam-safety-and-floodplains/floodplain-directory](http://www.dcr.virginia.gov/dam-safety-and-floodplains/floodplain-directory)

The remaining DCR divisions have no comments regarding the scope of this project. Thank you for the opportunity to comment.



Wellman, Julia &lt;julia.wellman@deq.virginia.gov&gt;

---

**ESSLog# 40599\_20-066F\_DogueCreek\_DGIF\_AME20200519**

1 message

---

**Ewing, Amy** <amy.ewing@dgif.virginia.gov>  
To: Julia Wellman <julia.wellman@deq.virginia.gov>

Tue, May 19, 2020 at 3:29 PM

Julia,

We have reviewed the subject project that proposes to replace the bridge superstructure over Dogue Creek on Ft. Belvoir. This project does not currently propose instream work in Dogue Creek. As mentioned in EA/FCD for the project, we document state Endangered Tri-colored Bats and state Threatened Wood Turtles from the project site. To best protect listed bats from harm associated with tree removal/trimming/timbering, we recommend that such activities adhere to a time of year restriction from April 1 through October 31 of any year.

Dogue Creek, upstream of this project location, has been designated a Threatened and Endangered Species Water due to the presence of Wood Turtles. We understand that a Wood Turtle habitat assessment was performed on site. However, I cannot locate that assessment in the documents provided. We recommend that the habitat assessment be provided to us for review so that we can concur that the project is not likely to result in adverse impacts upon them. Until we are in receipt of this information, we must recommend that all activities in naturally vegetated uplands or wetlands located within 900 ft of Dogue Run adhere to a time of year restriction from April 1 through September 30 of any year. If any instream work becomes necessary, we recommend additional coordination with us regarding potential impacts upon Wood Turtles. We also recommend that prior to the commencement of work all contractors associated with work at this site be made aware of the possibility of encountering Wood Turtles on site and become familiar with their appearance, status and life history. An appropriate information sheet / field observation form to distribute to contractors and employees is attached. If any Wood Turtles are encountered and are in jeopardy during the development or construction of this project, remove them from immediate harm and call DGIF's Herpetologist, John (J.D.) Kleopfer at 804-829-6703. If staff on site hold an appropriate Threatened and Endangered Species Scientific Collection Permit, this staff member may relocate Wood Turtles out of harm's way and into suitable habitat, preferably within the nearest perennial stream. Any relocations should be reported to J.D. Kleopfer and the wood turtle observation form should be completed and faxed to JD at 804-829-6788.

Further information about wood turtles can be found online at: <https://www.dgif.virginia.gov/wildlife/information/wood-turtle/>

Dogue Creek and waters downstream have been designated Confirmed Anadromous Fish Use Areas. If any instream work becomes necessary, we recommend additional coordination with us regarding potential impacts upon anadromous fishes.

This project site is located within close proximity of historic and/or active bald eagle nests. To ensure protection of bald eagles in compliance with the Bald and Golden Eagle Act, we recommend using the Center for Conservation Biology (CCB) [Eagle Nest Locator](#) to determine if any active eagle nests are known from the project area. If active bald eagle nests have been documented from the project area, we recommend that the project move forward in a manner consistent with [state and federal guidelines for protection of bald eagles](#); and coordination, as indicated, with the U.S. Fish and Wildlife Service regarding possible impacts upon bald eagles or the need for a federal bald eagle take permit.

To minimize the adverse impacts of linear utility/road project development on wildlife resources, we offer the following general recommendations: Avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable; maintain naturally vegetated buffers of at least 100 feet in width around wetlands and on both sides of perennial and intermittent streams, where practicable; conduct significant tree removal and ground clearing activities outside of the primary songbird nesting season of March 15 through August 15; and, implement and maintain appropriate erosion and sediment controls throughout project construction and site restoration. To minimize

potential wildlife entanglements resulting from use of synthetic/plastic erosion and sediment control matting, we recommend use of matting made from natural/organic materials such as coir fiber, jute, and/or burlap. We understand that adherence to these general recommendations may be infeasible in some situations. We are happy to work with the applicant to develop project-specific measures as necessary to minimize project impacts upon the Commonwealth's wildlife resources.

We recommend adherence to the installation's currently approved Integrated Natural Resources Management Plan.

Assuming adherence to erosion and sediment controls, we find this project consistent with the Fisheries Management Section of the CZMA.

Thanks, Amy



## Amy Ewing

*Environmental Services Biologist*

*Manager, Fish and Wildlife Information Services*

P 804.367.2211

**Virginia Department of Game & Inland Fisheries**

*CONSERVE. CONNECT. PROTECT.*

A 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228

[www.dgif.virginia.gov](http://www.dgif.virginia.gov)

---

### 2 attachments

 **WoodTurtle\_2014.pdf**  
52K

 **WOTU\_FieldObsForm\_20200227ame.pdf**  
696K

# WOOD TURTLE (*Glyptemys insculpta*)

## A Virginia Threatened Species



Note the sculptured scales of the top of shell (carapace).



Bottom view (plastron) of a male wood turtle. The concaved plastron is characteristic of a male. Note the distinct black markings and the brightly colored legs and tail.

Wood turtles, a state Threatened species, may be found in or near this project area. Wood turtles are medium-sized (6-9 inches adult shell length) semi-terrestrial turtles found in streams or in riparian uplands. The dull brown upper shell is very rough, and each section of the shell reflects growth rings that form an irregular pyramid. There is great variation in this trait, however, and the upper shell of older turtles may appear smooth. The bottom shell is yellow with black marginal blotches. Wood turtles have a black head, and dark brown extremities with characteristic yellow to burnt-orange skin patches on the neck and leg sockets. Wood turtles that are found in an instream construction area should be carefully relocated downstream to safety in suitable habitat (a run or deep pool with sandy or muddy bottom and submerged roots, branches, or logs). Wood turtles found within the project area uplands during construction should be relocated within the same watershed, approximately  $\frac{1}{4}$  to  $\frac{1}{2}$  mile downstream of their original location. It is a violation of Virginia law to harm or to possess a wood turtle. If you have any questions concerning wood turtles, please contact John Kleopfer of the Virginia Department of Game and Inland Fisheries (804-829-6703; [John.Kleopfer@dgif.virginia.gov](mailto:John.Kleopfer@dgif.virginia.gov)).

**THE WOOD TURTLE IS A PROTECTED SPECIES IN VIRGINIA: IT IS UNLAWFUL TO HARM, COLLECT, OR POSSESS THESE TURTLES.**



CONSERVE. CONNECT. PROTECT.

## Wood Turtle (*Glyptemys insculpta*) State Threatened Field Observation Form

February 27, 2020

Note: The Wood Turtle is a protected species in Virginia. It is unlawful to harm, collect, possess and/or disturb these animals without a permit. To apply for a permit please contact Shirl Dressler at 804-367-6913.

**If you encounter a Wood Turtle, please provide the information requested below and mail or FAX this form to:**

**Virginia Department of Game and Inland Fisheries  
Attn: John Kleopfer  
3801 J.T. Memorial Highway  
Charles City, Virginia 23030  
FAX 804-829-6788**

If possible, send digital photos to: [John.Kleopfer@dgif.virginia.gov](mailto:John.Kleopfer@dgif.virginia.gov)

**Distribution:** Wood Turtles are found primarily in the northeastern United States and parts of southeastern Canada, reaching the southern limit of its range in northern Virginia. In Virginia, it has been documented in Warren, Rockingham, Shenandoah, Frederick, Loudoun, Fairfax, Clark, and Page counties. However, it is not widely distributed within these counties.

**Species Description:** Wood Turtles are a semi-aquatic turtle usually found in or near streams, but not in ponds, reservoirs, or lakes. The shell length of an adult Wood Turtle can reach 9 inches. The plastron (bottom-half of the shell) is NOT hinged and the carapace (top-half of the shell) is flattened. The legs and tail are usually reddish to orange in color. Females are sometimes less colorful.

Wood Turtles may be confused with Eastern Box Turtles (*Terrapene carolina carolina*). Eastern Box Turtles are mainly terrestrial and only seldom are found in water. Eastern Box Turtles have a high domed shell with a hinged plastron which allows for it to completely enclose itself. The shell length of an adult Eastern Box Turtle is rarely over 5 inches.

See the following page for images and detailed descriptions of Wood Turtles and Eastern Box Turtles.

**Your name:** \_\_\_\_\_

**TE Collection Permit#, if applicable:** \_\_\_\_\_

**Your address:** \_\_\_\_\_

**Your phone number (optional):** \_\_\_\_\_

**Location of observation (GPS coordinates, nearest stream):** \_\_\_\_\_

\_\_\_\_\_

**Comments:** \_\_\_\_\_

\_\_\_\_\_

## WOOD TURTLE



Note the sculptured scales of the top of shell (carapace).

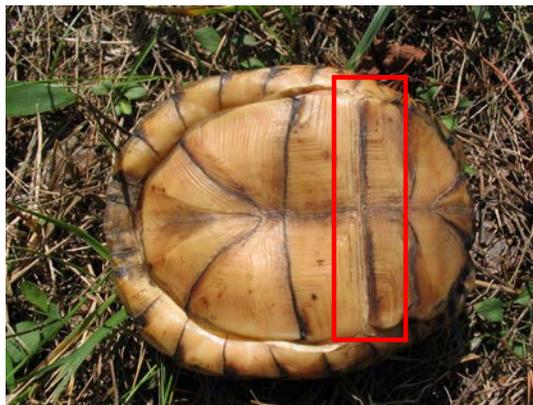


Bottom view (plastron) of a male Wood Turtle. The concave plastron is characteristic of a male. Note the distinct black markings and brightly colored legs and tail.

## EASTERN BOX TURTLE



Note the high domed shell and lack of sculptured scales. Males usually have an orange or yellowish face and are more brightly colored than females.



Note the **hinged plastron** and no markings. The concave plastron is also characteristic of male box turtles.



The plastron of Eastern Box Turtles will often turn black.



Unlike Wood Turtles, Eastern Box Turtles can completely enclose themselves within their shell.



Wellman, Julia &lt;julia.wellman@deq.virginia.gov&gt;

---

**Replacement of Dogue Creek Bridge, Fort Belvoir (DHR #2019-0210/DEQ #20-066F)**

1 message

---

**Holma, Marc** <marc.holma@dhr.virginia.gov>  
To: Julia Wellman <julia.wellman@deq.virginia.gov>

Mon, May 4, 2020 at 12:45 PM

Julia,

The DHR has received the above referenced project for our review and comment. Fort Belvoir has consulted with DHR on this undertaking pursuant to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation 36 CFR Part 800. We concurred with the Army the undertaking will have an adverse effect on the historic Dogue Creek Bridge, a property eligible for listing in the National Register of Historic Places, on 6 June 2019. The DHR reviewed and commented on a draft Memorandum of Agreement (MOA) for the undertaking on 29 October 2019. Since then, we have not seen a revised draft MOA for further comment or signature. As a consequence, Section 106 for this undertaking has not concluded. We request that the DEQ remind the Army of its responsibility to conclude the Section 106 process for this undertaking by providing DHR a final MOA for our signature.

Sincerely,  
Marc

--

Marc Holma  
Architectural Historian  
Division of Review and Compliance  
(804) 482-6090  
[marc.holma@dhr.virginia.gov](mailto:marc.holma@dhr.virginia.gov)



MEMORANDUM

TO: Julia Wellman, DEQ/EIR Environmental Program Planner

FROM: Carlos A. Martinez, Division of Land Protection & Revitalization Review Coordinator

DATE: May 15, 2020

COPIES: Sanjay Thirunagari, Division of Land Protection & Revitalization Review Manager; file

SUBJECT: Environmental Impact Review: No 20-066F Dogue Creek Bridge Rehabilitation, US Army Garrison Fort Belvoir in Fort Belvoir, Virginia.

The Division of Land Protection & Revitalization (DLPR) has completed its review of the Department of the Army's April 30, 2020 EIR for Dogue Creek Bridge Rehabilitation, US Army Garrison Fort Belvoir in Fort Belvoir, Virginia.

Solid and hazardous waste were addressed in the submittal. The submittal did not indicate that a search of Federal or State environmental databases was conducted. DLPR staff conducted a search (500 ft. radius) of the project area of solid and hazardous waste databases (including petroleum releases) to identify waste sites in close proximity to the project area. DLPR identified one (1) petroleum release sites within the project area which might impact the project.

DLPR staff has reviewed the submittal and offers the following comments:

**Hazardous Waste/RCRA Facilities – none in close proximity to the project area**

**CERCLA Sites – none in close proximity to the project area**

**Formerly Used Defense Sites (FUDS) – none in close proximity to the project area.**

**Solid Waste – none in close proximity to the project area**

**Virginia Remediation Program (VRP) – none in close proximity to the project area**

**Petroleum Releases – One (1) found in close proximity to the project area.**

- 1. PC Number 20023021, Fort Belvoir – Building 01695, Telegraph Rd and Potomac River, Fort Belvoir, Virginia 22060, Release Date: 07/06/2001, Status: Closed.**

*Please note that the DEQ's Pollution Complaint (PC) cases identified should be further evaluated by the project engineer or manager to establish the exact location, nature and extent of the petroleum release and the potential to impact the proposed project. In addition, the project engineer or manager should contact the DEQ's Northern Regional Office at (703) 583-3800 (Tanks Program) for further information about the PC cases.*

**PROJECT SPECIFIC COMMENTS**

None

**GENERAL COMMENTS**

**Soil, Sediment, Groundwater, and Waste Management**

Any soil, sediment or groundwater that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 *et seq.*; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-81); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 *et seq.*, and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous Materials, 49 CFR Part 107.

**Asbestos and/or Lead-based Paint**

All structures being demolished/renovated/removed should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM or LBP are found, in addition to the federal waste-related regulations mentioned above, State regulations 9VAC 20-81-620 for ACM and 9VAC 20-60-261 for LBP must be followed. Questions may be directed to Richard Doucette at the DEQ's Northern Regional Office at (703) 583-3800.

**Pollution Prevention – Reuse - Recycling**

Please note that DEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. All generation of hazardous wastes should be minimized and handled appropriately.

If you have any questions or need further information, please contact Carlos A. Martinez by phone at (804) 698-4575 or email [carlos.martinez@deq.virginia.gov](mailto:carlos.martinez@deq.virginia.gov).



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 1111 East Main Street, Suite 1400, Richmond, VA 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Matthew J. Strickler  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4000  
1-800-592-5482

## MEMORANDUM

**TO:** Julia Wellman, DEQ Office of Environmental Impact Review

**FROM:** Daniel Moore, DEQ Principal Environmental Planner

**DATE:** May 6, 2020

**SUBJECT:** DEQ #20-66F: US Department of Army: Dogue Creek Bridge Rehabilitation, Ft. Belvoir, Fairfax County Virginia

We have reviewed the Environmental Assessment for the above-referenced project and offer the following comments regarding consistency with the provisions of the *Chesapeake Bay Preservation Area Designation and Management Regulations* (Regulations):

In Fairfax County, the areas protected by the Chesapeake Bay Preservation Act (CBPA), as locally implemented, require conformance with performance criteria. These areas include Resource Protection Areas (RPAs) and Resource Management Areas (RMAs) as designated by the local governments. RPAs include tidal wetlands, certain non-tidal wetlands, and tidal shores. RPAs also include a 100-foot vegetated buffer area located adjacent to and landward of these features and along both sides of any water body with perennial flow. RMAs, which require less stringent performance criteria than RPAs, are designated jurisdiction-wide in Fairfax County and include all lands not designated as RPA.

The proposed project involves the removal of the existing Dogue Creek Bridge superstructure and installation of new bridge superstructure. (The existing bridge *substructure* will remain in place.) Removal of the bridge superstructure will involve the use of a 30-foot crane to be placed on Mt. Vernon Road immediately adjacent to the existing bridge. Bridge sections removed will be stored in a laydown area directly behind the crane. This laydown area would also be used for material storage, material handling, and bridge assembly and disassembly. An area south of the laydown area would be used for additional material storage, a turnaround for equipment and a secondary crane location. The bridge replacement project includes the following actions:

- Removal (in separate sections) of the existing truss bridge and sidewalk structure
- Clearing of dirt and debris from abutment bridge seats
- Replacement of all existing bridge bearings

- Installation of new bridge superstructure
- Replacement of existing concrete sidewalks at east and west ends of bridge walkways with new concrete sidewalks
- Tree trimming and removal of three trees within land analogous to RPA (mitigation to include 1-for-1 replacement of trees removed)
- Relocation of all existing utilities

Under the Federal Consistency Regulations of the *Coastal Zone Management Act of 1972*, federal actions in Virginia must be conducted in a manner “consistent to the maximum extent practicable” with the enforceable policies of the Virginia Coastal Management Program. The Coastal Lands Management enforceable policy is administered through the Chesapeake Bay Preservation Act and Regulations.

Federal actions on installations located within Tidewater Virginia are required to be consistent with the performance criteria of the Regulations on lands analogous to locally designated RPAs and RMAs, as provided in 9VAC25-830-130 and 140 of the Regulations, including compliance with the requirements of the *Virginia Erosion and Sediment Control Handbook*, and stormwater management criteria consistent with water quality protection provisions of the *Virginia Stormwater Management Regulations*. For land disturbance over 2,500 square feet, the project must comply with the requirements of the *Virginia Erosion and Sediment Control Handbook*. 9VAC25-830-130 of the Regulations specifically requires all proposed land development activities to meet the following three specific performance criteria: 1) no more land shall be disturbed than is necessary to provide for the proposed use or development; 2) indigenous vegetation shall be preserved to the maximum extent practicable, consistent with the use or development proposed; and 3) land development shall minimize impervious cover consistent with the proposed use or development.

Figure 3-1 (page 3-10: *Wetlands and Resource Protection Areas*) of the Environmental Assessment show that the project site includes lands analogous to locally designated RPA. 9VAC25-830-140 of the Regulations describes development (and redevelopment) criteria for RPAs. Land development similar to the proposed action may be allowed in the RPA only if it is water-dependent, constitutes redevelopment, and/or is a road or driveway crossing through a RPA that satisfies 9VAC25-830-140 1 (d) of the Regulations. 9VAC25-830-150 B 1 exempts the construction, installation, operation, and maintenance of public roads and their appurtenant structures. This exemption extends to public roadway bridges.

Provided adherence to the above requirements, particularly regarding minimizing land disturbance and impervious surfaces and preserving indigenous vegetation, the proposed activity would be consistent with the *Chesapeake Bay Preservation Act* and the Regulations.



Wellman, Julia &lt;julia.wellman@deq.virginia.gov&gt;

---

**Re: NEW PROJECT-EXPEDITED REVIEW-ARMY Dogue Creek Bridge Rehab, DEQ #20-066F**

1 message

---

**Holland, Benjamin** <benjamin.holland@deq.virginia.gov>  
To: Julia Wellman <Julia.Wellman@deq.virginia.gov>

Tue, May 12, 2020 at 3:18 PM

Northern Regional Office comments regarding the Environmental Assessment for *Dogue Creek Bridge Rehabilitation, U.S. Army Garrison Fort Belvoir, DEQ #20-066F*, are as follows:

**Land Protection Division** – The project manager is reminded that if any solid or hazardous waste is generated/encountered during construction, the project manager would follow applicable federal, state, and local regulations for their disposal.

**Air Compliance/Permitting** - The project manager is reminded that during the construction phases that occur with this project; the project is subject to the Fugitive Dust/Fugitive Emissions Rule 9 VAC 5-50-60 through 9 VAC 5-50-120. In addition, should any open burning or use of special incineration devices be employed in the disposal of land clearing debris during demolition and construction, the operation would be subject to the Open Burning Regulation 9 VAC 5-130-10 through 9 VAC 5-130-60 and 9 VAC 5-130-100.

**Virginia Water Protection Permit (VWPP) Program** – The project manager is reminded that a VWP permit from DEQ may be required should impacts to surface waters be necessary. DEQ VWP staff recommends that the avoidance and minimization of surface water impacts to the maximum extent practicable as well as coordination with the US Army Corps of Engineers. Upon receipt of a Joint Permit Application for the proposed surface water impacts, DEQ VWP Permit staff will review the proposed project in accordance with the VWP permit program regulations and current VWP permit program guidance. VWPP staff reserve the right to provide comment upon receipt of a permit application requesting authorization to impact state surface waters, and at such time that a wetland delineation has been conducted and associated jurisdiction determination made by the U.S. Army Corps of Engineers.

**Erosion and Sediment Control, Storm Water Management, and Petroleum Contamination** – DEQ has regulatory authority for the Virginia Pollutant Discharge Elimination System (VPDES) programs related to municipal separate storm sewer systems (MS4s) and construction activities. Erosion and sediment control measures are addressed in local ordinances and State regulations. Additional information is available at <http://www.deq.virginia.gov/Programs/Water/StormwaterManagement.aspx>. Non-point source pollution resulting from this project should be minimized by using effective erosion and sediment control practices and structures. Consideration should also be given to using permeable paving for parking areas and walkways where appropriate, and denuded areas should be promptly revegetated following construction work. If the total land disturbance exceeds 10,000 square feet, an erosion and sediment control plan will be required. Some localities also require an E&S plan for disturbances less than 10,000 square feet. A stormwater management plan may also be required. For any land disturbing activities equal to one acre or more, you are required to apply for coverage under the VPDES General Permit for Discharges of Storm Water from Construction Activities. The Virginia Stormwater Management Permit Authority may be DEQ or the locality. Additionally, the bridge replacement project should be constructed in accordance with the Fort Belvoir MS4 permit.

On Thu, Apr 30, 2020 at 4:48 PM Fulcher, Valerie <valerie.fulcher@deq.virginia.gov> wrote:

**Good a. ernoon - this is a new OEIR review request/project:**

**Document Type: Environmental Assessment/Federal Consistency Determinaon**

**Project Sponsor: Department of the Army**

**Project Title: Dogue Creek Bridge Rehabilitaon, U .S. Army Garrison Fort Belvoir**

**Location: Fairfax County**  
**Project Number: DEQ #20-066F**

The document is available at [www.deq.virginia.gov/filesshare/oeir](http://www.deq.virginia.gov/filesshare/oeir) in the **ARMY** folder.

The due date for comments is **MAY 20, 2020**. You can send your comments either directly to **JULIA WELLMAN** by email ([Julia.Wellman@deq.virginia.gov](mailto:Julia.Wellman@deq.virginia.gov)), or you can send your comments by regular interagency/U.S. mail to the Department of Environmental Quality, Office of Environmental Impact Review, P.O. Box 1105, Richmond, VA 23218.

**NOTE: This deadline is expedited at the request of the Army.**

If you cannot meet the deadline, please notify the project coordinator prior to the comment due date. Arrangements may be made to extend the deadline for comments if possible. An agency will be considered to have no concerns if comments are not received (or contact is made) within the review period. However, it is important that agencies consistently participate in accordance with Virginia Code Section 10.1-1192.

#### REVIEW INSTRUCTIONS:

- A. Please review the document carefully. If the proposal has been previously reviewed (e.g. as a draft EIS or a Part 1 EIR), please consider whether your earlier comments have been adequately addressed.
- B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency (agency stationary or email) and include the project number on all correspondence.

If you have any questions, please email Julia.

Thanks!

Valerie

--

Valerie A. Fulcher, CAP, OM, Environmental Program Specialist

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

804/698-4330

804/698-4319 (Fax)

email: [Valerie.Fulcher@deq.virginia.gov](mailto:Valerie.Fulcher@deq.virginia.gov)

<http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx>

For program updates and public notices please subscribe to Constant Contact: <https://lp.constantcontact.com/su/MVcCump/EIR>

--

**BENJAMIN D. HOLLAND, MPH**  
DEQ Regional Enforcement Specialist

VA Department of Environmental Quality  
Northern Regional Office  
[13901 Crown Court](#)  
[Woodbridge, VA 22193](#)

Phone: (703) 583-3812  
Email: [benjamin.holland@deq.virginia.gov](mailto:benjamin.holland@deq.virginia.gov)  
Website: [www.deq.virginia.gov](http://www.deq.virginia.gov)



Wellman, Julia &lt;julia.wellman@deq.virginia.gov&gt;

---

**Re: NEW PROJECT-EXPEDITED REVIEW-ARMY Dogue Creek Bridge Rehab, DEQ #20-066F**

1 message

---

**Gavan, Lawrence** <larry.gavan@deq.virginia.gov>  
To: "Wellman, Julia" <julia.wellman@deq.virginia.gov>

Tue, May 5, 2020 at 9:51 AM

**(a) Agency Jurisdiction.** The Department of Environmental Quality (DEQ) administers the *Virginia Erosion and Sediment Control Law and Regulations (VESCL&R)* and *Virginia Stormwater Management Law and Regulations (VSWML&R)*.

**(b) Erosion and Sediment Control and Stormwater Management Plans.** The Applicant and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with *VESCL&R* and *VSWML&R*, including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater than 10,000 square feet (2,500 square feet in Chesapeake Bay Preservation Area) would be regulated by *VESCL&R*. Accordingly, the Applicant must prepare and implement an erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. Land-disturbing activities that result in the total land disturbance of equal to or greater than 1 acre (2,500 square feet in Chesapeake Bay Preservation Area) would be regulated by *VSWML&R*. Accordingly, the Applicant must prepare and implement a Stormwater Management (SWM) plan to ensure compliance with state law and regulations. The ESC/SWM plan is submitted to the DEQ Regional Office that serves the area where the project is located for review for compliance. The Applicant is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy. [Reference: *VESCL 62.1-44.15 et seq.*]

**(c) General Permit for Stormwater Discharges from Construction Activities (VAR10).** DEQ is responsible for the issuance, denial, revocation, termination and enforcement of the Virginia Stormwater Management Program (VSMP) General Permit for Stormwater Discharges from Construction Activities related to municipal separate storm sewer systems (MS4s) and construction activities for the control of stormwater discharges from MS4s and land disturbing activities under the Virginia Stormwater Management Program.

The owner or operator of projects involving land-disturbing activities of equal to or greater than 1 acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project-specific Stormwater Pollution Prevention Plan. Construction activities requiring registration also include land disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan of development will collectively disturb equal to or greater than one acre. The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the *VSMP Permit Regulations*. General information and registration forms for the General Permit are available at: <http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPPermits/ConstructionGeneralPermit.aspx>

[Reference: Virginia Stormwater Management Act 62.1-44.15 et seq.; VSMP Permit Regulations 9VAC25-880 et seq.]

On Thu, Apr 30, 2020 at 4:48 PM Fulcher, Valerie <valerie.fulcher@deq.virginia.gov> wrote:

**Good a. ernoon - this is a new OEIR review request/project:**

**Document Type: Environmental Assessment/Federal Consistency Determinaon**

**Project Sponsor: Department of the Army**

**Project Title: Dogue Creek Bridge Rehabilitaon, U .S. Army Garrison Fort Belvoir**

**Locaon: Fairfax County**

**Project Number: DEQ #20-066F**

The document is available at [www.deq.virginia.gov/filesshare/oeir](http://www.deq.virginia.gov/filesshare/oeir) in the **ARMY** folder.

The due date for comments is **MAY 20, 2020**. You can send your comments either directly to **JULIA WELLMAN** by email ([Julia.Wellman@deq.virginia.gov](mailto:Julia.Wellman@deq.virginia.gov)), or you can send your comments by regular interagency/U.S. mail to the Department of Environmental Quality, Office of Environmental Impact Review, P.O. Box 1105, Richmond, VA 23218.

**NOTE: This deadline is expedited at the request of the Army.**

If you cannot meet the deadline, please nof y the project coordinator prior to the comment due date. Arrangements may be made to extend the deadline for comments if possible. An agency will be considered to have no concerns if comments are not received (or contact is made) within the review period. However, it is important that agencies consistently parcipa te in accordance with Virginia Code Secon 10.1-1192.

#### REVIEW INSTRUCTIONS:

- A. Please review the document carefully. If the proposal has been previously reviewed (e.g. as a dra EIS or a P art 1 EIR), please consider whether your earlier comments have been adequately addressed.
- B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency (agency staonar y or email) and include the project number on all correspondence.

If you have any quesons, please email Julia.

Thanks!

Valerie

--

Valerie A. Fulcher, CAP, OM, Environmental Program Specialist

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

**804/698-4330**

**804/698-4319 (Fax)**

**email: [Valerie.Fulcher@deq.virginia.gov](mailto:Valerie.Fulcher@deq.virginia.gov)**

**<http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx>**

For program updates and public notices please subscribe to Constant Contact: <https://lp.constantcontact.com/su/MVcCump/EIR>



Wellman, Julia &lt;julia.wellman@deq.virginia.gov&gt;

---

**Re: NEW PROJECT-EXPEDITED REVIEW-ARMY Dogue Creek Bridge Rehab, DEQ #20-066F**

1 message

---

**Warren, Arlene** <arlene.warren@vdh.virginia.gov>  
To: Julia Wellman <julia.wellman@deq.virginia.gov>  
Cc: rr Environmental Impact Review <eir@deq.virginia.gov>

Thu, May 14, 2020 at 7:25 AM

**Project Name: Dogue Creek Bridge Rehabilitation, U.S. Army Garrison Fort Belvoir****Project #: 20-066 F**

UPC #: N/A

**Location: Fort Belvoir VA**

VDH – Office of Drinking Water has reviewed the above project. Below are our comments as they relate to proximity to **public drinking water sources** (groundwater wells, springs, and surface water intakes). Potential impacts on public water distribution systems or sanitary sewage collection systems **must be verified by the local utility.**

There are no public groundwater wells within a 1-mile radius of the project site.

There are no surface water intakes located within a 5-mile radius of the project site.

The project is not within the watershed of any public surface water intakes.

There are no apparent impacts on public drinking water sources due to this project.

- OEHS Onsite Sewage & Water Services, Mr. Lance Gregory had no comments.

*Virginia Department of Health – Office of Drinking Water appreciates the opportunity to provide comments. If you have any questions, please let me know.*

Best Regards,

Arlene Fields Warren

**GIS Program Support Technician****Office of Drinking Water****Virginia Department of Health**

109 Governor Street

Richmond, VA 23219

(804) 864-7781

On Thu, Apr 30, 2020 at 4:48 PM Fulcher, Valerie <valerie.fulcher@deq.virginia.gov> wrote:

**Good afternoon - this is a new OEIR review request/project:**

**Document Type: Environmental Assessment/Federal Consistency Determination**  
**Project Sponsor: Department of the Army**  
**Project Title: Dogue Creek Bridge Rehabilitation, U.S. Army Garrison Fort Belvoir**  
**Location: Fairfax County**  
**Project Number: DEQ #20-066F**

The document is available at [www.deq.virginia.gov/filesshare/oeir](http://www.deq.virginia.gov/filesshare/oeir) in the **ARMY** folder.

The due date for comments is **MAY 20, 2020**. You can send your comments either directly to JULIA WELLMAN by email ([Julia.Wellman@deq.virginia.gov](mailto:Julia.Wellman@deq.virginia.gov)), or you can send your comments by regular interagency/U.S. mail to the Department of Environmental Quality, Office of Environmental Impact Review, P.O. Box 1105, Richmond, VA 23218.

**NOTE: This deadline is expedited at the request of the Army.**

If you cannot meet the deadline, please notify the project coordinator prior to the comment due date. Arrangements may be made to extend the deadline for comments if possible. An agency will be considered to have no concerns if comments are not received (or contact is made) within the review period. However, it is important that agencies consistently participate in accordance with Virginia Code Section 10.1-1192.

#### REVIEW INSTRUCTIONS:

- A. Please review the document carefully. If the proposal has been previously reviewed (e.g. as a draft EIS or a Part 1 EIR), please consider whether your earlier comments have been adequately addressed.
- B. Prepare your agency's comments in a form which would be acceptable for responding directly to a project proponent agency (agency stationary or email) and include the project number on all correspondence.

If you have any questions, please email Julia.

Thanks!

Valerie

--

Valerie A. Fulcher, CAP, OM, Environmental Program Specialist

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

804/698-4330

804/698-4319 (Fax)

email: [Valerie.Fulcher@deq.virginia.gov](mailto:Valerie.Fulcher@deq.virginia.gov)

<http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx>

For program updates and public notices please subscribe to Constant Contact: <https://lp.constantcontact.com/su/MVcCump/EIR>



**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT  
2 HOPKINS PLAZA  
BALTIMORE, MARYLAND 21201

CENAB-PL-I

MEMORANDUM FOR: Christopher Yesmant, NEPA Program Manager, DPW-Environmental Division, 9430 Jackson Loop, Fort Belvoir, Virginia 22060

SUBJECT: Dogue Creek Bridge Rehabilitation Small Whorled Pogonia and Wood Turtle Habitat Assessment

1. On 11 March 2019, the U.S. Army Corps of Engineers (USACE), Baltimore District, Planning Division, performed on-site habitat surveys in order to determine the potential suitability of habitat for the Federally-threatened small whorled pogonia (*Isotria medeoloides*) and the State-threatened wood turtle (*Glyptemys insculpta*) within the study area of the location of the proposed Dogue Creek Bridge rehabilitation, located on Fort Belvoir, Fairfax County, Virginia.
2. No suitable habitat for either the small whorled pogonia or wood turtle was observed within the study area. Additionally, the habitat observed at the site would not generally be considered preferred for the small whorled pogonia or wood turtle.
3. Preferred habitat, per the U.S. Fish and Wildlife Service (USFWS) fact sheet, of the small whorled pogonia is described as “older hardwood stands of beech, birch, maple, oak, and hickory that have an open understory. Sometimes it grows in stands of softwoods such as hemlock. It prefers acidic soils with a thick layer of dead leaves, often on slopes near small streams.” For the wood turtle, the habitat varies from riparian forests, wetlands to open fields generally within 1,000 feet of moderately flowing freshwater streams with sand or gravel bottoms. Stream banks with overhanging trees and roots are preferred for hibernation.
4. Prior to the field effort, the USFWS Information for Planning and Consultation (IPaC) website was consulted. Results from the IPaC search (attached) indicated only one potential Federally-threatened species: the northern long-eared bat (*Myotis septentrionalis*) to occur within the study area. Due to potential impacts to the northern long-eared bat, USFWS should be consulted prior to any tree clearing activities on the site.
5. The survey was performed by meander throughout the study area by two (2) surveyors for two (2) hours; for a total of four (4) labor hours. The study area is approximately two (2) acres and includes existing roadways, parking areas, maintained lawn and several trees located on the banks of Dogue Creek. Trees on the banks of Dogue Creek include American sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), tree-of-heaven (*Ailanthus altissima*), which is an invasive species, bald cypress (*Taxodium distichum*), and tulip poplar (*Liriodendron tulipifera*). Invasive bush honeysuckle (*Lonicera tartarica*), Japanese honeysuckle (*Lonicera*

honeysuckle (*Lonicera japonica*) and Asiatic bittersweet (*Celastrus orbiculatus*) were dense in the understory along the banks of Dogue Creek.

6. Enclosed photos show the general condition of the survey area.

7. Please provide any questions or comments to Mr. Dan Cockerham at 410-962-2792.

Sincerely,

*For:*   
AMY M. GUISE  
Chief, Planning Division

Encls:

1. Field Photographs
2. U.S. Fish and Wildlife Service Correspondence

# Enclosure 1: Field Photographs



West side of bridge (looking east)



West side, under bridge



West side of bridge (looking north)



West side of bridge (looking south)



East side of bridge



East side of bridge (looking north)

## Enclosure 2



### United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Virginia Ecological Services Field Office  
6669 Short Lane  
Gloucester, VA 23061-4410  
Phone: (804) 693-6694 Fax: (804) 693-9032  
<http://www.fws.gov/northeast/virginiafield/>

In Reply Refer To:

May 01, 2019

Consultation Code: 05E2VA00-2019-SLI-3722

Event Code: 05E2VA00-2019-E-08739

Project Name: Dogue Creek Bridge Rehabilitation

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
-

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Virginia Ecological Services Field Office**

6669 Short Lane

Gloucester, VA 23061-4410

(804) 693-6694

---

## Project Summary

Consultation Code: 05E2VA00-2019-SLI-3722

Event Code: 05E2VA00-2019-E-08739

Project Name: Dogue Creek Bridge Rehabilitation

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: Replacement of existing bridge with new structure. Exact footprint of existing bridge will be used for new structure

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.70915943845374N77.13283207092422W>



Counties: Fairfax, VA

---

## Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

---

# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

---

U.S. Department of  
Homeland Security

United States  
Coast Guard



Commander  
United States Coast Guard  
Fifth Coast Guard District

431 Crawford Street  
Portsmouth, VA 23704-5004  
Staff Symbol: dpb  
Phone: (757) 398-6422  
Fax: (757) 398-6334  
Email: [Martin.A.Bridges@uscg.mil](mailto:Martin.A.Bridges@uscg.mil)  
or [CGDFiveBridges@uscg.mil](mailto:CGDFiveBridges@uscg.mil)

16591  
19 JUN 2020

Mr. Anhhuy Huynh  
US Army Corps of Engineers  
9430 Jackson Loop  
Fort Belvoir, VA 22060-5116

Dear Huynh:

Coast Guard review of your proposed project as provided in your email dated May 19, 2020, is complete.

Based on the documentation provided and our research, it is determined that a Coast Guard bridge permit will not be required for the proposed highway fixed bridge – Mount Vernon Road Bridge over Dogue Creek, at (38.709367, -77.132400), Fort Belvoir, VA.

The project will be placed in our Advance Approval category as per Title 33 Code of Federal Regulations Part 115.70. This Advance Approval determination is for the location and structure described above and **is valid for five years from the date of this letter**. The following conditions apply to this determination:

- a. If the construction project on the above bridge does not commence within this time, you must contact this office for reaffirmation of this determination.
- b. Future bridge projects along the above waterway will have to be independently evaluated before they may be considered for placement in the Advance Approval category. This includes modification, replacement and removal of the above bridge, following its initial construction.
- c. Prior to bridge construction, the bridge owner should submit a bridge maintenance project plan to this office at least 30 days (preferably 90 days) prior to work commencing on or over the navigable waterway. Please see enclosure (1).

The fact that a Coast Guard bridge permit is not required does not relieve you of the responsibility for compliance with the requirements of any other Federal, State, or local agency who may have jurisdiction over any aspect of the project. Although the project will not require a bridge permit, other areas of Coast Guard jurisdiction apply. The following conditions apply concerning construction of the above bridge:

- a. You or your contractor must notify this office at least 30 days (preferably 90 days) in advance of the start of construction and any other work which may be an obstruction to navigation, so we may issue and update the information in our Local Notice to Mariners

and monitor the project. The notice should include details of the project as described in enclosure (1).

- b. At no time during the project will the waterway be closed to navigation without the prior notification and approval of the Coast Guard. The bridge owner or contractor is required to maintain close and regular contact with Coast Guard Sector Virginia at (757) 668-5581 or [D05-SMB-SECHR-Waterways@uscg.mil](mailto:D05-SMB-SECHR-Waterways@uscg.mil) to keep them informed of activities on the waterway.
- c. The lowest portion of the superstructure of the bridge across the waterway should clear the 100-year flood height elevation, if feasible.
- d. In addition, the requirement to display navigational lighting at the aforementioned bridge is hereby waived, as per Title 33 Code of Federal Regulations, Part 118.40(b). This waiver may be rescinded at any time in the future should nighttime navigation through the proposed bridge be increased to a level determined by the District Commander to warrant lighting.

The National Ocean Service (NOS) of the National Oceanic and Atmosphere Administration (NOAA) is responsible for maintaining the charts of U.S. waters; therefore, they must be notified of this proposed work. You must notify our office and the NOS at the address below upon completion of the activity approved in this letter. Your notification of project completion must include as-built drawings or certification of the following:

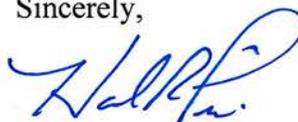
- a. Bridge name
- b. Action type (new construction, modification, relocation, conversion (fixed/draw), etc.)
- c. Dates (commenced and completed)
- d. Location (latitude and longitude at bridge center and centerline of channel, statute miles above mouth of waterway, and bridge or causeway orientation or geographic positions of approaches)
- e. Type of bridge (fixed, vertical lift, bascule, suspension, swing, trestle, pontoon, etc.)
- f. Navigation clearances (vertical at mean high water and horizontal)  
(Moveable – vertical at mean high water in open and closed positions)
- g. Whether or not the bridge is fitted with clearance gauges
- h. Whether or not the bridge has pier protection and/or fender system.
- i. Type of land traffic (highway, railroad, pedestrian, pipeline, etc.)

16591  
19 JUN 2020

Ms. Sladjana Maksimovic  
National Ocean Service  
N/CS26, Room 7317  
1315 East-West Highway  
Silver Spring, MD 20910-3282

If you have any further questions, please contact Mr. Marty Bridges at the above listed address or telephone number.

Sincerely,



HAL R. PITTS  
Bridge Program Manager  
By direction

Encl: Bridge Maintenance Project Plan

Copy: Ms. Sladjana Maksimovic, NOS  
CG Sector Virginia, Waterways Management  
U. S. Army Corps of Engineers, Norfolk District  
Federal Highways Administration, Richmond, VA

## BRIDGE MAINTENANCE PROJECT PLAN

1. The bridge owner, or entity acting on behalf of the bridge owner, should submit a bridge maintenance project plan at least 30 days (preferably 90 days) prior to commencement of work on or over the navigable waterway. Correspondence may be submitted via .pdf email attachment to [CGDFiveBridges@uscg.mil](mailto:CGDFiveBridges@uscg.mil) or mailed.
2. Once received, the request will be assigned to a project officer for review and processing. The project officer will publish a local notice to mariners. If appropriate, the project officer will publish a temporary deviation from drawbridge operating regulations.
  - a. **Bridge Information:** Provide bridge name, bridge type (highway, railroad, pedestrian, pipeline, etc.), roadway (s) carried, waterway name, mile (statute) on waterway from confluence, municipal location (town/city, county (if applicable/if known), and state).
  - b. **Project Description:** Provide the general description, nature and scope of the project. Drawings may be submitted, particularly if there are any planned temporary reductions in navigation clearances.
  - c. **Project Dates/Work Hours:** Provide primary and alternate (if applicable) project dates and work hours. Alternate dates and work hours may be included to account for inclement weather, etc.
  - d. **Navigation Clearances:** Provide any proposed temporary reductions in navigation clearances (vertical and/or horizontal), including the amount of the reduction (s) in feet and when the reduction (s) will be in place.
  - e. **Temporary Deviation (from Operating Regulations):** For drawbridges – Provide any proposed temporary deviation from operating regulations including: purpose (why it is necessary); dates/times of closure; if the bridge will be closed when bridge work is not being performed, provide justification for closure during non-work hours; whether the bridge will be able to open for an emergency and within how much time of notice; whether vessels may pass through the bridge in the closed position at any time or with prior notice.
  - f. **Project Resources:** Provide list of vessels, barges, equipment and location of personnel involved in the project. Indicate whether the project resources will relocate from the navigation channel during work hours, and if so, provide the timeframe for notice and method of notice. Indicate whether the resources will relocate from the navigation channel during non-work hours, and if not, provide justification for them to remain in the navigation channel during non-work hours.
  - g. **Communications:** Provide communications plan for project resources. This should include VHF-FM channel 13 for vessels and drawbridge tenders and may include mobile phone devices for vessels and project personnel. Vessel operators need to be able to communicate with project resources for safe navigation.
  - h. **Bridge Owner Information:** If the request is submitted by an entity on behalf of the bridge owner, provide the bridge owner representative's contact information (name, telephone and email) and the bridge owner's mailing address for the appropriate office.



# COMMONWEALTH of VIRGINIA

## Marine Resources Commission

Building 96  
380 Fenwick Road  
Fort Monroe, VA 23651

May 13, 2020

Matthew J. Strickler  
Secretary of Natural Resources

Steven G. Bowman  
Commissioner

U. S. Army Garrison, Fort Belvoir  
Department of Public Works  
Attn: Mr. Christopher W. Landgraf  
c/o KCI Technologies  
936 Ridgebrook Road  
Sparks, MD 21152  
[christopher.w.landgraf.civ@mail.mil](mailto:christopher.w.landgraf.civ@mail.mil)  
[stephen.drumm@kci.com](mailto:stephen.drumm@kci.com)

Re: VMRC #20-0782

Dear Mr. Landgraf:

We have received your application requesting authorization to remove and replace a clear span bridge structure (Mount Vernon Road) over Dogue Creek, within Fort Belvoir in Fairfax County.

Since this project is sponsored by a federal agency with no fill proposed to State-owned submerged land, no permit is required from the Marine Resources Commission. For your information, you may need authorization from the U. S. Army Corps of Engineers, the Department of Environmental Quality (DEQ) and/or your local wetlands board prior to commencing your project. Your application has been forwarded to these agencies.

If I may be of further assistance, please contact me at (757) 247-8028 or via e-mail at [mark.eversole@mrc.virginia.gov](mailto:mark.eversole@mrc.virginia.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Eversole".

Mark C. Eversole  
Environmental Engineer

MCE/lra  
HM

cc: Department of Environmental Quality #4  
U. S. Army Corps of Engineers #10  
Fairfax County Wetlands Board  
Applicant

*An Agency of the Natural Resources Secretariat*

[www.mrc.virginia.gov](http://www.mrc.virginia.gov)

Telephone (757) 247-2200 (757) 247-2292 V/TDD Information and Emergency Hotline 1-800-541-4646 V/TDD



**DEPARTMENT OF THE ARMY**  
BALTIMORE DISTRICT, CORPS OF ENGINEERS  
2 HOPKINS PLAZA  
BALTIMORE, MD 21201-2939

June 25, 2020

Operations Division

Mr. Christopher Landgraf  
Department of Public Works  
9430 Jackson Loop Road  
Building 1442  
Fort Belvoir, Virginia 22060

Dear Mr. Landgraf:

This is in reference to your application, NAB-2020-00224 (Fort Belvoir/Dogue Creek Bridge Replacement), received on April 24, 2020 for Department of Army (DA) authorization to replace in-kind the Mount Vernon Road Bridge over Dogue Creek at Fort Belvoir, Fairfax County, Virginia.

On June 19, 2020 you received Advance Approval determination from the United States Coast Guard. Our evaluation has determined that the proposed bridge replacement work, if accomplished in accordance with the description within the application, does not require a Department of Army authorization pursuant to Section 10 of the River and Harbors Act of 1899 and/or Section 404 of the Clean Water Act. If any of the information contained in the application and/or plan(s) is later found to be in error, this determination may be subject to modification, suspension, or revocation.

If you have any questions concerning this matter, please contact the undersigned at (410) 962-6029 or Erica.Schmidt@usace.army.mil.

Sincerely,

Erica W. Schmidt  
Project Manager, Maryland South Section

---

To identify how we can better serve you, we need your help. Please take the time to fill out our new customer service survey at:  
[http://corpsmapu.usace.army.mil/cm\\_apex/f?p=136:4:8845707609835](http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:8845707609835)

U.S. Department of  
Homeland Security

United States  
Coast Guard



Commander  
United States Coast Guard  
Fifth Coast Guard District

431 Crawford Street  
Portsmouth, VA 23704-5004  
Staff Symbol: dpb  
Phone: (757) 398-6422  
Fax: (757) 398-6334  
Email: [Martin.A.Bridges@uscg.mil](mailto:Martin.A.Bridges@uscg.mil)  
or [CGDFiveBridges@uscg.mil](mailto:CGDFiveBridges@uscg.mil)

16591  
19 JUN 2020

Mr. Anhhuy Huynh  
US Army Corps of Engineers  
9430 Jackson Loop  
Fort Belvoir, VA 22060-5116

Dear Huynh:

Coast Guard review of your proposed project as provided in your email dated May 19, 2020, is complete.

Based on the documentation provided and our research, it is determined that a Coast Guard bridge permit will not be required for the proposed highway fixed bridge – Mount Vernon Road Bridge over Dogue Creek, at (38.709367, -77.132400), Fort Belvoir, VA.

The project will be placed in our Advance Approval category as per Title 33 Code of Federal Regulations Part 115.70. This Advance Approval determination is for the location and structure described above and **is valid for five years from the date of this letter**. The following conditions apply to this determination:

- a. If the construction project on the above bridge does not commence within this time, you must contact this office for reaffirmation of this determination.
- b. Future bridge projects along the above waterway will have to be independently evaluated before they may be considered for placement in the Advance Approval category. This includes modification, replacement and removal of the above bridge, following its initial construction.
- c. Prior to bridge construction, the bridge owner should submit a bridge maintenance project plan to this office at least 30 days (preferably 90 days) prior to work commencing on or over the navigable waterway. Please see enclosure (1).

The fact that a Coast Guard bridge permit is not required does not relieve you of the responsibility for compliance with the requirements of any other Federal, State, or local agency who may have jurisdiction over any aspect of the project. Although the project will not require a bridge permit, other areas of Coast Guard jurisdiction apply. The following conditions apply concerning construction of the above bridge:

- a. You or your contractor must notify this office at least 30 days (preferably 90 days) in advance of the start of construction and any other work which may be an obstruction to navigation, so we may issue and update the information in our Local Notice to Mariners

and monitor the project. The notice should include details of the project as described in enclosure (1).

- b. At no time during the project will the waterway be closed to navigation without the prior notification and approval of the Coast Guard. The bridge owner or contractor is required to maintain close and regular contact with Coast Guard Sector Virginia at (757) 668-5581 or [D05-SMB-SECHR-Waterways@uscg.mil](mailto:D05-SMB-SECHR-Waterways@uscg.mil) to keep them informed of activities on the waterway.
- c. The lowest portion of the superstructure of the bridge across the waterway should clear the 100-year flood height elevation, if feasible.
- d. In addition, the requirement to display navigational lighting at the aforementioned bridge is hereby waived, as per Title 33 Code of Federal Regulations, Part 118.40(b). This waiver may be rescinded at any time in the future should nighttime navigation through the proposed bridge be increased to a level determined by the District Commander to warrant lighting.

The National Ocean Service (NOS) of the National Oceanic and Atmosphere Administration (NOAA) is responsible for maintaining the charts of U.S. waters; therefore, they must be notified of this proposed work. You must notify our office and the NOS at the address below upon completion of the activity approved in this letter. Your notification of project completion must include as-built drawings or certification of the following:

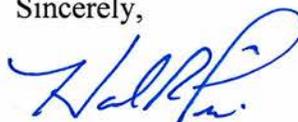
- a. Bridge name
- b. Action type (new construction, modification, relocation, conversion (fixed/draw), etc.)
- c. Dates (commenced and completed)
- d. Location (latitude and longitude at bridge center and centerline of channel, statute miles above mouth of waterway, and bridge or causeway orientation or geographic positions of approaches)
- e. Type of bridge (fixed, vertical lift, bascule, suspension, swing, trestle, pontoon, etc.)
- f. Navigation clearances (vertical at mean high water and horizontal)  
(Moveable – vertical at mean high water in open and closed positions)
- g. Whether or not the bridge is fitted with clearance gauges
- h. Whether or not the bridge has pier protection and/or fender system.
- i. Type of land traffic (highway, railroad, pedestrian, pipeline, etc.)

16591  
19 JUN 2020

Ms. Sladjana Maksimovic  
National Ocean Service  
N/CS26, Room 7317  
1315 East-West Highway  
Silver Spring, MD 20910-3282

If you have any further questions, please contact Mr. Marty Bridges at the above listed address or telephone number.

Sincerely,



HAL R. PITTS  
Bridge Program Manager  
By direction

Encl: Bridge Maintenance Project Plan

Copy: Ms. Sladjana Maksimovic, NOS  
CG Sector Virginia, Waterways Management  
U. S. Army Corps of Engineers, Norfolk District  
Federal Highways Administration, Richmond, VA

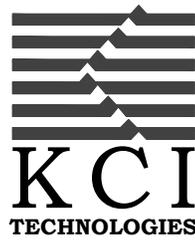
## BRIDGE MAINTENANCE PROJECT PLAN

1. The bridge owner, or entity acting on behalf of the bridge owner, should submit a bridge maintenance project plan at least 30 days (preferably 90 days) prior to commencement of work on or over the navigable waterway. Correspondence may be submitted via .pdf email attachment to [CGDFiveBridges@uscg.mil](mailto:CGDFiveBridges@uscg.mil) or mailed.
2. Once received, the request will be assigned to a project officer for review and processing. The project officer will publish a local notice to mariners. If appropriate, the project officer will publish a temporary deviation from drawbridge operating regulations.
  - a. **Bridge Information:** Provide bridge name, bridge type (highway, railroad, pedestrian, pipeline, etc.), roadway (s) carried, waterway name, mile (statute) on waterway from confluence, municipal location (town/city, county (if applicable/if known), and state).
  - b. **Project Description:** Provide the general description, nature and scope of the project. Drawings may be submitted, particularly if there are any planned temporary reductions in navigation clearances.
  - c. **Project Dates/Work Hours:** Provide primary and alternate (if applicable) project dates and work hours. Alternate dates and work hours may be included to account for inclement weather, etc.
  - d. **Navigation Clearances:** Provide any proposed temporary reductions in navigation clearances (vertical and/or horizontal), including the amount of the reduction (s) in feet and when the reduction (s) will be in place.
  - e. **Temporary Deviation (from Operating Regulations):** For drawbridges – Provide any proposed temporary deviation from operating regulations including: purpose (why it is necessary); dates/times of closure; if the bridge will be closed when bridge work is not being performed, provide justification for closure during non-work hours; whether the bridge will be able to open for an emergency and within how much time of notice; whether vessels may pass through the bridge in the closed position at any time or with prior notice.
  - f. **Project Resources:** Provide list of vessels, barges, equipment and location of personnel involved in the project. Indicate whether the project resources will relocate from the navigation channel during work hours, and if so, provide the timeframe for notice and method of notice. Indicate whether the resources will relocate from the navigation channel during non-work hours, and if not, provide justification for them to remain in the navigation channel during non-work hours.
  - g. **Communications:** Provide communications plan for project resources. This should include VHF-FM channel 13 for vessels and drawbridge tenders and may include mobile phone devices for vessels and project personnel. Vessel operators need to be able to communicate with project resources for safe navigation.
  - h. **Bridge Owner Information:** If the request is submitted by an entity on behalf of the bridge owner, provide the bridge owner representative's contact information (name, telephone and email) and the bridge owner's mailing address for the appropriate office.

Dec.20, 2019 - 2:07pm User: amanda.wagoner  
 M:\2018\1901806729\Drawings\wetland files\Impact\_plates\Permit Plates.dwg



SHEET 1 OF 5



*ENGINEERS*  
*PLANNERS*  
*SCIENTISTS*  
*CONSTRUCTION MANAGERS*

936 RIDGEBROOK ROAD  
 SPARKS, MD 21152  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com

DATE  
 DECEMBER 2019

SCALE  
 1" = 2,000'

DESIGNED BY  
 JB

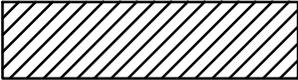
DRAWN BY  
 AAW

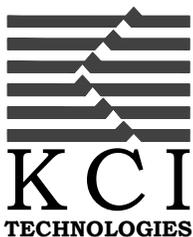
**USA GARRISON FORT BELVOIR**  
 FAIRFAX COUNTY, VIRGINIA

SUPERSTRUCTURE REPLACEMENT OF BRIDGE NO. 1590 ON  
 MT. VERNON ROAD OVER DOGUE CREEK

**VICINITY MAP**

# GENERAL LEGEND

-  - TEMPORARY STONE/LAYDOWN STAGING AREA
-  - WORK AREA
-  - PAVED LAYDOWN STAGING AREA
-  - CONTOUR MAJOR
-  - CONTOUR MINOR
-  - PLAYGROUND SITE
-  - EXISTING TREE LINE
-  - EXISTING ROAD
-  - EXISTING FLOODPLAIN
-  - EXISTING TREE
-  - EXISTING OVERHEAD ELECTRIC LINES
-  - EXISTING WETLAND
-  - EXISTING STREAM
-  - SILT FENCE / LOD LIMITS
-  - 100 YEAR FLOODPLAIN

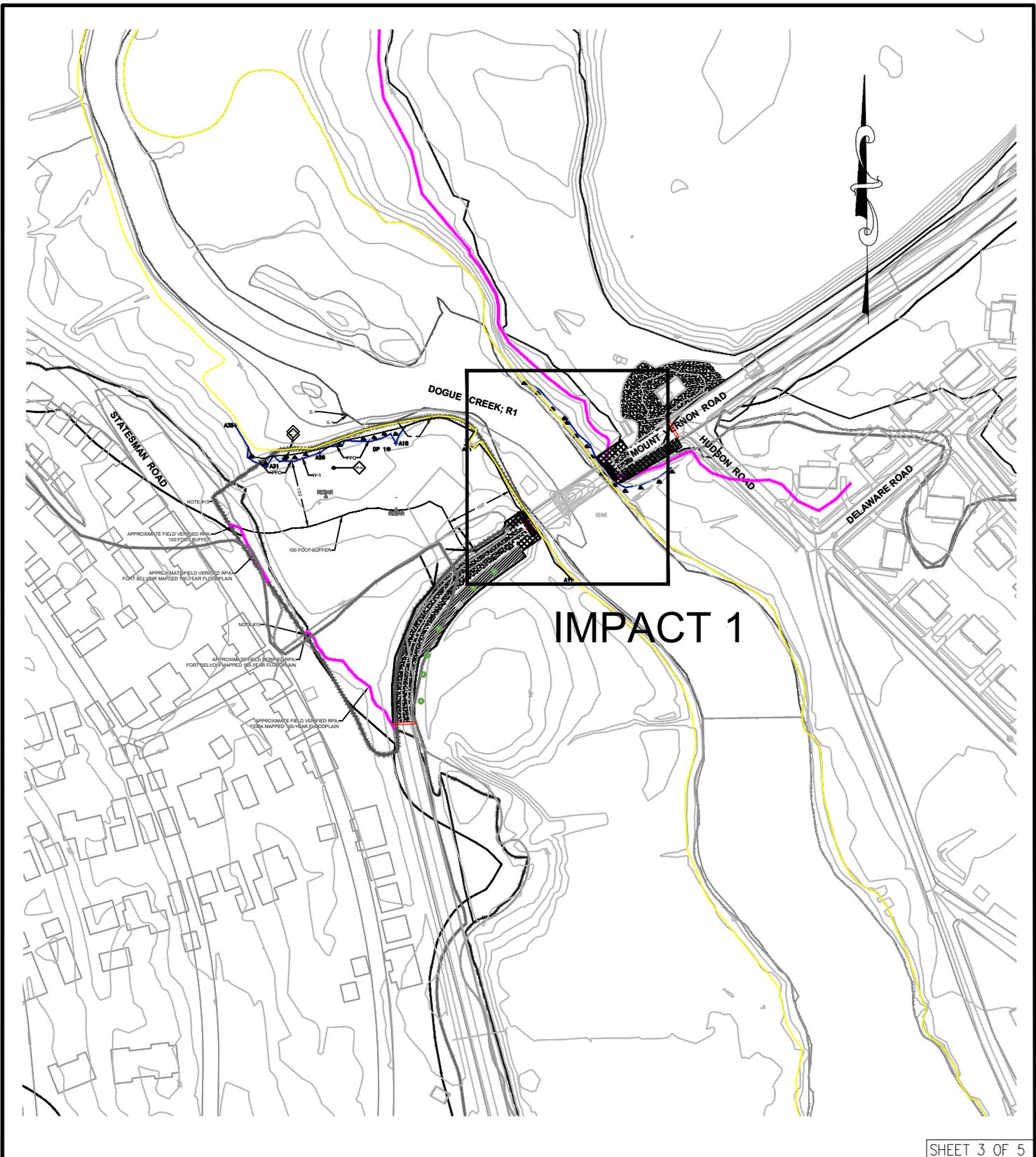


*ENGINEERS*  
*PLANNERS*  
*SCIENTISTS*  
*CONSTRUCTION MANAGERS*  
 936 RIDGEBROOK ROAD  
 SPARKS, MD 21152  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com

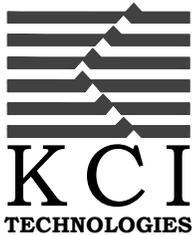
DATE DECEMBER 2019
SCALE NTS
DESIGNED BY JB
DRAWN BY AAW

**USA GARRISON FORT BELVOIR**  
 FAIRFAX COUNTY, VIRGINIA  
 SUPERSTRUCTURE REPLACEMENT OF BRIDGE NO. 1590 ON  
 MT. VERNON ROAD OVER DOGUE CREEK  
**LEGEND**

Dec.20, 2019 - 2:09pm User: amanda.wagoner  
 M:\2018\1901806729\Drawings\wetland\_files\Impact\_plates\Permit Plates.dwg



SHEET 3 OF 5



ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD  
 SPARKS, MD 21152  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com

DATE  
 DECEMBER 2019

SCALE  
 1" = 200'

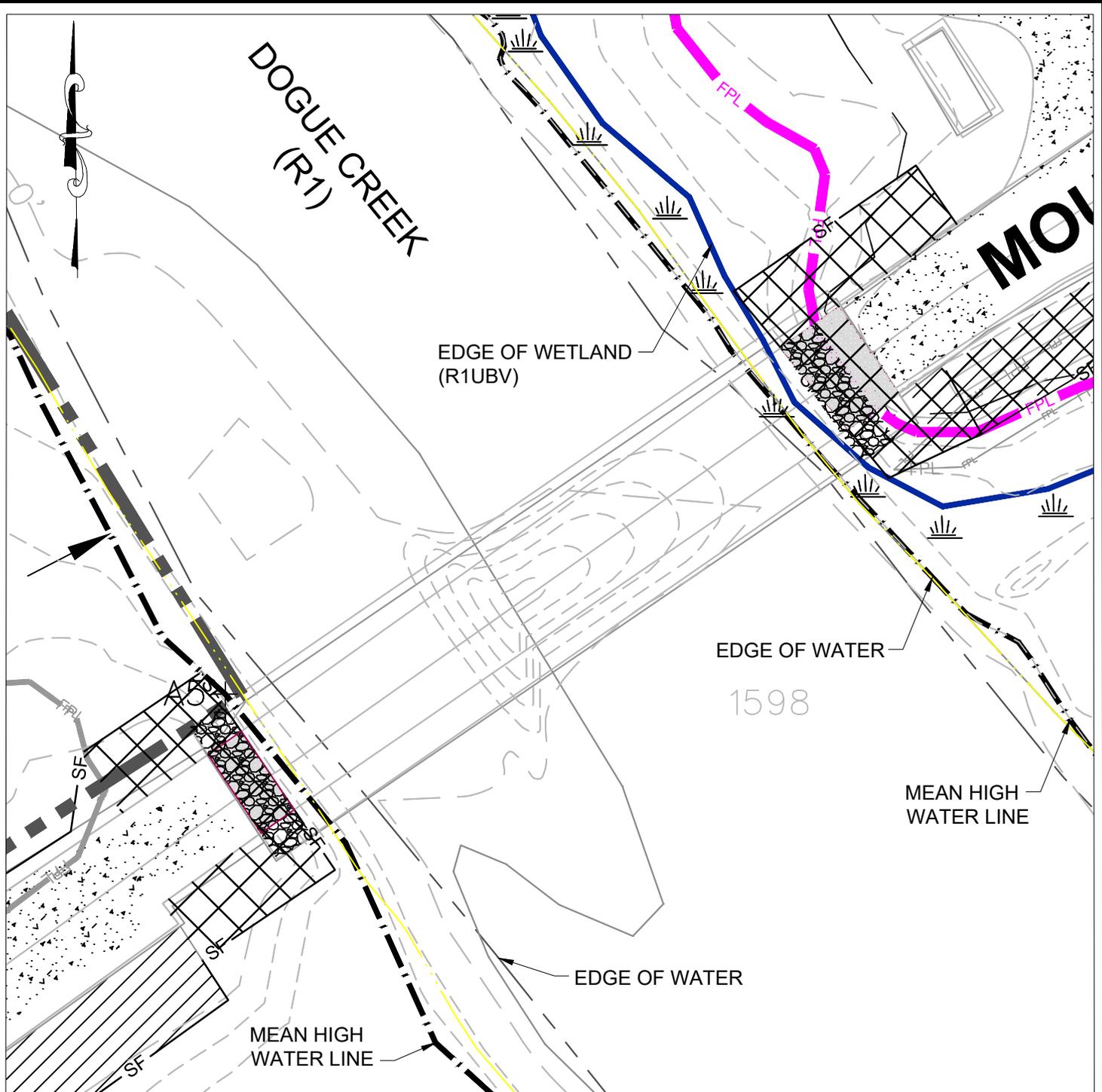
DESIGNED BY  
 JB

DRAWN BY  
 AAW

USA GARRISON FORT BELVOIR  
 FAIRFAX COUNTY, VIRGINIA  
 SUPERSTRUCTURE REPLACEMENT OF BRIDGE NO. 1590 ON  
 MT. VERNON ROAD OVER DOGUE CREEK

LOCATION MAP

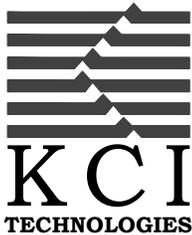
Dec.20, 2019 - 2:09pm User: amanda.wagoner  
 M:\2018\1901806729DB\Drawings\wetland files\Impact\_plates\Permit Plates.dwg



**NOTES:**

1. EXISTING BRIDGE IS BEING REPLACED IN-KIND AND FROM THE ROADWAY.
2. ALL WORK IS ABOVE THE MEAN HIGH WATER LINE.
3. NO WORK SHALL BE PERFORMED BELOW THE MEAN HIGH WATER LINE OR IN THE WETLAND.
4. THE SILT FENCE IS THE EXTENTS OF THE LIMIT OF DISTURBANCE.
5. 18,641 SF / 0.43 AC OF TEMPORARY FLOODPLAIN IMPACT.

SHEET 4 OF 5



ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD  
 SPARKS, MD 21152  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com

DATE  
 DECEMBER 2019

SCALE  
 1" = 30'

DESIGNED BY  
 JB

DRAWN BY  
 AAW

**USA GARRISON FORT BELVOIR**

FAIRFAX COUNTY, VIRGINIA

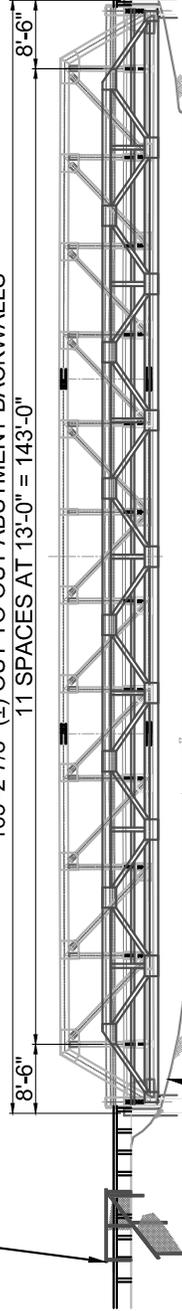
SUPERSTRUCTURE REPLACEMENT OF BRIDGE NO. 1590 ON  
 MT. VERNON ROAD OVER DOGUE CREEK

**IMPACT 1**

PROPOSED  
 W-BEAM  
 TRAFFIC  
 BARRIER  
 (TYP.)

EXISTING METAL  
 CHAIN LINK FENCE  
 (TYP.)

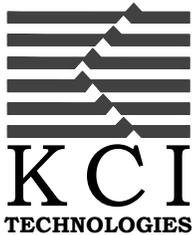
163'-2 7/8" (±) OUT TO OUT ABUTMENT BACKWALLS  
 11 SPACES AT 13'-0" = 143'-0"



MEAN HIGH  
 WATER LINE

APPROXIMATE  
 EXISTING  
 GROUND LINE

SHEET 12 OF 5



ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD  
 SPARKS, MD 21152  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com

DATE  
 DECEMBER 2019

SCALE  
 N.T.S.

DESIGNED BY  
 JB

DRAWN BY  
 AAW

# USA GARRISON FORT BELVOIR

FAIRFAX COUNTY, VIRGINIA

SUPERSTRUCTURE REPLACEMENT OF BRIDGE NO. 1590 ON  
 MT. VERNON ROAD OVER DOGUE CREEK

# PROFILE

Resource	Comment	Reviewer (Name & Office)	Action Needed/Taken
Soil Erosion	Please follow all local and state erosion and sediment ordinances and laws to reduce erosion and water quality issues.	J. David Harper, Natural Resource Conservation Service's, USDA	Noted. Thank you for your comments.
Wetlands and Water Quality	Letter dated May 1st, stated the following: Fort Belvoir will need to submit a WQIA. Following a phone call with between DPW Environmental Division and Daniel Moore, it was agreed upon that a WQIA was not needed.  Letter dated May 6th, stated the following: 9VAC25-830-150 B 1 exempts the construction, installation, operation, and maintenance of public roads and their appurtenant structures. This exemption extends to public roadway bridges. Provided adherence to the above requirements, particularly regarding minimizing land disturbance and impervious surfaces and preserving indigenous vegetation, the proposed activity would be consistent with the Chesapeake Bay Preservation Act and the Regulations.	Daniel Moore, VDEQ, Office of Local Government Programs	Daniel Moore agreed to use the Public Road CZMA exemption for this project, therefore this project does not need a WQIA as originally stated.
Fisheries Management and Wildlife Resources	Although shortnose sturgeon and Atlantic sturgeon originating from five Distinct Population Segments (DPS) are known to occur in the Potomac River and its tributaries, based on the activities associated with the project, the location of the project, and information you provided in the EA, we believe that these species will not be exposed to any direct or indirect effects of the action. Therefore, we do not believe a consultation in accordance with section 7 of the Endangered Species Act (ESA) is necessary. As such, no further coordination on this activity with the NMFS Protected Resources Division is necessary at this time. Should there be additional changes to the project plans or new information becomes available that changes the basis for this determination, further coordination should be pursued.	Brian Hopper, Protected Resources Division, NOAA Fisheries, Greater Atlantic Regional Fisheries Office	Thank you for the information in the comment. Should there be additional changes to the project plans or new information becomes available that changes the basis for this determination, Fort Belvoir will pursue further coordination.
Wetlands and Water Quality	The DEQ Northern Regional Office (NRO) states that a VWP permit from DEQ may be required. Upon receipt of a Joint Permit Application for proposed surface water impacts, DEQ VWP Permit staff will review the proposed project in accordance with the VWP permit program regulations and current VWP permit program guidance.  In general, DEQ recommends that stream and wetland impacts be avoided to the maximum extent practicable. To minimize unavoidable impacts to wetlands and waterways, DEQ recommends the following practices: - Operate machinery and construction vehicles outside of stream-beds and wetlands; use synthetic mats when in-stream work is unavoidable. - Preserve the top 12 inches of material removed from wetlands for use as wetland seed and root-stock in the excavated area. - Design erosion and sedimentation controls in accordance with the most current edition of the Virginia Erosion and Sediment Control Handbook. These controls should be in place prior to clearing and grading, and maintained in good working order to minimize impacts to state waters. The controls should remain in place until the area is stabilized. - Place heavy equipment, located in temporarily impacted wetland areas, on mats, geotextile fabric, or use other suitable measures to minimize soil disturbance, to the maximum extent practicable. - Restore all temporarily disturbed wetland areas to pre-construction conditions and plant or seed with appropriate wetlands vegetation in accordance with the cover type (emergent, scrub-shrub or forested). The applicant should take all appropriate measures to promote revegetation of these areas. Stabilization and restoration efforts should occur immediately after the temporary disturbance of each wetland area instead of waiting until the entire project has been completed. - Place all materials which are temporarily stockpiled in wetlands, designated for use for the immediate stabilization of wetlands, on mats or geotextile fabric in order to prevent entry in state waters. These materials should be managed in a manner that prevents leachates from entering state waters and must be entirely removed within thirty days following completion of that construction activity. The disturbed areas should be returned to their original contours, stabilized within thirty days following removal of the stockpile, and restored to the original vegetated state. - Clearly flag or mark all non-impacted surface waters within the project or right-of-way limits that are within 50 feet of any clearing, grading or filling activities for the life of the construction activity within that area. The project proponent should notify all contractors that these marked areas are surface waters where no activities are to occur. - Employ measures to prevent spills of fuels or lubricants into state waters.	Benjamin Holland, VDEQ, Northern Regional Office	Thank you for the information in the comment. Fort Belvoir submitted a Joint Permit Application to VMRC and DEQ. Letters were received from both agencies stating "no permit required".
Subaqueous Lands	Letter dated May 13th, stated the following: Since this project is sponsored by a federal agency with no fill proposed to State-owned submerged land, no permit is required from the Marine Resources Commission. For your information, you may need authorization from the U. S. Army Corps of Engineers, the Department of Environmental Quality (DEQ) and/or your local wetlands board prior to commencing your project. Your application has been forwarded to these agencies.	Mark Eversole, VA Marine Resources Commission	Noted. Thank you for your comments. VMRC has concurred via a letter dated May 13, 2020 from Mark Eversole, that since this project is sponsored by a federal agency with no fill proposed to State-owned submerged land, no permit is required from the Marine Resources Commission.

Resource	Comment	Reviewer (Name & Office)	Action Needed/Taken
Air Pollution Control	<p>The following requirements may be applicable to the proposed project.</p> <p>Fugitive Dust: During land-disturbing activities, fugitive dust must be kept to a minimum by using control methods outlined in 9VAC5-50-60 et seq. of the Regulations for the Control and Abatement of Air Pollution. These precautions include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>- Use, where possible, of water or suitable chemicals for dust control during the proposed demolition and construction operations and from material stockpiles;</li> <li>- Installation and use of hoods, fans and fabric filters to enclose and vent the handling of dusty materials;</li> <li>- Covering of open equipment for conveying materials; and</li> <li>- Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion.</li> </ul> <p>Open Burning: If project activities change to include the burning of vegetative debris, this activity must meet the requirements under 9VAC5-130 et seq. of the regulations for open burning, and it may require a permit. The regulations provide for, but do not require, the local adoption of a model ordinance concerning open burning. Contact officials with the locality to determine what local requirements, if any, exist.</p> <p>Fuel Burning Equipment: Fuel-burning equipment (generators, compressors, etc.) or any other air-pollution-emitting equipment may be subject to registration or permitting requirements.</p>	Kotur Narasimhan, VDEQ, Office of Air Data Analysis	Noted. Thank you for your comments. Fort Belvoir has reviewed the complete Air Quality Impact Analysis and corresponding RONA and GHG assessment. Fort Belvoir finds the documentation provided to be complete and acceptable.
Coastal Lands Management	<p>Section 9VAC25-830-140 of the Regulations describes development (and redevelopment) criteria for RPAs. Land development similar to the proposed action may be allowed in the RPA only if it is water-dependent, constitutes redevelopment, and/or is a road or driveway crossing through a RPA that satisfies 9VAC25-830-140 1 (d) of the Regulations. 9VAC25-830-150 B 1 exempts the construction, installation, operation, and maintenance of public roads and their appurtenant structures. This exemption extends to public roadway bridges.</p> <p>Federal actions on installations located within Tidewater Virginia are required to be consistent with the performance criteria of the Regulations on lands analogous to locally designated RPAs and RMAs, as provided in 9VAC25-830-130 and 140 of the Regulations, including compliance with the requirements of the Virginia Erosion and Sediment Control Handbook, and stormwater management criteria consistent with water quality protection provisions of the Virginia Stormwater Management Regulations. For land disturbance over 2,500 square feet, the project must comply with the requirements of the Virginia Erosion and Sediment Control Handbook. 9VAC25-830-130 of the Regulations specifically requires all proposed land development activities to meet the following three specific performance criteria: 1) no more land shall be disturbed than is necessary to provide for the proposed use or development; 2) indigenous vegetation shall be preserved to the maximum extent practicable, consistent with the use or development proposed; and 3) land development shall minimize impervious cover consistent with the proposed use or development.</p>	Daniel Moore, VDEQ, Office of Local Government Programs	Fort Belvoir acknowledges the information in your comment. The Virginia Department of Environmental Quality and the Virginia Pollution Discharge Elimination Systems reviews would ensure adherence to stormwater management measures and appropriate erosion and sediment controls to minimize non-point source pollution. All erosion and sediment controls would be designed in accordance with the Virginia Erosion and Sediment Control Regulations handbook, and would be implemented in accordance with the VSMP and the Virginia Department of Environmental Quality VSMP General Permit for Storm Water discharges associated with land disturbing activities.
Erosion and Sediment Control and Stormwater Management	<p>Erosion and Sediment Control and Stormwater Management Plans: The applicant and its authorized agents conducting regulated land-disturbing activities on private and public lands in the state must comply with VESCL&amp;R and VSMA and regulations, including coverage under the general permit for stormwater discharge from construction activities, and other applicable federal nonpoint source pollution mandates (e.g. Clean Water Act-Section 313, federal consistency under the Coastal Zone Management Act). Clearing and grading activities, installation of staging areas, parking lots, roads, buildings, utilities, borrow areas, soil stockpiles, and related land-disturbing activities that result in the total land disturbance of equal to or greater than 2,500 square feet in Chesapeake Bay Preservation Area would be regulated by VESCL&amp;R. Accordingly, the applicant must prepare and implement an erosion and sediment control (ESC) plan to ensure compliance with state law and regulations. Land-disturbing activities that result in the total land disturbance of equal to or greater than 1 acre (2,500 square feet in Chesapeake Bay Preservation Area) would be regulated by VSMA and regulations. Accordingly, the applicant must prepare and implement a Stormwater Management (SWM) plan to ensure compliance with state law and regulations. The ESC/SWM plan is submitted to the DEQ regional office that serves the area where the project is located for review for compliance. The applicant is ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliant sites, and other mechanisms consistent with agency policy (Reference: VESCL 62.1-44.15 et seq.).</p> <p>General Permit for Stormwater Discharges from Construction Activities (VAR10): The operator or owner of a construction project involving land-disturbing activities equal to or greater than one acre is required to register for coverage under the General Permit for Discharges of Stormwater from Construction Activities and develop a project-specific SWPPP. The SWPPP must be prepared prior to submission of the registration statement for coverage under the general permit and the SWPPP must address water quality and quantity in accordance with the VSMP Permit Regulations. General information and registration forms for the General Permit are available on DEQ's website at <a href="http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx">http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx</a> (Reference: VSMA 62.1-44.15 et seq.; VSMP Permit Regulations 9VAC 25-880 et seq.).</p>	Lawrence Gavan, VDEQ	Noted. Thank you for your comments.

Resource	Comment	Reviewer (Name & Office)	Action Needed/Taken
Solid and Hazardous Waste Management	<p>Test and dispose of any soil/sediment that is suspected of contamination (including petroleum contamination) or wastes that are generated during construction-related activities in accordance with applicable federal, state, and local laws and regulations.</p> <p>All structures being demolished or removed should be checked for asbestos-containing materials (ACM) and lead-based paint (LBP) prior to demolition. If ACM and LBP are found, in addition to the federal waste-related regulations mentioned above, state regulations 9VAC20-81-640 for ACM and 9VAC20-60-261 for LBP must be followed.</p> <p>Evaluate the identified petroleum release to determine its ability to affect the project site. DEQ encourages all projects to implement pollution prevention principles, including:</p> <ul style="list-style-type: none"> <li>- the reduction, reuse and recycling of all solid wastes generated; and</li> <li>- the minimization and proper handling of generated hazardous wastes.</li> </ul>	Carlos Martinez, VDEQ, Division of Land Protection and Revitalization	<p>Noted. Thank you for your comments. As stated in the EA under Section 3.14.1: Fort Belvoir conducts its hazardous waste management program in compliance with RCRA. The installation has a Hazardous Waste Management/Waste Minimization Plan and a Master Spill Plan. Fort Belvoir complies with EO 13834, Efficient Federal Operations, by promoting the use of products to reduce solid and hazardous waste.</p> <p>Per Army policy, 60% of the construction debris must be recycled and/or diverted from landfill disposal.</p>
Natural Heritage Resources	Contact the DCR DNH and re-submit project information and a map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.	Roberta Rhur, VDCR	Fort Belvoir will contact the DCR DNH and re-submit project information and a map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.
Floodplain Management	<p>Projects conducted by federal agencies within the SFHA must comply with Executive Order 11988: Floodplain Management.</p> <p>For federal projects, DCR encourages the applicant/developer to reach out to the local floodplain administrator and comply with the community's local floodplain ordinance. If the project is located in the Special Flood Hazard Area (SFHA), DCR recommends that this project comply with the community's local floodplain ordinance. To find flood zone information, use the Virginia Flood Risk Information System (VFRIS): <a href="http://www.dcr.virginia.gov/vfris">www.dcr.virginia.gov/vfris</a>.</p>	Roberta Rhur, VDCR	Noted. Thank you for your comments. As stated in the EA under Section 3.4.2.2 Wetlands: The Proposed Action is located within the 100-year floodplain, but would not result in an impact to the floodplain with regard to water storage capacity or elevation. The Proposed Action would not involve building a new structure in the floodplain, but rather, replacing a structure with the same footprint. The rehabilitated bridge would continue to lie in the one percent annual chance coastal flood hazard area, but would not result in any increases to flood elevations on Dogue Creek. A Finding of No Practicable Alternative (FONPA) is not required.
Water Supply	<p>Potential impacts to public water distribution systems must be verified by the local utility, according to VDH.</p> <p>There are no public groundwater wells within a 1-mile radius of the project site.</p> <p>There are no surface water intakes located within a 5-mile radius of the project site.</p> <p>The project is not within the watershed of any public surface water intakes.</p> <p>There are no apparent impacts on public drinking water sources due to this project.</p>	Arlene Warren, VDH, Office of Drinking Water	Noted. Thank you for your comment. The project is not anticipated to impact public water distribution systems.
Historic Resources	DHR recommends that the Army of its responsibility to conclude the Section 106 process for this undertaking by providing DHR a final MOA for DHR's signature.	Marc Holma, DHR, Division of Review and Compliance	Noted. Thank you for your comment. The Final MOA will be mailed to SHPO for signature.
Pesticides and Herbicides	In general, when pesticides or herbicides must be used, their use should be strictly in accordance with manufacturers' recommendations. In addition, we recommend that the applicable use the least toxic pesticides or herbicides effective in controlling the target species to the extent feasible. For more information on pesticide or herbicide use, contact VDACS (804-371-6560).	VDACS	Noted. Thank you for your comment.
Energy Conservation	<p>Architectural and engineering designers should consider incorporating the energy, environmental, and sustainability concepts listed in the Leadership in Energy and Environmental Design (LEED) Green Building Rating System into the development and procurement of their projects.</p> <p>Please contact Department of Mines, Minerals and Energy (David Spears at 434-951-6350) for additional information on energy conservation measures. For more information on the LEED rating system, visit <a href="http://www.leadbuilding.org">www.leadbuilding.org</a>.</p>	David Spears, VDEQ, Department of Mines, Minerals and Energy	Noted. Thank you for your comments.

Resource	Comment	Reviewer (Name & Office)	Action Needed/Taken
Pollution Prevention	<p>We have several pollution prevention recommendations that may be helpful in constructing or operating this facility:</p> <ul style="list-style-type: none"> <li>- Consider development of an effective Environmental Management System (EMS). An effective EMS will ensure that the proposed facility is committed to complying with environmental regulations, reducing risk, minimizing environmental impacts, setting environmental goals, and achieving improvements in its environmental performance. DEQ offers EMS development assistance and recognizes facilities with effective Environmental Management Systems through its Virginia Environmental Excellence Program (VEEP). VEEP provides recognition, annual permit fee discounts, and the possibility for alternative compliance methods.</li> <li>- Consider environmental attributes when purchasing materials. For example, the extent of recycled material content, toxicity level, and amount of packaging should be considered and can be specified in purchasing contracts.</li> <li>- Consider contractors' commitment to the environment when choosing contractors. Specifications regarding raw materials and construction practices can be included in contract documents and requests for proposals.</li> <li>- Choose sustainable materials and practices for building construction and design.</li> </ul>	VDEQ, Office of Pollution Prevention	Noted. Thank you for your comments.
Transportation Impacts	<p>If the closure of the bridge will require maintenance of traffic and detours on state-maintained roadways, then a VDOT permit would be required. This request must include submission of maintenance of traffic and detours plans to be reviewed by VDOT.</p> <p>Since the bridge is located on a section of the roadway not maintained by VDOT a Land Use Permit would not be required for the work.</p>	Cina Dabestani, VDOT, Transportation Planning	Noted. Thank you for your comments.
Fisheries Management and Wildlife Resources	<p>To best protect listed bats from harm associated with tree removal, trimming, timbering, DGIF recommends that such activities adhere to a time-of-year restriction from April 1 through October 31 of any year.</p> <p>DGIF recommends that the Army provide the wood turtle habitat assessment for Dogue Creek be provided to DGIF for review so that DGIF can concur that the project is not likely to result in adverse impacts upon them. Until DGIF is in receipt of this information, DGIF must recommend that all activities in naturally vegetated uplands or wetlands located within 900 feet of Dogue Run adhere to a time-of-year restriction from April 1 through September 30 of any year. If any instream work becomes necessary, DGIF recommends additional coordination with regarding potential impacts upon wood turtles. DGIF also recommends that prior to the commencement of work all contractors associated with work at this site be made aware of the possibility of encountering wood turtles on site and become familiar with their appearance, status and life history. An appropriate information sheet / field observation form to distribute to contractors and employees is attached. If any wood turtles are encountered and are in jeopardy during the development or construction of this project, remove them from immediate harm and contact DGIF. If staff on site hold an appropriate Threatened and Endangered Species Scientific Collection Permit, this staff member may relocate wood turtles out of harm's way and into suitable habitat, preferably within the nearest perennial stream. Any relocations should be reported to DGIF. Further information about wood turtles can be found online at: <a href="https://www.dgif.virginia.gov/wildlife/information/wood-turtle/">https://www.dgif.virginia.gov/wildlife/information/wood-turtle/</a>.</p> <p>If any instream work becomes necessary, coordinate with DGIF regarding potential impacts upon anadromous fishes.</p> <p>To ensure protection of bald eagles in compliance with the Bald and Golden Eagle Act, DGIF recommends using the Center for Conservation Biology (CCB) Eagle Nest Locator to determine if any active eagle nests are known from the project area. If active bald eagle nests have been documented from the project area, DGIF recommends that the project move forward in a manner consistent with state and federal guidelines for protection of bald eagles and coordination, as indicated, with the U.S. Fish and Wildlife Service regarding possible impacts upon bald eagles or the need for a federal bald eagle take permit.</p> <p>DGIF recommends adherence to the installation's currently approved Integrated Natural Resources Management Plan.</p> <p>To minimize the adverse impacts of linear utility/road project development on wildlife resources, DGIF has the following recommendations regarding development activities:</p> <ul style="list-style-type: none"> <li>- Avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable.</li> <li>- Maintain undisturbed naturally vegetated buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial and intermittent streams.</li> <li>- Maintain wooded lots to the fullest extent possible.</li> <li>- Conduct significant tree removal and ground clearing activities outside of the primary songbird nesting season of March 15 through August 15.</li> <li>- Implement and maintain appropriate erosion and sediment controls throughout project construction and site restoration.</li> <li>- To minimize potential wildlife entanglements resulting from use of synthetic/plastic erosion and sediment control matting, use matting made from</li> </ul>	Amy Ewing, VDGIF, Fish and Wildlife Information Services	<p>Thank you for the information in the comment.</p> <p>The wood turtle habitat assessment for Dogue Creek will be provided to DGIF for review to receive concurrence that the project is not likely to result in adverse impacts upon them.</p>

Resource	Comment	Reviewer (Name & Office)	Action Needed/Taken
Local Coordination	<p>Additional information from the county is attached. Fairfax County has the following recommendations:</p> <ul style="list-style-type: none"> <li>- Fairfax County requests that the Army follow the floodplain management requirements contained in Fairfax County Zoning Ordinance, Article 2, Part 9, Floodplain Regulations and notify the county of any floodplain changes that might impact Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps.</li> <li>- Fairfax County asks that the Army consider the County's Chesapeake Bay Preservation Ordinance as described in Chapter 118 of the County Code, including conformance with the requirements for areas designated as RPAs and RMAs.</li> <li>- It is recommended that project staff coordinate with the county Department of Public Works and Environmental Services regarding mitigation procedures. Additionally, staff recommends that the Army schedule briefings before the Fairfax County Wetlands Board regarding any proposed actions affecting tidal wetlands, freshwater wetlands, and floodplains, to include project impacts and remediation measures.</li> <li>- Fairfax County is aware of a hydrologic study that VDOT performed as part of the Route 1 Corridor Improvement Project. It is recommended that the Army coordinate with VDOT to ensure the latest/best available data be used to evaluate the stream flows for Dogue Creek. The latest study performed by VDOT may show a change in stream flow that may impact the FEMA Flood Insurance Study published flow and related base flood elevations.</li> <li>- It is recommended that this project protect against removal of as much vegetation as possible. Replanting for areas that may have been disturbed during construction should utilize native plant species.</li> <li>- The Army has committed to using erosion and sediment control features. It is further recommended that a variety of filters, sediment blankets and silt fencing be used and maintained throughout the project as recommended by engineers on-site and from the manufacturers.</li> <li>- This proposed project is located within the Fairfax County Woodlawn Historic Overlay District. The Fairfax County Architectural Review Board provided comments and requested that the Army consider using a gray paint color for the new bridge.</li> <li>- The Fairfax County Park Authority requested that the attached Archaeological Survey Data Form be completed within 30 days of May 20, 2020.</li> </ul>	Leanna O'Donnell, Fairfax County Department of Planning and Development	Thank you for the information in the comment. Fort Belvoir has communicated with Ms. Elizabeth Crowell (Fairfax County Cultural Resources Branch Manager) regarding the completion of the Archeological Survey Data Form. Ms. Crowell confirmed Fort Belvoir that they not have to submit the form.
Local Coordination	<p>Please note that the Army should submit the project for preliminary and final review by the Commission prior to advertisement and award of construction contracts. As the project is not in the current 2015 Fort Belvoir Vision and Development Plan, NCPC must refer the project out to local and State planning agencies for comment prior to preliminary Commission review based on our submission policies.</p> <p>NCPC staff has reviewed the final EA and we do not have any additional comments for Army consideration at this time. We support the need for the project to improve safety conditions for vehicle and pedestrian traffic, and we note that the EA anticipates negligible to minor adverse impacts for each impact area with the exception of moderate impacts to the bridge. It is our understanding that the Army and Virginia State Historic Preservation Office have determined the project will have an adverse effect on the Dogue Creek Bridge as the bridge is a historic resource. The EA describes the significance of the bridge as representative of technology, techniques, and materials utilized in bridge construction by the Army during the 1940s and 1950s, and one of the few surviving mid-20th Century bridges of its kind in Virginia. Proposed project mitigation would be implemented pursuant to a Memorandum of Agreement (MOA) between Fort Belvoir and Virginia State Historic Preservation Office. Please include a copy of the signed MOA and FONSI in future project submissions to NCPC.</p>	Diane Sullivan, NCPC Director, Urban Design and Plan Review Division	Thank you for the information in the comment. Fort Belvoir will submit the project for preliminary and final review by the Commission prior to advertisement and award of construction contracts, and include a copy of the signed MOA and FONSI in future project submissions to NCPC.

**APPENDIX C – AIR QUALITY RECORD OF NON-APPLICABILITY**

**APPENDIX C  
GENERAL CONFORMITY – RECORD OF NON-APPLICABILITY**

<b>Project/Action Name:</b>	<b>Dogue Creek Bridge Rehabilitation</b>
<b>Project/Action Point of Contact:</b>	<b>Robin Ernstrom, P.E., Fort Belvoir</b>
<b>Begin Date (Anticipated): 2020</b>	<b>End Date (Anticipated): Seven months after commencement</b>

General Conformity under the Clean Air Act, Section 176 has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this project/action because the total project emissions (presented as tons per year) which occur in less than a year have been estimated to be:

**Total Project Emissions**

Volatile Organic Compounds (VOC)	0.84 tons per year (tpy)
Nitrogen Oxides (NO <sub>x</sub> )	10.16 tpy
Sulfur Oxides (SO <sub>x</sub> )	0.004 tpy
Carbon Monoxide (CO)	2.25 tpy
Particulate Matter Less than 2.5 μm (PM <sub>2.5</sub> )	0.72 tpy

These emission rates, including any combination of PM<sub>2.5</sub> and its potential precursors (i.e., NO<sub>x</sub>, SO<sub>x</sub>, and VOC), are below the conformity threshold values established at 40 CFR 93.153(b):

**Conformity Threshold Rate**

VOC	50 tpy
NO <sub>x</sub>	100 tpy
SO <sub>x</sub>	100 tpy
CO	100 tpy
PM <sub>2.5</sub>	100 tpy

Supporting documentation and emissions estimates are attached.

SIGNED

*Michael H. Greenberg*

Michael H. Greenberg  
Colonel, US Army  
Commanding

## SUPPORTING DOCUMENTATION

### Description of Project/Action:

The Proposed Action entails rehabilitating Dogue Creek Bridge by removing and replacing the bridge's superstructure. The bridge's substructure will remain in place. The Proposed Action would involve the following:

- Set up detour route and close bridge to vehicular and pedestrian traffic;
- Install traffic barricades on the east and west sides of existing bridge;
- Trim trees (grubbing not anticipated);
- Remove existing truss bridge and sidewalk structure;
- Clear dirt and debris from abutment beam seats;
- Replace existing bearings;
- Set new bridge superstructure;
- Replace concrete sidewalks at east and west ends of bridge walkway (replace existing concrete sidewalk with new sidewalk);
- Install new W-beam guardrail on bridge and approaches (existing W-beam traffic barrier would be removed); and
- Relocate existing utilities.

Removal and replacement of the superstructure would be completed by use of an approximately 30-foot tall crane placed on Mount Vernon Road. The existing truss bridge would be removed in separate pieces and laid on Mount Vernon Road just behind the crane. This laydown area would also be used for material storage, material handling, bridge assembly and disassembly. The area just south of the laydown area would be used for further material storage, a turnaround for equipment and a secondary crane location. This adjacent area would also be used for a convex for tools, equipment and fuel storage and parking for construction employees.

Personnel of PRIME AE Group, Inc. conducted an inspection of the Dogue Creek Bridge on 14 November 2018. A report was prepared in February 2019. According to this inspection, Dogue Creek Bridge is in poor condition. If action is not taken, the bridge will continue to deteriorate and will eventually be unsafe for vehicle and/or pedestrian traffic. This situation could either result in closure of the bridge due to safety concerns or a potentially catastrophic failure causing injury or fatality. The approximately 68 acre parcel of South Post located east of Dogue Creek will be isolated from the main portion of South Post, resulting in the loss of Walker Gate as an access point to all of South Post and increasing traffic at the other South Post access points. Walker Gate would serve only as an access point for River Village and the marina facilities.

The purpose of the Proposed Action is to prevent further deterioration of the Dogue Creek Bridge by repairing and rehabilitating it to meet the National Bridge Inspection Standards and Army Regulation (AR) 420-1. Repairing and rehabilitating the bridge will improve safety conditions for vehicle and pedestrian traffic. With Dogue Creek Bridge remaining in place and safe for vehicle and pedestrian traffic, traversing Dogue Creek will continue to be possible for

the people who use Walker Gate as an access point to South Post, the residents of River Village, and patrons of the marina.

### **Analysis Methodology:**

Analysis was performed related to the projected air emissions associated with equipment to be used in the implementation of the proposed bridge rehabilitation. Published emission rates for representative equipment were obtained from EPA sources and incorporated into an Excel spreadsheet developed for this analysis. Emission estimation methodology and information was obtained from the following sources: *Exhaust Emission Factors for Nonroad Engine Modeling – Spark Ignition*, US EPA, Report Number EPA-420-R-10-019, NR-010f, July 2010; and *AP-42, Compilation of Air Pollutant Emission Factors, Section 3-3 Gasoline and Diesel Industrial Engines (10/96)*. The spreadsheet quantifies emissions from the operation of the equipment to be employed in demolition and construction activities at the facility. The emissions were then compared to the applicable regulatory thresholds.

### **Input Parameters and Assumptions:**

Below are the project-specific parameters entered for the proposed project, which includes the following related activities:

#### Project Equipment on Site:

- Chainsaws for tree trimming
- Crane to lift and remove/install side trusses to the disassembly area
- Mobile Telehandler to lift and remove/install small sections of the sidewalk, bridge deck and floor beams
- Dump Truck to remove bridge sections and debris from site

#### Air Emissions from Site Activities:

- Chainsaws use – emissions estimated for evaporative gasoline use and fuel combustion
- Crane, Mobile Telehandler, and Dump Trucks with diesel engines – emissions limited to fuel combustion
- Fugitive dust emissions due to land disturbance will be negligible and were not quantified

The following assumptions were made for this project:

- A five-day work week and a 4-week work-month (20 monthly work days)
- Equipment operation of 12 hours per workday (240 equipment-hours per month)
- All tree trimming would be conducted by heavy equipment
- All construction equipment is assumed to be diesel fuel powered

- PM<sub>2.5</sub> will be a fraction of the PM<sub>10</sub> emissions; to be conservative, it was assumed that PM<sub>10</sub> is equal to PM<sub>2.5</sub>. Therefore, if application of the emission factors available for PM<sub>10</sub> indicates the predicted PM<sub>10</sub> emissions do not exceed regulatory thresholds, then neither will PM<sub>2.5</sub> emissions.

**Results:**

Estimated Calculations

The below emission estimates are from the Excel spreadsheet developed for this project.

<b>Emissions Summary</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>CO</b>	<b>PM<sub>10</sub>/PM<sub>2.5</sub></b>
<b>TOTAL Tons</b>	<b>0.84</b>	<b>10.16</b>	<b>0.004</b>	<b>2.25</b>	<b>0.72</b>

ESTIMATED AIR EMISSIONS FOR DOGUE CREEK BRIDGE REHABILITATION PROJECT

<b>Pollutant - Lbs</b>	<b>CO</b>	<b>NOx</b>	<b>PM10/PM2.5</b>	<b>SO2</b>	<b>VOC</b>	<b>CO2</b>
<b>Chainsaws</b>	131.8	0.2	2.0	0.0	40.6	209
<b>Support Equipment</b>	4,376.7	20,311.2	1,441.4	8.0	1,645.2	753,480
<b>TOTAL, Lbs for project</b>	4,508.6	20,311.4	1,443.4	8.0	1,685.8	753,689.2

<b>Pollutant - Tons</b>	<b>CO</b>	<b>NOx</b>	<b>PM10/PM2.5</b>	<b>SO2</b>	<b>VOC</b>	<b>CO2</b>
<b>Chainsaws</b>	0.07	0.000	0.00	0.0000	0.02	0.10
<b>Support Equipment</b>	2.19	10.16	0.72	0.004	0.82	376.74
<b>TOTAL, tons for project</b>	2.25	10.16	0.72	0.004	0.84	376.8

Metric Tons 342.6

**Diesel Engine Exhaust Emissions**

Equipment supporting the tree removal process:

1. Mobile Telehandler - Caterpillar TL1055 (or similar) for lifting and removing/installing small sections of the sidewalk, bridge deck and floor beams; estimated at 140 hp diesel engine, operating 12 hours per day
2. Crane - 30' crane for lifting and removing/installing side trusses to the disassembly area; estimated at 225 hp diesel engine, operating 12 hours per day
3. Dump Truck - Off-highway truck to remove bridge sections and debris from site; estimated at 275 hp diesel engine, operating onsite 12 hours per day

**Emission Factors**

Emission estimates based on EPA's *AP-42 Compilation of Air Pollutant Emission Factors*, Chapter 3.3 Gasoline and Diesel Industrial Engines (10/1996).

Unit		Pollutants	CO	NOx	PM10/PM2.5	SO2	VOC	CO2
	HP	Emission Rate	0.01	0.03	0.0022	0.00001	0.0025	1.15
		lb/hp-hr						
Telehandler	140	Emissions	0.94	4.34	0.31	0.002	0.35	161.0
Crane	225	Emissions	1.50	6.98	0.50	0.0027	0.56	258.8
Truck	25	lbs/hour	0.17	0.78	0.06	0.000	0.06	28.8
	Hours/day							
Chipper	12	Emissions	11.2	52.1	3.7	0.020	4.2	1932.0
Loader	12	Emissions	18.0	83.7	5.9	0.033	6.8	3105.0
Truck	12	lbs/day	2.0	9.3	0.7	0.00	0.8	345.0
TOTAL			31.3	145.1	10.3	0.06	11.8	5382.0
		Days						
Project Support Equipment		140	4,376.7	20,311.2	1,441.4	8.0	1,645.2	753,480.0
TOTAL								

## Emission Estimates for Chainsaws

### Exhaust Emissions

0

#### References:

(1) *Exhaust Emission Factors for Nonroad Engine Modeling - Spark-Ignition*; EPA Report No. EPA-420-R-10-019, NR-010f, July 2010

(2) *Nonroad Evaporative Emission Rates*; EPA Report No. EPA-420-R-10-021, NR-012d, July 2010

<b>Source</b>	Chainsaw	Size	91.1 cc	bHp	7.2	Tank Size	oz.	27.9	equiv. gal	0.22
	SCC	226007005	Chain Saws > 6 Hp							

### Operating Scenario

Tree trimming crew onsite operating two saws intermittently during daily 8 hour shift over two day period. Equivalent operation estimated to be equivalent to 8 hours per day for single saw for a total of 16 hours of individual saw operation.

Saw Operating Days	2	Chainsaw onsite days (2/day)	4
Saw Operating Hours	16	Chainsaw onsite hours (2/day, 8 hr/day each)	32

### Exhaust Emissions

Emission Factors	HC	CO	NOx	PM	BSFC (lbs/hp-hr)	CO2	SO2	Source
gm/hp-hr	159.58	519.02	0.97	7.7	0.921	823.6	0.167	Ref 1, Table 3 (page 6) and CO2 and SO2 calculations on pages 16 - 17
gm/hour	1149	3737	7	55		5930	1.20	
lbs/hour	2.53	8.24	0.02	0.12	6.63	13.07	0.003	
Lbs Total	40.5	131.8	0.2	2.0	106.1	209.2	0.0	

CO2 = [BSFC x 453.6 gm/lb - HC (gm/hp-hr)] x 0.87 CMF x 44 lbs CO2 / 12 lb carbon  
 SO2 = [BSFC x 453.6 gm/lb x (1 - SOXCNF) - HC] x 0.01 x SOXBAS x 2  
 BSFC = Brake-specific fuel consumption rate  
 CMF = carbon mass fraction for gasoline and diesel fuels of 0.87  
 SOXCNF = fraction of sulfur converted to particulate matter, 0.03 for gasoline  
 SOXBAS = sulfur content in the fuel, 0.0339 for gasoline

**Evaporative Emissions**

Evaporative emissions are associated with hydrocarbons released by evaporation from equipment. EPA has developed methodologies to estimate emissions that result from the diurnal changes in temperature during equipment use, the permeation through the tank and hose in the fuel system, running losses from the heating due to equipment operation, and hot soak conditions after the equipment is shutdown. These conditions are considered applicable to chainsaw use and would apply to all the saws on site.

**Emission Factors**

**Diurnal Emissions**

From daily temperature changes causing in expansion and contraction of fuel volumes (i.e., breathing losses). Calculated based on application of Wade Equations from Reference 2 (Appendix B).

$\text{Vapor space (ft}^3\text{)} = [(1.15 - \text{tank fill}) \times \text{tank size}] / 7.481 \text{ gal/ft.}^3$ <p>where:</p> <p style="margin-left: 40px;">Tank fill:        0.5 (assume 50%)</p> <p style="margin-left: 40px;">Tank size:    0.22        gallons</p> <p style="margin-left: 40px;">Vapor space = 0.019        ft.<sup>3</sup></p>	Equation B-1
$T1(^{\circ}\text{F}) = (\text{Tmax} - \text{Tmin}) \times 0.922 + \text{Tmin}$ <p>where:</p> <p style="margin-left: 40px;">Tmax:        maximum expected diurnal temperature (°F)        assume        95</p> <p style="margin-left: 40px;">Tmin:        minimum expected diurnal temperature (°F)        assume        65</p> <p style="margin-left: 40px;">T1(°F) =        92.7        (°F)</p>	Equation B-2
$V_{100} \text{ (psi)} = 1.0223 \times \text{RVP} + [(0.0357 \times \text{RVP}) / (1 - 0.0368 \times \text{RVP})]$ <p>where:</p> <p style="margin-left: 40px;">V<sub>100</sub> (psi)    calculated vapor pressure at 100°F</p> <p style="margin-left: 40px;">RVP        Reid Vapor Pressure of the fuel        for gasoline, assume        7.8</p> <p style="margin-left: 40px;">V<sub>100</sub> =        8.365        psi</p>	Equation B-3
$E_{100} \text{ (\%)} = 66.401 - 12.718 \times V_{100} + 1.3067 \times V_{100}^2 - 0.077934 \times V_{100}^3 + 0.0018407 \times V_{100}^4$ <p>where:</p> <p style="margin-left: 40px;">E<sub>100</sub> (%) =    percent fuel evaporated at 100°F</p> <p style="margin-left: 40px;">E<sub>100</sub> (%) =    14.8</p>	Equation B-4

$D_{min} (\%) = E_{100} + [(262 / (0.1667 \times E_{100} + 560) - 0.113) \times (100 - T_{min})]$	Equation B-5a
$D_{max} (\%) = E_{100} + [(262 / (0.1667 \times E_{100} + 560) - 0.113) \times (100 - T_1)]$	Equation B-5b
where: $D_{min/max} =$ distillation percent at the maximum and minimum temperatures in the fuel tank $D_{min} =$ 26.5 $D_{max} =$ 17.3	
$P_i(\text{psi}) = 14.697 - 0.53089 \times D_{min} + 0.0077215 \times D_{min}^2 - 0.000055631 \times D_{min}^3 + 0.0000001769 \times D_{min}^4$ $P_f(\text{psi}) = 14.697 - 0.53089 \times D_{max} + 0.0077215 \times D_{max}^2 - 0.000055631 \times D_{max}^3 + 0.0000001769 \times D_{max}^4$	Equations B-6a & B-6b
where: $P_{i/f} (\text{psi}) =$ initial and final pressures $P_i =$ 5.10 psi $P_f =$ 7.55 psi	
Density (lbs/gallon) = 6.386 - 0.0186 x RVP RVP = 7.8 Density = 6.241 lbs/gallon	Equation B-7
MW (lb/lb mole) = (73.23 - 1.274 x RVP) + [0.5 x (T <sub>min</sub> + T <sub>1</sub> ) - 60] x 0.059 where: MW = calculated molecular weight based on RVP MW = 64.4 lb/lb mole	Equation B-8
Diurnal Emissions (grams) = vapor space x 454 x density x [520 / (690 - 4 x MW)] x 0.5 x [P <sub>i</sub> / (14.7 - P <sub>i</sub> ) + P <sub>f</sub> / (14.7 - P <sub>f</sub> )] x [(14.7 - P <sub>i</sub> ) / (T <sub>min</sub> + 460) - (14.7 - P <sub>f</sub> ) / (T <sub>1</sub> + 460)]	Equation B-9
Diurnal Emissions = 0.27 grams/day	
Total Diurnal Emissions = 0.0006 lbs/day saw days 4	0.00 lbs Diurnal Emissions
Permeation Emissions	
Emissions estimated for vapor released as a result of permeation through tank and hose.	
Tank permeation rate from Reference 2, Table 2 (page 12) for nylon tanks used by chainsaws	
Gms/m <sup>2</sup> /day	1.25
Tank Surface Area, m <sup>2</sup>	0.1 based on Reference 2, Table E1 for 0.22 gallon tank
Tank Perm. Emissions	0.125 gms/day

Hose permeation rate from Reference 2, Table 7 (page 17) and temperature adjustment (page 16)							
Rate, Gms/m <sup>2</sup> /day	140						
Temperature Correction Factor (TCF)				TCF = 0.06014 x EXP (0.0385 x T <sub>ave</sub> )			
T <sub>ave</sub> °F	Ave temp.	assume	80	TCF	1.31		
Hose Dimensions, m.	0.061	length		0.006354	diameter	Ref. (2), Table A3 (page A30)	
Hose Surface Area, m <sup>2</sup>	π x Length x Diam.			0.001218	m <sup>2</sup>		
Hose Perm. Emissions = rate x TCF x Area							
Hose Perm. Emissions	0.22	gms/day					
Tank and Hose Permeation Emissions =	0.35	gms/day					
Total Permeation Emissions =	0.0008	lbs/day	saw days	4	0.00	lbs Permeation Emissions	

Running Emissions

Emissions estimated for vapor released as a result of heating caused by the running of the engine.							
Running emission rate from Reference 2, Table 11 (page 25) for Trimmer/Edger. Factor for Trimmer/Edger recommended for applicability to Chainsaws in Appendix G, Table G6 (page G7)							
Rate, gm/hour	0.58						
Running Emissions	4.64	gms/day					
Total Running Emissions =	0.010	lbs/day	saw days	4	0.04	lbs Running Emissions	

Hot Soak Emissions

Hot soak emissions occur when the engines are shutdown for sufficient time and allowed to cool							
Hot soak emissions rate from Reference 2, Table 13 (page 27)							
Rate, gms per start	0.27						
Starts hour of Use	0.25	From Reference 2, Table H5 (H6)					
Hot Soak Emissions	0.0675	gms/operating hour					
Total Hot Soak Emissions =	0.00015	lbs/op. hour	saw op. hour	16	0.00	lbs Hot Soak Emissions	

**Total Evaporative Emissions**

0.05	Lbs Evaporative VOC Emissions
------	-------------------------------

Total Chain Saw Emissions	HC	CO	NOx	PM	CO2	SO2
Exhaust, lbs	40.5	131.8	0.2	2.0	209.2	0.0
Evaporative, Lbs	0.0	-	-	-	-	-
<b>TOTAL, lbs</b>	40.6	131.8	0.2	2.0	209.2	0.0

**APPENDIX D – DRAFT JOINT PERMIT APPLICATION**

# STANDARD JOINT PERMIT APPLICATION



United States Army Corps of Engineers (USACE) - Norfolk District  
803 Front Street, ATTN: CENAO-R  
Norfolk, Virginia 23510-1096  
Phone: (757) 201-7652, Fax: (757) 201-7678  
Websites:  
<http://www.nao.usace.army.mil/Technical%20Services/Regulatory%20Branch/homepage.asp>  
<http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/varegions.htm>



Virginia Marine Resources Commission (VMRC)  
Habitat Management Division  
2600 Washington Avenue, 3<sup>rd</sup> Floor  
Newport News, Virginia 23607-0756  
Phone: (757) 247-2200, Fax: (757) 247-8062  
Website: <http://www.mrc.virginia.gov/index.htm>



Virginia Department of Environmental Quality (DEQ)  
Virginia Water Protection Program  
Post Office Box 1105  
Richmond, Virginia 23218  
Phone: (804) 698-4000, Fax: (804) 698-4032  
Websites: <http://www.deq.virginia.gov/>  
<http://www.deq.virginia.gov/regions/homepage.html>

The following instructions and information are designed to assist you in applying for permits from Federal, State, and Local regulatory agencies for work in waters and/or wetlands within the Commonwealth of Virginia. The intent is to provide general information on the permit process, not to act as a complete legal and technical reference.

## **JOINT PERMIT APPLICATION PROCESS**

The Joint Permit Application (JPA) process and Standard JPA form are used by the United States Army Corps of Engineers (USACE), the Virginia Marine Resources Commission (VMRC), the Virginia Department of Environmental Quality (DEQ), and the Local Wetlands Boards (LWB) for permitting purposes involving water, wetlands, and dune/beach resources, including, but not limited to, *major* water supply and water withdrawals projects (as defined in DEQ Regulation 9 VAC 25-210).

The Tidewater Joint Permit Application form may be used for most commercial and noncommercial projects in **tidal waters, tidal wetlands, and coastal primary sand dunes and beaches in Virginia** that require the review and/or authorization by local wetlands boards, the Virginia Marine Resources Commission, the Department of Environmental Quality, and/or the U. S. Army Corps of Engineers. The Tidewater JPA may be downloaded from the same web page on which the Standard JPA is located: <http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/webJPA2004.pdf>. *If using the Tidewater JPA, follow the instructions provided with that form.* Note that the Tidewater JPA form is not intended for noncommercial, riparian shellfish aquaculture projects (i.e., "oyster gardening"); the form for these types of projects may be obtained from <http://www.mrc.virginia.gov/forms/abbriipa.pdf> or from the VMRC office.

The Standard JPA should not be used for *minor* water supply or water withdrawal projects, defined in DEQ Regulation 9 VAC 25-210 as a surface water withdrawal of less than 90 million gallons per month (mgm), unless filling or flooding of wetlands and streams occurs or if alteration of stream flow occurs. The application form for minor water supply or water withdrawals can be obtained from DEQ's web site. In the case where fill, flooding, or alteration of flow occurs, please use the Standard JPA.

Please note that some health departments and local agencies, such as local building officials and erosion and sediment control authorities, do not use the Joint Permit Application process or forms and may have different informational requirements. The applicant is responsible for contacting these agencies for information regarding those permitting requirements.

### **REGULATORY AUTHORITIES OF PARTICIPATING AGENCIES:**

The USACE regulates activities in waters of the United States, including wetlands, under Section 404 of the Clean Water Act (33 U.S.C. §1344), Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §403), and Section 103 of the Marine Protection Research and Sanctuaries Act of 1972 (33 U.S.C. §1413).

The VMRC regulates activities on State-owned submerged lands, tidal wetlands, and dunes/beaches under Code of Virginia Title 28.2, Chapters 12, 13, and 14.

The DEQ regulates activities in state waters and wetlands under Section 401 of the Clean Water Act (33 U.S.C. §1341), under State Water Control Law (Code of Virginia Title 62.1), and Virginia Administrative Code Regulations 9VAC25-210 et seq., 9VAC25-660 et seq., 9VAC25-670 et seq., 9VAC25-680 et seq., and 9VAC25-690 et seq.

The LWBs regulate activities in tidal wetlands and dunes/beaches under Code of Virginia Title 28.2, Chapters 13 and 14.

## LOCAL WETLANDS BOARD CONTACT INFORMATION:

Links to LWB information on the Web can be found at

<http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/wetlandsboard.asp>.

## USACE FIELD OFFICE INFORMATION AND DEQ REGIONAL OFFICE INFORMATION:

Answers to technical questions and detailed information about specific aspects of the various permit programs may be obtained from the USACE field office in your project area (please refer to

<http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/varegions.htm> or call 757-201-7652), or from the DEQ regional office in your project area (please refer to <http://www.deq.virginia.gov/regions/homepage.html> or call 804-698-4000).

Applicants may also seek assistance with completing the informational requirements and/or submittals from private consulting and/or engineering firms for hire.

**CHESAPEAKE BAY PRESERVATION ACT INFORMATION:** Development within the 84 Counties, Cities, and Towns of “Tidewater Virginia” (as defined in §10.1-2100 of the Code of Virginia) is subject to the requirements of the Chesapeake Bay Preservation Act. If your project is located in a Bay Act locality and will involve land disturbance or removal of vegetation within a designated Resource Protection Area (RPA), these actions will require approval from your local government and completion of Appendix C. The individual localities, not the DEQ, USACE, or Local Wetlands Boards, are responsible for enforcing Bay Act requirements and, therefore, local permits for land disturbance are not issued through this JPA process. The requirements of the Bay Act may, however, affect the ultimate design and construction of projects. In order to ensure that these requirements are considered early in the permitting process, and to avoid unnecessary and costly delays, applicants should contact their local government as early in the process as possible. Individual localities may request information regarding existing vegetation within the RPA as well as a description and site drawings of any proposed land disturbance or vegetation clearing. Locality staff charged with ensuring compliance with the Bay Act will then evaluate project proposals and advise their Local Wetlands Boards of applicable Bay Act issues. To determine if your project is located in a Bay Act locality (see map on page 31), learn more about Bay Act requirements, or find local government contacts, please visit the Virginia Department of Conservation and Recreation, Division of Chesapeake Bay Local Assistance web site at <http://www.cblad.virginia.gov>, or contact the Division at:

[http://www.dcr.virginia.gov/chesapeake\\_bay\\_local\\_assistance/](http://www.dcr.virginia.gov/chesapeake_bay_local_assistance/) or contact the Division at:

Department of Conservation and Recreation

900 East Main Street, 8th Floor

Richmond, Virginia 23219

Phone: (804) 225-3440 or (800) 243-7229

## HOW TO APPLY

Sections A through D below provide a general list of information and drawings that are required, depending on the type of project being proposed. Prepare all required drawings or sketches as detailed in the lists provided in Appendix D (Drawings) and according to the sample drawings provided in Appendix D.

### **Application materials should be submitted to VMRC:**

1. **If by mail or courier, use the address on page 1.**
2. **If by electronic mail, address the package to: [JPA.permits@mrc.virginia.gov](mailto:JPA.permits@mrc.virginia.gov) . The application must be provided in the .pdf format.**

### **A. APPLICATIONS FOR PROJECTS INVOLVING IMPACTS TO TIDAL WATERS, WETLANDS, AND DUNES/BEACHES (INCLUDING SHORELINE STABILIZATION, PIERS, MARINAS, BEACH NOURISHMENT, BOATHOUSES, BOAT LIFTS, BREAKWATERS, AQUACULTURE ACTIVITIES, DREDGING, ETC.) SHOULD INCLUDE THE FOLLOWING:**

- ❖ All *applicable* portions of Sections 1 through 28 of the JPA, including necessary attachments, information required for projects located in CBPA localities as required in Appendix C (a map of CBPA localities can be found on page 31).
- ❖ Adjacent Property Owner’s Acknowledgement Forms<sup>(1)</sup>, as detailed in Appendix A.
- ❖ For projects with impacts to greater than 1 acre of wetlands, a functional values assessment<sup>(3)</sup>.
- ❖ A set of 8 ½ x 11 inch drawings. If you can not include all of your project site on one page at a scale no smaller than 1” = 200’, you **must** submit a set of 8 ½ x 11 inch match-line drawings **and** a set of large-sized drawings at a scale no smaller than 1”= 200’. If oversized drawings are used, attach **five** copies of the oversized drawings to your application.
- ❖ In order for projects requiring LWB authorization to be considered complete, applications must include the following information (per Virginia Code 28.2-1302):

*“The permit application shall include the following: the name and address of the applicant; a detailed description of the proposed activities; a map, drawn to an appropriate and uniform scale, showing the area of wetlands directly affected, the location of the proposed work thereon, the area of existing and proposed fill and excavation, the location, width, depth and length of any proposed channel and disposal area, and the location of all existing and proposed structures, sewage collection and treatment facilities, utility installations, roadways, and other related appurtenances of facilities, including those on the adjacent uplands; a description of the type of equipment to be used and the means of access to the activity site; the names and addresses of record of adjacent land and known claimants of water rights in or adjacent to the wetland of whom the applicant has notice; an estimate of cost; the primary purpose of the project; and secondary purpose of the proposed project; a complete description of measures*

*to be taken during and after alteration to reduce detrimental offsite effects; the completion date of the proposed work, project, or structure; and such additional materials and documentation as the wetlands board may require.”*

## **B. APPLICATIONS FOR PROJECTS THAT ARE SUBJECT TO CURRENT STATE PROGRAM GENERAL PERMIT (SPGP) AND INVOLVE IMPACTS TO NONTIDAL WATERS AND/OR WETLANDS:**

Programmatic general permits may be issued in situations where a state, regional, or local authority has a regulatory program in place that provides a similar level of review as the U.S. Army Corps of Engineers (Corps). In such cases, the programmatic general permit avoids unnecessary duplication of effort by providing Corps authorization for certain activities provided they obtain the necessary state, regional, or local authorizations. Details may be found at

<http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/RBregional.asp>

The following activities will be considered for coverage under the current State Program General Permit:

- RESIDENTIAL, COMMERCIAL, AND INSTITUTIONAL DEVELOPMENT (DEVELOPMENT) ACTIVITIES (including attendant features) that involve the discharge of dredged or fill material causing the loss of not more than one acre of nontidal wetlands or waters, or the loss of not more than 2,000 linear feet of streams, unless otherwise excluded.
- LINEAR TRANSPORTATION (TRANSPORTATION) ACTIVITIES (including construction, expansion, modification, or improvement) that involve the discharge of dredged or fill material associated with the linear transportation projects not causing the loss of more than 1/3 acre of nontidal waters of the United States, including wetlands, unless otherwise excluded.

- ❖ Mark the “SPGP” checkbox on page 7 of this application.
- ❖ All *applicable* portions of Sections 1 through 28 of the JPA, including necessary attachments.
- ❖ A conceptual compensatory mitigation plan<sup>(2)</sup> for 1) Development projects that impact greater than 1/10 of an acre of wetlands and open waters, or greater than 300 linear feet of stream bed, or 2) Transportation projects that impact any wetlands or open water, or greater than 300 linear feet of stream bed.
- ❖ A copy of the Corps’ confirmed waters and wetlands delineation (including data sheets)
- ❖ All information required for projects located in CBPA localities as required in Appendix C (a map of CBPA localities can be found on page 31).
- ❖ A copy of the FEMA flood insurance rate map or FEMA-approved local floodplain map for the project site (not applicable to <0.1 acre and < 300 linear feet projects by either Corps or DEQ).
- ❖ A set of 8 ½ x 11 inch drawings. If you can not include all of your project site on one page at a scale no smaller than 1” = 200’, you **must** submit a set of 8 ½ x 11 inch match-line drawings **and** a set of large-sized drawings at a scale no smaller than 1”= 200’. If oversized drawings are used, attach **five** copies of the oversized drawings to your application.

## **C. APPLICATIONS FOR OTHER PROJECTS THAT INVOLVE IMPACTS TO NONTIDAL WATERS AND/OR WETLANDS:**

- ❖ All *applicable* portions of Sections 1 through 28 of the JPA, including necessary attachments.
- ❖ A conceptual compensatory mitigation plan<sup>(2)</sup>.
- ❖ A copy of the Corps’ confirmed waters and wetlands delineation (including data sheets).
- ❖ All information required for projects located in CBPA localities as required in Appendix C (a map of CBPA localities can be found on page 31), and a copy of the FEMA flood insurance rate map or FEMA-approved local floodplain map for the project site.
- ❖ For projects with impacts to greater than 1 acre of wetlands, a functional values assessment<sup>(3)</sup>.
- ❖ A set of 8 ½ x 11 inch drawings. If you can not include all of your project site on one page at a scale no smaller than 1” = 200’, you **must** submit a set of 8 ½ x 11 inch match-line drawings **and** a set of large-sized drawings at a scale no smaller than 1”= 200’. If oversized drawings are used, attach **five** copies of the oversized drawings to your application.

## **D. WHEN USING THE JPA FORM AS A PRE-CONSTRUCTION NOTIFICATION (PCN) FOR A USACE NATIONWIDE PERMIT:**

- ❖ Mark the “PCN” checkbox on page 7 of this application. If you fail to mark this box, the PCN will be deemed incomplete and the USACE 45-day time clock will not start.
- ❖ All *applicable* portions of Sections 1 through 28 of the JPA, including necessary attachments and all information required for projects located in CBPA localities as required in Appendix C (a map of CBPA localities can be found on page 31)
- ❖ A set of 8 ½ x 11 inch drawings. If you can not include all of your project site on one page at a scale no smaller than 1” = 200’, you **must** submit a set of 8 ½ x 11 inch match-line drawings **and** a set of large-sized drawings at a scale no smaller than 1”= 200’. If oversized drawings are used, attach **five** copies of the oversized drawings to your application.

### **WHAT HAPPENS NEXT**

Upon receipt of an application, VMRC will assign a permit application number to the JPA and will then distribute a copy of the application and any original plan copies submitted to the other regulatory agencies that are involved in the JPA process. All agencies will conduct separate but concurrent reviews of your project. Please be aware that each agency must issue a separate permit (or a notification that no permit is required). Therefore, make sure that you have received all necessary authorizations, or documentation that no permit is required, from each agency prior to beginning the proposed work.

During the JPA review process, site inspections may be necessary to evaluate a proposed project. Failure to allow an authorized representative of a regulatory agency to enter the property, or to take photographs of conditions at the project site, may result in either the withdrawal of your permit application or denial of a permit.

For certain Federal and State permit applications, a public notice is published in a newspaper having circulation in the project area, is mailed to adjacent property owners, and/or is posted on the agency's Web page. The public may comment on the project during a designated comment period, which varies from agency to agency. Some agencies accept comments upon receipt of the application or during the permit review process, while others only accept comments on draft permits. Comments are evaluated and a decision is made whether to revise a draft permit, issue a final permit, issue a final permit with special conditions, or to deny a permit. When applicable, the project will be heard by the appropriate LWB after a notice of public hearing has been advertised for at least once a week for two consecutive weeks in a local newspaper. VMRC will conduct the hearings for the localities that do not have a wetlands board. You may be responsible for bearing the costs for advertisement of public notices.

Public hearings are held by VMRC at their regularly scheduled monthly commission meetings under the following situations: Protested applications for VMRC permits which can not be resolved; projects costing over \$50,000 involving encroachment over State-owned subaqueous land; and all projects affecting tidal wetlands and dunes/beaches in localities without a LWB. All interested parties will be officially notified regarding the date and time of the hearing and Commission meeting procedures. The Commission will usually make a decision on the project at the meeting unless a decision for continuance is made. If a proposed project is approved, a permit or similar agency correspondence is sent to the applicant. In some cases, notarized signatures, as well as processing fees and royalties, are required before the permit is validated. If the project is denied, the applicant will be notified in writing.

Permits or permit authorizations from some agencies may be provided via electronic mail. If the applicant wishes to receive their permit via electronic mail, please include an e-mail address at the requested place in the application.

### **PERMIT APPLICATION FEES**

***Do not send any permit application fees in with the JPA***, since VMRC is not responsible for accounting for permit application fees required by other agencies. Fees are subject to change. Please consult agency Websites or contact agencies directly for current fee information.

- ❖ USACE: Permit application fees are required for USACE Individual (Standard) permits. A USACE project manager will contact you regarding the proper fee and submittal requirements.
- ❖ DEQ: Permit application fees required by DEQ for VWP permits are provided on DEQ's Website at <http://www.deq.virginia.gov/wetlands/permitfees.html> or on the Commonwealth of Virginia's Website at <http://leg1.state.va.us/000/reg/TOC09025.HTM#C0020>. A DEQ project manager will contact you regarding the proper fee and submittal requirements after receiving your application package. After being contacted by the DEQ, mail the permit application fee and the Permit Application Fee Form to the address listed on the form. Please make sure that the applicant name and facility (project) name are the same as those reported in your JPA.
- ❖ VMRC: Permit fees are \$25.00 for projects costing \$10,000 or less and \$100 for projects costing more than \$10,000. Royalties may also be required for some projects. The proper fee and any required royalty is paid at the time of permit issuance by VMRC. VMRC staff will send the permittee a letter notifying him/her of the proper fees and submittal requirements.
- ❖ LWB: Permit fees vary. Contact the LWB in your locality or reference locality Websites for fee information and submittal requirements. Contact information for LWB may be found at <http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/wetlandsboard.asp>.

### **WETLANDS & WATERS DELINEATIONS**

Wetlands/waters delineations must be performed using the 1987 Corps of Engineers Wetland Delineation Manual. Contact the appropriate USACE staff to obtain a delineation confirmation:

<http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/varegions.htm>.

### **INFORMATION REGARDING THREATENED OR ENDANGERED SPECIES**

In order to find preliminary information regarding federal or state threatened or endangered species on your project site, you may contact the following agencies:

United States Fish and Wildlife Service  
6669 Short Lane  
Gloucester, Virginia 23061  
Voice: (804) 693-6694  
Fax: (804) 693-9032  
<http://virginiafieldoffice.fws.gov/>

Project Review Coordinator  
Virginia Department of Conservation and Recreation  
Natural Heritage Division  
217 Governor Street  
Richmond, Virginia 23219  
Voice: (804) 786-7951  
Fax: (804) 371-2674  
[http://www.dcr.virginia.gov/natural\\_heritage/index.shtml](http://www.dcr.virginia.gov/natural_heritage/index.shtml)

Virginia Department of Game and Inland Fisheries  
Environmental Services Section  
4010 West Broad Street  
Richmond, Virginia 23230-1104  
(804) 367-1000  
<http://www.dgif.virginia.gov/wildlife/>

## **INFORMATION REGARDING FEMA-MAPPED FLOODPLAINS**

You may obtain "Online Hazard Maps" for FEMA-mapped floodplains by visiting [https://hazards.fema.gov/femaportal/wps/portal/!ut/p/.cmd/cs/.ce/7\\_0\\_A/.s/7\\_0\\_CM9/.s.7\\_0\\_A/7\\_0\\_CM9](https://hazards.fema.gov/femaportal/wps/portal/!ut/p/.cmd/cs/.ce/7_0_A/.s/7_0_CM9/.s.7_0_A/7_0_CM9). Local governments also keep paper copies of FEMA maps on hand.

### **FOOTNOTES:**

**(1) Adjacent Property Owner Notification:** When determining whether to grant or deny any permit for the use of state-owned submerged lands, the VMRC must consider, among other things, effects of a proposed project on adjacent or nearby properties. Discussing the proposed project with these property owners can be done on your own using the forms in Appendix A of this package. LWB must also consider the effects on adjacent properties and notify adjoining property owners of the required public hearings for all applications. The completed forms will assist VMRC and LWB in processing the application. The forms in Appendix A may be photocopied if more copies are needed.

**(2) Conceptual mitigation plans,** when required, should include all information stipulated by DEQ Regulations 9 VAC 25-210-80 and 9 VAC 25-210-116, or 9 VAC 25-[660-690]-50, -60, and -70, whichever is applicable to your project. Regulations may be obtained from DEQ's web site at <http://www.deq.virginia.gov/wetlands/permitfees.html>. Information on wetland and stream mitigation is available at <http://www.deq.virginia.gov/wetlands/mitigate.html>. The final compensatory mitigation plan will be required prior to commencement of impacts to waters and/or wetlands on your project site. If no mitigation is planned, submit a detailed statement explaining the reason(s) for no mitigation.

**(3) A functions and values assessment** consists of a narrative description of the existing functions and values of the wetlands and waters being impacted, the impact that the project will have on these functions and values, and information on the following: surrounding land uses and cover types; nutrient, sediment, and pollutant trapping; flood control and flood storage capacity; erosion control and shoreline stabilization; groundwater recharge and discharge; aquatic and wildlife habitat; and unique or critical habitats. Functional values may also include: water quality, floodflow desynchronization, nutrient import or export, stormwater retention or detention, recreation, education, aesthetics, or other beneficial uses. Also include the assessment methodology that was used.

**(4) Wetland and waters boundary delineation map:** For DEQ application purposes, this applies to all projects impacting more than 1/10 acre wetlands or open waters, or more than 300 linear feet of stream bed, and may apply in areas under a deed restriction or protective instrument, regardless of the amount of impacts. The information to be submitted includes the wetlands data sheets; the location of impacted and non-impacted wetlands, streams, open water, and the approximate limits of Chesapeake Bay Resource Protection Areas (RPAs); wetland types, noted according to their Cowardin classification or similar terminology; and a copy of the USACE delineation confirmation, or other correspondence from the USACE indicating their approval of the wetland and waters boundaries. If a Corps confirmation is not available at the time of application, it must be submitted as soon as it becomes available during the DEQ permit review.

# TABLE OF CONTENTS

<b>Section 1:</b>	Project Location Information.....	7
<b>Section 2:</b>	Applicant, Agent, Property Owner, and Contractor Information.....	8
<b>Section 3:</b>	Description of Project, Purposes, Need, Use, and Alternatives.....	8
<b>Section 4:</b>	Previous Site Visits and/or Permits Related to the Proposed Work.....	9
<b>Section 5:</b>	Project Costs.....	9
<b>Section 6:</b>	Public Notification.....	10
<b>Section 7:</b>	Threatened and Endangered Species Information.....	10
<b>Section 8:</b>	Historic Resources Information.....	10
<b>Section 9:</b>	Wetlands, Waters, and Dunes/Beaches Impact Information.....	11
<b>Section 10:</b>	Applicant, Agent, Owner and Contractor Certifications.....	12
<b>Section 11:</b>	Private Piers, Marginal Wharves, and Uncovered Boatlifts.....	14
<b>Section 12:</b>	Boathouses, Gazebos, Covered Boat Lifts, and Other Roofed Structures Over Waterways.....	14
<b>Section 13:</b>	Marinas and Commercial, Governmental, and Community Piers.....	14
<b>Section 14:</b>	Free Standing Mooring Piles, Osprey Nesting Poles, Mooring Buoys, and Dolphins.....	15
<b>Section 15:</b>	Boat Ramps.....	15
<b>Section 16:</b>	Tidal/Nontidal Shoreline Stabilization Structures .....	15
<b>Section 17:</b>	Beach Nourishment.....	16
<b>Section 18:</b>	Dredging, Mining, and Excavating.....	17
<b>Section 19:</b>	Fill in Wetlands or Waters, or on Dunes/Beaches.....	18
<b>Section 20:</b>	Nontidal Stream Channel Modifications for Restoration or Enhancement, or Temporary or Permanent Relocations .....	18
<b>Section 21:</b>	Utility Crossings.....	19
<b>Section 22:</b>	Road Crossings.....	20
<b>Section 23:</b>	Private and Commercial Aquaculture Activities.....	20
<b>Section 24:</b>	Impoundments, Dams, and Stormwater Management Facilities.....	21
<b>Section 25:</b>	Outfalls Not Associated with Proposed Water Withdrawal Activities.....	22
<b>Section 26:</b>	Intakes, Outfalls, and Water Control Structures.....	22
<b>Section 27:</b>	Water Withdrawal Use, Need, and Alternatives.....	24
<b>Section 28:</b>	Public Comments/Issues for Water Withdrawals.....	25
<b>Appendix A:</b>	Adjacent Property Owner's Acknowledgement Forms.....	26
<b>Appendix B:</b>	Certificate of Compliance With Corps of Engineers, Norfolk District, Regional Permit 17 For Private Piers.....	28
<b>Appendix C:</b>	Chesapeake Bay Preservation Act Information.....	29
<b>Appendix D:</b>	Drawings.....	31



**2. APPLICANT, AGENT, PROPERTY OWNER, AND CONTRACTOR INFORMATION**

The applicant(s) is/are the legal entity to which the permit may be issued. The applicant(s) can either be the property owner(s) or the person/people/company(ies) that intend(s) to undertake the activity. The agent is the person or company that is representing the applicant(s). If a company, please use the company name that is registered with the State Corporation Commission (SCC), or indicate no registration with the SCC.

Applicant(s) (For a company, use SCC-registered name) Garrison Commander, Fort Belvoir			Agent (if applicable) (For a company, use SCC-registered name) Stephen Drumm, KCI Technologies		
Mailing address 9430 Jackson Loop Road			Mailing address 936 Ridgebrook Road		
City Fort Belvoir	State Va	Zip Code 22060	City Sparks	State MD	Zip Code 21152
Phone number w/area code 703 806 3017	Fax		Phone number w/area code 410 316 7960	Fax	
Mobile/pager	E-mail brice.c.bartley.civ@mail.mil		Mobile/pager 410 404 6190	E-mail stephen.drumm@kci.com	
State Corporation Commission ID number (if applicable)			State Corporation Commission ID number (if applicable)		

*Certain permits or permit authorizations may be provided via electronic mail. If the applicant wishes to receive their permit via electronic mail, please provide an e-mail address here: \_\_\_\_\_*

Property owner(s), if different from applicant (For a company, use SCC-registered name) Department of Public Works, Fort Belvoir			Contractor, if known (For a company, use SCC-registered name) BL Harbert International		
Mailing address 9430 Jackson Loop Road			Mailing address 820 Shades Creek Parkway Suite 3000		
City Fort belvoir	State Va	Zip code 22060	City Birmingham	State Al	Zip code 35209
Phone number w/area code 703 806 3017	Fax		Phone number w/area code 205 802 2800	Fax 205 802 2801	
Mobile/pager	E-mail alfred.l.mcdaniel5.gov@mail		Mobile/pager 770 652 2724	E-mail bflowers@b.harbert.com	
State Corporation Commission ID number (if applicable)			State Corporation Commission ID number (if applicable)		

**3. PROVIDE A DESCRIPTION OF THE PROJECT, PROJECT PRIMARY AND SECONDARY PURPOSES, PROJECT NEED, INTENDED USE, AND ALTERNATIVES CONSIDERED (Attach additional sheets if necessary)**

- The purpose must include any new development or expansion of an existing land use and/or proposed future use of residual land
- Describe the physical alteration of surface waters
- Include a description of alternatives considered to avoid or minimize impacts to surface waters, including wetlands, to the maximum extent practicable. Include factors such as, but not limited to, alternative construction technologies, alternative project layout and design, alternative locations, local land use regulations, and existing infrastructure
- For utility crossings, include both alternative routes and alternative construction methodologies considered
- For major surface water withdrawals, public surface water supply withdrawals, or projects that will alter instream flows, include the water supply issues that form the basis of the proposed project.

The project is to replace the existing Mount Vernon Road truss bridge with a new truss bridge superstructure. The Dogue Creek Bridge is a vehicular and pedestrian bridge in very poor condition and is load rated for 18 tons. According to USACE inspection report, the bridge is in poor condition and if action is not taken, will eventually be unsafe for vehicle and/or pedestrian traffic. This project will provide "in-kind" bridge replacement using the existing abutments maintaining the same bridge length, width, and profile configuration. No changes to the water surface, wetlands, or shore line is required. Construction of the bridge will be from the roadway using cranes to lift the trusses segments to and from the roadway staging areas avoid any disturbance from the shoreline or creek. Existing utilities on the bridge will be temporarily placed on wood poles and subsequently attached to the new bridge. No surface water withdrawals are required.

### 3. PROVIDE A DESCRIPTION OF THE PROJECT (Continued)

Date of proposed commencement of work (MM/DD/YYYY)  
04/01/2020

Date of proposed completion of work (MM/DD/YYYY)  
10/01/2020

Are you submitting this application at the direction of any State, local, or Federal agency?  Yes  No

Has any work commenced or has any portion of the project for which you are seeking a permit been completed?  
 Yes  No

If you answered "yes" to either question above, give details stating when the work was completed and/or when it commenced, who performed the work, and which agency (if any) directed you to submit this application. In addition, you will need to clearly differentiate between completed work and proposed work on your project drawings.

As part of the design and environmental review process Fort Belvoir staff requested the JPA be submitted as the bridge crosses tidal waters, and performs construction work on a bridge in the floodplain. An environmental assessment is being completed by the USACE for the project and provides the documentation for the project's environmental impacts.

Are you aware of any unresolved violations of environmental law or litigation involving the property?  Yes  No  
 (If yes, please explain)

### 4. PREVIOUS SITE VISITS AND/OR PERMITS RELATED TO THE PROPOSED WORK (Include all Federal, State, and Local pre-application coordination or previous permits)

Agency	Activity	Permit/Project number, and explanation of non-reporting Nationwide permits previously used	Action taken ** and Date of Action	If denied, give reason for denial
USACE	Site Review	None		

\*\* Issued, denied, site visit

### 5. PROJECT COSTS

Approximate cost of the entire project, including materials and labor: \$ 3,789,717

Approximate cost of only the portion of the project affecting State waters (below mean low water in tidal areas and below ordinary high water mark in nontidal areas): \$ No Impacts

**6. PUBLIC NOTIFICATION** (Attach additional sheets if necessary)

- Complete information for all property owners adjacent to the project site and across the waterway, if the waterway is less than 500 feet in width. If your project is located within a cove, you will need to provide names and mailing addresses for all property owners within the cove.
- If you own the adjacent lot, provide the requested information for the first adjacent parcel beyond your property line.

Property owner's name	Mailing address	City	State	Zip code
N/A all work inside of Fort Belvoir property				

Name of newspaper having general circulation in the area of the project: Washington Post, Fairfax County Times  
Address and phone number (including area code) of newspaper Washington Post 800-477-4679 --- Fairfax County Times 703.806.3017

Have adjacent property owners been notified with forms in Appendix A?  Yes  No (attach copies of distributed forms)

**7. THREATENED AND ENDANGERED SPECIES INFORMATION**

Please provide any information concerning the potential for your project to impact state and/or federally threatened and endangered species (listed or proposed). Attach correspondence from agencies and/or reference materials that address potential impacts, such as database search results or your Corps' waters and wetlands delineation confirmation. Contact information for the Virginia Department of Game and Inland Fisheries and the Virginia Department of Conservation and Recreation, Division of Natural Heritage can be found on page 4 of this package.

**8. HISTORIC RESOURCES INFORMATION**

*Note: Historic properties include but are not limited to archeological sites, battlefields, Civil War earthworks, graveyards, buildings, bridges, canals, etc. Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.*

Are any historic properties located within or adjacent to the project site?  Yes  No  Uncertain

If Yes, please provide a map showing the location of the historic property within or adjacent to the project site.

Are there any buildings or structures 50 years old or older located on the project site?  Yes  No  Uncertain  
If Yes, please provide a map showing the location of these buildings or structures on the project site.

Is your project located within a historic district?  Yes  No  Uncertain  
If Yes, please indicate which district: \_\_\_\_\_

## 8. HISTORIC RESOURCES INFORMATION (Continued)

Has a survey to locate archeological sites and/or historic structures been carried out on the property?

Yes  No  Uncertain

If Yes, please provide the following information: Date of Survey: \_\_\_\_\_

Name of firm: \_\_\_\_\_

Is there a report on file with the Virginia Department of Historic Resources?  Yes  No  Uncertain

Title of Cultural Resources Management (CRM) report: \_\_\_\_\_

Was any historic property located?  Yes  No  Uncertain

## 9. WETLANDS, WATERS, AND DUNES/BEACHES IMPACT INFORMATION

**Report each impact site in a separate column. If needed, attach additional sheets using a similar table format. Please ensure that the associated project drawings clearly depict the location and footprint of each numbered impact site. For dredging, mining, and excavating projects, use Section 18.**

	Impact site number 1	Impact site number 2	Impact site number 3
Impact description (use all that apply): F=fill EX=excavation S=Structure T=tidal NT=non-tidal TE=temporary PE=permanent PR=perennial IN=intermittent SB=subaqueous bottom DB=dune/beach IS=hydrologically isolated V=vegetated NV=non-vegetated MC=Mechanized Clearing of PFO	<i>Example: F, NT, PE, V</i>  Not Applicable - The replacement of the bridge over Dogue Creek will not result in impacts to the waterway. The limits of disturbance were designed to remain above the mean high water line.		
Wetland/waters impact area (square feet)	0		
Dune/beach impact area (square feet)	0		
Stream dimensions at impact site (length and average width in linear feet, and area in sq. ft.)	0		
Volume of fill below Mean High Water or Ordinary High Water (cubic yards)	0		
Cowardin classification of impacted wetland/water or geomorphological classification of stream (Ex: PFO wetland; 'C' Channel Stream)	NA		
Average stream flow at site (flow rate under normal rainfall conditions) (cubic feet per second)			
Contributing drainage area (acres or square miles)	19.5 sq miles		

**9. WETLANDS/WATERS IMPACT INFORMATION (Continued)**

DEQ classification of impacted resource(s): Estuarine Class II Non-tidal waters Class III Mountainous zone waters Class IV Stockable trout waters Class V Natural trout waters Class VI Wetlands Class VII	Estuarine Class II		
--	--------------------	--	--

**For DEQ permitting purposes, also submit as part of this section a wetland and waters boundary delineation map<sup>(4)</sup> – see the Footnotes section in the form instructions.**

**For DEQ permitting purposes, also submit as part of this section a written disclosure of all wetlands, open water, or streams that are located within the proposed project or compensation areas that are also under a deed restriction, conservation easement, restrictive covenant, or other land-use protective instrument.**

**10. APPLICANT, AGENT, OWNER, AND CONTRACTOR CERTIFICATIONS**

If the Applicant(s), Agent(s), Owner(s), or Contractor(s) is/are a company, please use the company name(s) that is/are registered with the State Corporation Commission (SCC).

**READ ALL OF THE FOLLOWING CAREFULLY BEFORE SIGNING**

**PRIVACY ACT STATEMENT:** The Department of the Army permit program is authorized by Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and Section 103 of the Marine Protection Research and Sanctuaries Act of 1972. These laws require that individuals obtain permits that authorize structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters prior to undertaking the activity. Information provided in the Joint Permit Application will be used in the permit review process and is a matter of public record once the application is filed. Disclosure of the requested information is voluntary, but it may not be possible to evaluate the permit application or to issue a permit if the information requested is not provided.

**CERTIFICATION:** I am hereby applying for permits typically issued by the DEQ, VMRC, U.S. Army Corps of Engineers, and/or Local Wetlands Boards for the activities I have described herein. I agree to allow the duly authorized representatives of any regulatory or advisory agency to enter upon the premises of the project site at reasonable times to inspect and photograph site conditions, both in reviewing a proposal to issue a permit and after permit issuance to determine compliance with the permit.

In addition, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Is/Are the Applicant(s) and Owner(s) the same?  Yes \_\_\_ No

Applicant's name & title (printed or typed) Garrison Commander, Fort Belvoir	Second applicant's name & title, if applicable (printed or typed)
Applicant's signature	Second applicant's signature
Date	Date
<i>(Required for VMRC permit actions only)</i> Property owner's name, if different from Applicant	<i>(Required for VMRC permit actions only)</i> Second property owner's name, if applicable
Owner's signature, if different from Applicant	Second owner's signature
Date	Date

**10. APPLICANT, AGENT, OWNER, AND CONTRACTOR CERTIFICATIONS (Continued)**

If the Applicant(s), Agent(s), Owner(s), or Contractor(s) is/are a company, please use the company name(s) that is/are registered with the State Corporation Commission (SCC).

**CERTIFICATION OF AUTHORIZATION TO ALLOW AGENT(S) TO ACT ON APPLICANT'S(S) BEHALF (IF APPLICABLE)**

I (we), Garrison Commander, Fort Belvoir (and) KCI Technologies,  
 APPLICANT'S NAME(S) – *complete the second blank if more than one Applicant*

hereby certify that I (we) have authorized Stephen Drumm (and) \_\_\_\_\_  
 AGENT'S NAME(S) – *complete the second blank if more than one Agent*

to act on my (our) behalf and take all actions necessary to the processing, issuance, and acceptance of this permit and any and all standard and special conditions attached. I (we) hereby certify that the information submitted in this application is true and accurate to the best of my (our) knowledge.

Applicant's signature	Second applicant's signature, if applicable
Date	Date
Agent's signature and title	Second agent's signature and title, if applicable
Date	Date

**CONTRACTOR ACKNOWLEDGEMENT (IF APPLICABLE)**

I (we), Garrison Commander, Fort Belvoir (and) \_\_\_\_\_,  
 APPLICANT'S NAME(S) – *complete the second blank if more than one Applicant*

have contracted BL Harbert International (and) \_\_\_\_\_  
 CONTRACTOR'S NAME(S) – *complete the second blank if more than one Contractor*

to perform the work described in this Joint Permit Application, signed and dated \_\_\_\_\_.

I (we) will read and abide by all conditions as set forth in all Federal, State, and Local permits as required for this project. I (we) understand that failure to follow the conditions of the permits may constitute a violation of applicable Federal, State, and Local statutes and that we will be liable for any civil and/or criminal penalties imposed by these statutes.

In addition, I (we) agree to make available a copy of any permit to any regulatory representative visiting the project site to ensure permit compliance. If I (we) fail to provide the applicable permit upon request, I (we) understand that the representative will have the option of stopping our operation until it has been determined that we have a properly signed and executed permit and are in full compliance with all of the terms and conditions.

Contractor's name or name of firm (printed/typed) BL Harbert International	Contractor's or firm's mailing address 820 Shades Creek Parkway Birmingham, Al 35209	
Contractor's signature and title	Contractor's license number	Date
Applicant's signature	Second applicant's signature, if applicable	
Date	Date	



**END OF GENERAL INFORMATION**

**The following sections are activity-specific. Fill out only the sections that apply to your particular project.**

### 11. PRIVATE PIERS, MARGINAL WHARVES, AND UNCOVERED BOAT LIFTS

If you plan to construct a private, residential pier, you **may** qualify to work in a non-reporting capacity under the Norfolk District Corps of Engineers' Regional Permit 17 (RP-17).

A copy of RP-17 can be obtained by calling (757) 201-7652 or by visiting the Corps' Website at [http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/RP-17\\_2003\\_compcert.pdf](http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/RP-17_2003_compcert.pdf). A copy of the RP-17 Certificate of Compliance is found in Appendix B of this application package. You should only sign and attach this form to the application if you have completely read and understood the terms and conditions of RP-17. **Although no further written authorization will be required from the Corps, you may require a permit from the Virginia Marine Resources Commission and/or your local wetlands board. Please submit this application as instructed in order to obtain all required state and local permits.**

In cases where the proposed pier will encroach beyond one fourth the waterway width (as determined by measuring mean high water to mean high water or ordinary high water mark to ordinary high water mark), the following information must be included before the application will be considered complete. For an application to be considered complete:

1. The Corps **MAY** require depth soundings across the waterway at increments designated by the Corps project manager. Typically 10-foot increments for waterways less than 200 feet wide and 20-foot increments for waterways greater than 200 feet wide with the date and time the measurements were taken and how they were taken (e.g., tape, range finder, etc.).
2. The applicant **MUST** provide a justification as to purpose if the proposed work would extend a pier greater than one-fourth of the distance across the open water measured from mean high water or the channelward edge of the wetlands.
3. The applicant **MUST** provide justification if the proposed work would involve the construction of a pier greater than five feet wide or less than four feet above any wetland substrate.

Number of vessels to be moored at the pier or wharf: \_\_\_\_\_

In the spaces provided below, give the type (i.e. sail, power, skiff, etc.), size, and registration number of the vessel(s) to be moored

TYPE	LENGTH	WIDTH	DRAFT	REGISTRATION #

### 12. BOATHOUSES, GAZEBOS, COVERED BOAT LIFTS, AND OTHER ROOFED STRUCTURES OVER WATERWAYS

No. of vessels to be moored at the proposed structure: \_\_\_\_\_ Will the sides of the structure be enclosed? \_\_\_\_Yes \_\_\_\_No  
Area covered by the roof structure \_\_\_\_\_ square feet

In the spaces provided below, give the type (i.e. sail, power, skiff, etc.), size, and registration number of the vessel(s) to be moored

TYPE	LENGTH	WIDTH	DRAFT	REGISTRATION #

### 13. MARINAS AND COMMERCIAL, GOVERNMENTAL, AND COMMUNITY PIERS

Have you obtained the Virginia Department of Health's approval for sanitary facilities? \_\_\_\_Yes \_\_\_\_No  
*You will need to obtain this authorization or a variance before a VMRC permit will be issued.*

Will petroleum products or other hazardous materials be stored or handled at the facility? \_\_\_\_Yes \_\_\_\_No  
*If your answer is yes, please attach your spill contingency plan.*

Will the facility be equipped to off-load sewage from boats? \_\_\_\_Yes \_\_\_\_No

EXISTING: wet slips: \_\_\_\_\_ dry storage: \_\_\_\_\_

PROPOSED: wet slips: \_\_\_\_\_ dry storage: \_\_\_\_\_

**14. FREE STANDING MOORING PILES, OSPREY NESTING POLES, MOORING BUOYS, AND DOLPHINS  
(not associated with piers)**

Number of vessels to be moored: _____	Type and number of mooring(s) proposed: _____ _____
---------------------------------------	--

In the spaces provided below, give the type (i.e. sail, power, skiff, etc.), size, and registration number of the vessel(s) to be moored

TYPE	LENGTH	WIDTH	DRAFT	REGISTRATION #

Give the name and complete mailing address(es) of the owner(s) of the vessel(s) if not owned by applicant (attach extra sheets if needed):

Do you plan to reach the mooring from your own upland property? \_\_\_\_Yes \_\_\_\_No  
If "no," explain how you intend to access the mooring.

**15. BOAT RAMPS**

Will excavation be required to construct the boat ramp? \_\_\_\_Yes \_\_\_\_No  
If "yes," will any of the excavation occur below the plane of the ordinary high water mark/mean high water line or in wetlands?  
\_\_\_\_Yes \_\_\_\_No  
If "yes," you will need to fill out Section 18 for this excavation. Where will you dispose of the excavated material?

What type of design and materials will be used to construct the ramp (open pile design with salt treated lumber, concrete slab on gravel bedding, etc.)?

Location of nearest public boat ramp	Driving distance to that public ramp _____miles
--------------------------------------	--

Will other structures be constructed concurrent with the boat ramp installation? \_\_\_\_Yes \_\_\_\_No  
If "yes," please fill out the appropriate sections of this application associated with those other activities.

**16. TIDAL/NONTIDAL SHORELINE STABILIZATION STRUCTURES (INCLUDING BULKHEADS AND ASSOCIATED BACKFILL, RIPRAP REVETMENTS AND ASSOCIATED BACKFILL, MARSH TOE STABILIZATION, GROINS, JETTIES, AND BREAKWATERS, ETC.)**

Is any portion of the project maintenance or replacement of an existing and currently serviceable structure? \_\_\_\_Yes \_\_\_\_No  
If yes, give length of existing structure: \_\_\_\_\_ linear feet

If your maintenance project entails replacement of a bulkhead, is it possible to construct the replacement bulkhead within 2 feet channelward of the existing bulkhead? \_\_\_\_Yes \_\_\_\_No If not, please explain below:

**16. TIDAL/NONTIDAL SHORELINE STABILIZATION STRUCTURES (Continued)**

Length of proposed structure, including returns: \_\_\_\_\_ linear feet

Average channelward encroachment of the structure from  
Mean high water/ordinary high water mark: \_\_\_\_\_ feet  
Mean low water: \_\_\_\_\_ feetMaximum channelward encroachment of the structure from  
Mean high water/ordinary high water mark: \_\_\_\_\_ feet  
Mean low water: \_\_\_\_\_ feetMaximum channelward encroachment from the back edge of the  
Dune \_\_\_\_\_ feetMaximum channelward encroachment from the back edge of the  
Beach \_\_\_\_\_ feet

Describe the type of construction including all materials to be used (including all fittings):

Will filter cloth be used? \_\_\_ Yes \_\_\_ No

What is the source of the backfill material? \_\_\_\_\_

What is the composition of the backfill material? \_\_\_\_\_

If rock is to be used, give the average volume of material to be used for every linear foot of construction: \_\_\_\_\_ cubic yards

What is the volume of material to be placed below the plane of ordinary high water mark/mean high water? \_\_\_\_\_ cubic yards

For projects involving stone:

Average weight of core material (bottom layers): \_\_\_\_\_ pounds per stone (Class \_\_\_\_\_)

Average weight of armor material (top layers): \_\_\_\_\_ pounds per stone (Class \_\_\_\_\_)

Are there similar shoreline stabilization structures in the vicinity of your project site? \_\_\_ Yes \_\_\_ No

If so, describe the type(s) and location(s) of the structure(s):

If you are building a groin or jetty, will the channelward end of  
the structure be marked to show a hazard to navigation?  
\_\_\_ Yes \_\_\_ NoHas your project been reviewed by the Shoreline Erosion  
Advisory Service (SEAS)? \_\_\_ Yes \_\_\_ No  
If yes, please attach a copy of their comments.**17. BEACH NOURISHMENT**

Source of material: \_\_\_\_\_

Volume of material: \_\_\_\_\_ cubic yards

Composition of material (percentage sand, silt, clay):

Mode of transportation of material to the project site (truck,  
pipeline, etc.):Describe the type(s) of vegetation proposed for stabilization and the proposed planting plan, including schedule, spacing,  
monitoring, etc. Attach additional sheets if necessary.

## 18. DREDGING, MINING, AND EXCAVATING

FILL OUT THE FOLLOWING TABLE FOR DREDGING PROJECTS

	NEW dredging				MAINTENANCE dredging			
	Hydraulic		Mechanical (clamshell, dragline, etc.)		Hydraulic		Mechanical (clamshell, dragline, etc.)	
	Cubic yards	Square feet	Cubic yards	Square feet	Cubic yards	Square feet	Cubic yards	Square feet
Vegetated wetlands								
Nonvegetated wetlands								
Subaqueous land								
Totals								
Is this a one-time dredging event? ___Yes ___No If "no", how many dredging cycles are anticipated: _____ (___ initial cycle in cu. yds.) (___ subsequent cycles in cu. yds.)								
Composition of material (percentage sand, silt, clay, rock): Provide documentation (i.e. laboratory results or analytical reports) that <i>dredged</i> material from on-site areas is free of toxics. If not free of toxics, provide documentation of proper disposal (i.e. bill of lading from commercial supplier or disposal site).								
Please include a dredged material management plan that includes specifics on how the dredged material will be handled and retained to prevent its entry into surface waters or wetlands. If on-site dewatering is proposed, please include plan view and cross section drawings of the dewatering area and associated outfall.								
Will the dredged material be used for any commercial purpose or beneficial use? ___Yes ___No If yes, please explain:								
If this is a maintenance dredging project, what was the date that the dredging was last performed? _____ Permit number of original permit: _____ (It is important that you attach a copy of the original permit.)								
For mining projects: On separate sheets of paper, explain the operation plans, including: 1) the frequency (i.e., every six weeks, for example), duration (i.e., April through September), and volume (in cubic yards) to be removed per operation; 2) the temporary storage and handling methods of mined material, including the dimensions of the containment berm used for upland disposal of dredged material and the need (or no need) for a liner or impermeable material to prevent the leaching of any identified contaminants into ground water; 3) how equipment will access the mine site; and 4) verification that dredging: a) will not occur in water body segments that are currently on the effective Section 303(d) Total Maximum Daily Load (TMDL) priority list or that have an approved TMDL; b) will not exacerbate any impairment; and c) will be consistent with any waste load allocation/limit/conditions imposed by an approved TMDL. Have you applied for a permit from the Virginia Department of Mines, Minerals and Energy? ___Yes ___No								
Contributing drainage area: _____square miles					Average stream flow at site (flow rate under normal rainfall conditions): _____cfs			

**19. FILL (not associated with backfilled shoreline structures) AND OTHER STRUCTURES (other than piers and boathouses) IN WETLANDS OR WATERS, OR ON DUNES/BEACHES**

Source and composition of fill material (percentage sand, silt, clay, rock): \_\_\_\_\_

Provide documentation (i.e. laboratory results or analytical reports) that fill material from off-site locations is free of toxics. If not free of toxics, provide documentation of proper disposal (i.e. bill of lading from commercial supplier or disposal site). Documentation is not necessary for fill material obtained from on-site areas.

Explain the purpose of the filling activity and the type of structure to be constructed over the filled area (if any):

Describe any structure that will be placed in wetlands/waters or on a beach dune and its purpose:

Will the structure be placed on pilings? \_\_\_\_ Yes \_\_\_\_ No

Total area occupied by any structure.  
\_\_\_\_\_ Square Feet

How far will the structure be placed channelward from the back edge of the dune? \_\_\_\_\_ feet

How far will the structure be placed channelward from the back edge of the beach? \_\_\_\_\_ feet

**20. NONTIDAL STREAM CHANNEL MODIFICATIONS FOR RESTORATION OR ENHANCMENT, or TEMPORARY OR PERMANENT RELOCATIONS**

*If proposed activities are being conducted for the purposes of compensatory mitigation, please attach separate sheets of paper providing all information required by the most recent version of the stream assessment methodology approved by the Norfolk District of the U.S. Army Corps of Engineers and the Virginia Department of Environmental Quality, in lieu of completing the questions below. Required information outlined by the methodology can be found at: <http://155.78.20.211/Technical%20Services/Regulatory%20Branch/USM.asp> or <http://www.deq.virginia.gov/wetlands/mitigate.html>.*

Has the stream restoration project been designed by a local, state, or federal agency? \_\_\_\_ Yes \_\_\_\_ No. If yes, please include the name of the agency here: \_\_\_\_\_.

Is the agency also providing funding for this project? \_\_\_\_ Yes \_\_\_\_ No

Linear feet of stream impact: \_\_\_\_\_

Contributing drainage area: \_\_\_\_\_ acres or \_\_\_\_\_ square miles

Existing average stream flow at site (flow rate under normal rainfall conditions): \_\_\_\_\_ cfs

Proposed average stream flow at site after modifications (flow rate under normal rainfall conditions): \_\_\_\_\_ cfs

Explain, in detail, the method to be used to stabilize the banks:

Explain the composition of the existing stream bed (percent cobble, rock, sand, etc.):

## 20. NONTIDAL STREAM CHANNEL MODIFICATIONS (Continued)

Will low-flow channels be maintained in the modified stream channel? \_\_\_\_ Yes \_\_\_\_ No.

Describe how:

Will any structure(s) be placed in the stream to create riffles, pools, meanders, etc.? \_\_\_\_ Yes \_\_\_\_ No

If yes, please explain:

## 21. UTILITY CROSSINGS

Type of crossing:  overhead \_\_\_\_ trenched \_\_\_\_ directionally-drilled

Method of clearing corridor of vegetation (check all that apply): \_\_\_\_ mechanized land clearing that disturbs the soil surface

cutting vegetation above the soil surface

Describe the materials to be used in the installation of the utility line (including gravel bedding for trenched installations, bentonite slurries used during direction-drilling, etc.) and a sequence of events to detail how the installation will be accomplished (including methods used for in-stream and dry crossings).

Placement of two temporary wood poles to move the telecommunications line off the existing bridge during construction and permanently reattached to the new bridge and the wood poles removed.

For overhead crossings over navigable waterways (including all tidal waterways), please indicate the height of other overhead crossings or bridges over the waterway relative to mean high water, mean low water, or ordinary high water mark:

15 +/- feet

Nominal system voltage, if project involves power lines: comcast and verizon cables

Will there be an excess of excavated material? \_\_\_\_ Yes  No

If so, describe the method that will be undertaken to dispose of, and transport, the material to its permanent disposal location and give that location:

Will any excess material be stockpiled in wetlands? \_\_\_\_ Yes  No

If so, will the stockpiled material be placed on filter fabric or some other type of impervious surface? \_\_\_\_ Yes \_\_\_\_ No

## 21. UTILITY CROSSINGS (Continued)

Will permanent access roads be placed through wetlands/streams? \_\_\_ Yes  No  
If yes, will the roads be \_\_\_\_\_ at grade or \_\_\_\_\_ above grade (check one)?

Will the utility line through wetlands/waters be continually maintained (e.g. via mowing or herbicide)? \_\_\_ Yes  No  
If maintained, what is the maximum width? \_\_\_\_\_ feet

## 22. ROAD CROSSINGS

Have you conducted hydraulic studies to verify the adequacy of the culverts? \_\_\_ Yes  No  
If so, please attach a copy of the hydraulic study/report.  
*Virginia Department of Transportation (VDOT) standards require that the backwater for a 100 year storm not exceed 1 foot for all road, culvert, and bridge projects within FEMA-designated floodplains.*

Will the culverts be countersunk below the stream bottom? \_\_\_ Yes \_\_\_ No. If no, explain: \_\_\_\_\_  
Bridge Replacement Project see attached

If the project entails a bridged crossing and there are similar crossings in the area, what is the vertical distance above mean high water, mean low water, or ordinary high water mark of those similar structures? \_\_\_\_\_ 6 \_\_\_\_\_ feet above \_\_\_\_\_ High tide  
*For all bridges proposed over navigable waterways (including all tidal water bodies), you will be required to contact the U.S. Coast Guard to determine if a permit is required of their agency.*

On separate sheets of paper, describe the materials to be used, the method of construction (including the use of cofferdams), and the sequence of construction events. Include cross sections and profile plans of the culvert crossings including wing walls or rip rap.

## 23. PRIVATE AND COMMERCIAL AQUACULTURE ACTIVITIES

*Please review VMRC regulations related to aquaculture activities if you are completing this section. An abbreviated application is available for certain private oyster gardening activities by a riparian owner. Also, separate information is required by the VMRC Fisheries Management Division for the review of commercial projects that may qualify for the Virginia Marine Resources Commission General Permit #4 FOR TEMPORARY PROTECTIVE ENCLOSURES FOR SHELLFISH. The VMRC aquaculture regulations can be found on the agency web page at: <http://www.mrc.state.va.us/regulations/regindex.shtml>. Please see regulations 4 VAC 20-335-10 et seq., [4 VAC 20-336-10 et seq.](#), and 4 VAC 20-1130-10 et seq.*

Briefly describe your proposed aquaculture activity from the time of acquisition (seed, fingerlings, etc.) to time of harvest, and indicate which species you intend to culture. Attach additional sheets if needed.

Source of the animals/plants that you want to culture: \_\_\_\_\_

*Note: VMRC Regulation 4VAC 20-754 et seq. "Pertaining to the Importation of Fish, Shellfish or Crustacea" sets forth the requirements for importing organisms from out of state.*

Describe below the number, type, and dimensions of the structures that will be used (e.g., 4' x 2' x 18" floats, 3' x 3' x 1' bottom cages, etc.) and the overall dimensions of the area to be occupied by the aquaculture structures (e.g., two 40-foot by 10-foot bottom plots).

**23. PRIVATE AND COMMERCIAL AQUACULTURE ACTIVITIES (Continued)**

Will the structures be affixed to an existing structure? \_\_\_ Yes \_\_\_ No  
 If so, describe the attachment below.

Will the structures be located on leased oyster planting ground? \_\_\_ Yes \_\_\_ No  
 If so, give the following information: \_\_\_\_\_ lease number \_\_\_\_\_ plat file number

**24. IMPOUNDMENTS, DAMS, AND STORMWATER MANAGEMENT FACILITIES**

*If the impoundment or dam is a component of a water withdrawal project, also complete Sections 26 through 28.*

Will the proposed impoundment, dam, or stormwater management facility be used for agricultural purposes (e.g., in the operation of a farm)? For DEQ permitting purposes, a farm is considered to be a property or operation that produces goods for market.  
 \_\_\_ Yes \_\_\_ No

What type of materials will be used in the construction (earth, concrete, rock, etc.)? \_\_\_\_\_

What is the source of these materials? \_\_\_\_\_

Provide the dimensions of proposed impoundment, dam, or stormwater management facility, including the height and width of all structures.

Storage capacity\* of impoundment: \_\_\_\_\_ acre-feet  
 \*should be given for the normal pool of recreational or farm ponds, or design pool for stormwater management ponds or reservoirs (the elevation the pond will be at for the design storm, e.g., 10-year, 24-hour storm)

Surface area\*\* of impoundment: \_\_\_\_\_ acres  
 \*\*should be given for the normal pool of recreational or farm ponds, or design pool for stormwater management ponds or reservoirs (the elevation the pond will be at for the design storm, e.g., 10-year, 24-hour storm)

Is the proposed project excluded from the Virginia Dam Safety Regulations? \_\_\_ Yes \_\_\_ No \_\_\_ Uncertain

If not excluded, does your proposed project comply with the Virginia Dam Safety Regulations? \_\_\_ Yes \_\_\_ No \_\_\_ Uncertain

Does the proposed design include a vegetation management area per §10.1-609.2? \_\_\_ Yes \_\_\_ No \_\_\_ Uncertain

*If your answer to these questions is no or uncertain, you should contact the Virginia Department of Conservation and Recreation's Dam Safety Program at (804) 371-6095, or reference the regulations on the Web at [http://www.dcr.virginia.gov/dam\\_safety\\_and\\_floodplains/index.shtml](http://www.dcr.virginia.gov/dam_safety_and_floodplains/index.shtml)*

*For stormwater management facilities:*

Design storm event: \_\_\_\_\_ year storm

Retention time: \_\_\_\_\_ hours

Current average flow: \_\_\_\_\_ cfs

Proposed peak outflow for the design storm provided above: \_\_\_\_\_ cfs

Has the facility been designed as an Enhanced Extended Detention Basin or an Extended Detention Basin in accordance with the Minimum Standard 3.07 of the Virginia Stormwater Management Handbook, Volume I (published by the Virginia Department of Conservation and Recreation, 1999), or in accordance with the latest version of this handbook? \_\_\_ Yes \_\_\_ No

Will the impoundment structure be designed to pass a minimum flow at all times? \_\_\_ Yes \_\_\_ No

If so, please give the minimum rate of flow: \_\_\_\_\_ cfs

What is the drainage area upstream of the proposed impoundment? \_\_\_\_\_ square miles

How much of your proposed impoundment structure will be located on the stream bed? \_\_\_\_\_ square feet

What is the area of vegetated wetlands that will be excavated and/or backflooded by the impoundment? \_\_\_\_\_ square feet

What is the *area and length* of streambed that will be excavated and/or backflooded by the impoundment? \_\_\_\_\_ square feet  
 \_\_\_\_\_ linear feet

Are fish ladders being proposed to accommodate the passage of fish? \_\_\_ Yes \_\_\_ No

**25. OUTFALLS NOT ASSOCIATED WITH PROPOSED WATER WITHDRAWAL ACTIVITIES**

Type and size of pipe(s): \_\_\_\_\_

Daily rate of discharge: \_\_\_\_\_ mgd

If the discharge will be thermally-altered, provide the maximum temperature: \_\_\_\_\_

Contributing drainage area: \_\_\_\_\_ square miles

Average daily stream flow at site: \_\_\_\_\_ cfs

---

Have you received a Virginia Discharge Elimination System (VPDES) permit for the proposed project? \_\_\_ Yes \_\_\_ No.  
 If yes, please provide the VPDES permit number: \_\_\_\_\_.  
 If no, is there a permit action pending? \_\_\_ Yes \_\_\_ No. If pending, what is the facility name? \_\_\_\_\_.

**The following sections are typically related to major water withdrawal activities, defined in 9 VAC 25-210-10 as a surface water withdrawal of 90 million gallons per month (mgm) or greater; Federal Energy Regulatory Commission license projects; or impacts likely to produce the need for instream flow requirements.** Examples of such projects include, but are not limited to, reservoirs, irrigation projects, power generation facilities, public water supply facilities, etc. Included with these projects are any associated features, such as dams, intake pipes, outfall structures, berms, etc.

**If completing these sections, enter "N/A" in any section that does not apply to the project.**

**26. INTAKES, OUTFALLS, AND WATER CONTROL STRUCTURES (INCLUDING ALL PROPOSED WATER WITHDRAWAL ACTIVITIES)**

<p>For intakes:</p> <p>Type and size of pipe(s): _____</p> <p>Type and size of pump(s): _____</p> <p>Daily rate of withdrawal: _____ mgd</p> <p>Velocity of withdrawal: _____ fps</p> <p>Screen mesh size: _____ inches / _____ mm</p> <p>If other sizing units, please specify: _____</p> <p>Contributing drainage area: _____ square miles</p> <p>Average daily stream flow at site: _____ cfs</p> <p>Average annual stream flow at site: _____ cfs</p>	<p>For outfalls:</p> <p>Type and size of pipe(s): _____</p> <p>Daily rate of discharge: _____ mgd</p> <p>If the discharge will be thermally-altered, provide the maximum temperature: _____</p> <p>Contributing drainage area: _____ square miles</p> <p>Average daily stream flow at site: _____ cfs</p>
---	---

For intakes and dams, use the table below to provide the median monthly stream flows in cubic feet per second (cfs) at the water intake or dam site (not at the stream gage; if there is not a gage at the intake or dam site, you will need to interpolate flows to the intake or dam site). Median flow is the value at which half of the measurements are above and half of the measurements are below. Median is also sometimes referred to as the '50% exceedence flow'. The median flow generally must be calculated from USGS historical data. Please do not provide *mean (average)* flow.

Month	Median flow (cfs)	Month	Median flow (cfs)
January		July	
February		August	
March		September	
April		October	
May		November	
June		December	

## 26. INTAKES, OUTFALLS, AND WATER CONTROL STRUCTURES (Continued)

Describe the stream flow gages used, the type of calculations used (such as drainage area coefficient correction factors), and the period of record that was used to calculate the median flows provided in the table above.

Provide any available historical low-flows at the intake or dam site.

Describe how the proposed withdrawal at the intake or dam site will impact stream flows in terms of rates, volumes, frequency, etc.

Describe how the withdrawal of water will vary over time. For example, will the withdrawal vary by the time of year, by the time of day, or by the time of week? Examples of projects that should describe variable withdrawals include, but are not limited to: power plant cooling withdrawals that increase and decrease seasonally; golf course irrigation; municipal water supply; nurseries; ski resorts that use water for snowmaking; and resorts with weekend or seasonal variations.

Provide the amount of water that will be lost due to consumptive use. For the purpose of this application, consumptive use means the withdrawal of surface waters without recycling of said waters to their source or basin of origin. Examples of consumptive uses are water that is evaporated in cooling towers or by other means in power plants; irrigation water (all types); residential water use that takes place outside of the home; and residential water use both inside and outside of homes for residences served by septic systems. Localities that sell water to other jurisdictions should document the portion of the withdrawal that is not returned to the originating watershed. Attach a map showing the location of the withdrawal and the location of the return of flow.

## 27. WATER WITHDRAWAL USE, NEED, AND ALTERNATIVES

Describe the proposed use of the water withdrawal.

Provide the following information at the water intake or dam site. Specify the units of measurement (i.e. million gallons per day, gallons per minute, cubic feet per second, etc.).

Proposed maximum instantaneous withdrawal \_\_\_\_\_

Proposed average daily withdrawal \_\_\_\_\_

Proposed maximum daily withdrawal \_\_\_\_\_

Proposed maximum monthly withdrawal \_\_\_\_\_

Proposed maximum annual withdrawal \_\_\_\_\_

Describe how the above withdrawals were calculated, including the relevant assumptions made in that calculation and the documentation or resources used to support the calculations, such as population projections, population growth rates, per-capita use, new uses, changes to service areas, and if applicable, evapotranspiration data and irrigation data.

For major surface water withdrawals, public water supply withdrawals, and projects that will alter instream flows, provide information to establish the local water supply need:

Existing supply sources, yields, and demands: \_\_\_\_\_

Peak day withdrawal: \_\_\_\_\_

Average daily withdrawal: \_\_\_\_\_

Safe yield: \_\_\_\_\_

Lowest daily flow of record: \_\_\_\_\_

Types of water uses: \_\_\_\_\_

Existing water conservation measures and drought response plan, including what conditions trigger implementation:  
\_\_\_\_\_

Projected demands over a minimum 30-year planning period: \_\_\_\_\_

Projected demands in local or regional water supply plan (9 VAC 25-780 et seq.) or demand for the project service area, if that is smaller in area:

Statistical population (growth) trends: \_\_\_\_\_

Projected demands by use type: \_\_\_\_\_

Projected demands without water conservation measures: \_\_\_\_\_

Projected demands with long-term water conservation measures: \_\_\_\_\_

## 27. WATER WITHDRAWAL USE, NEED, AND ALTERNATIVES (Continued)

For surface water withdrawals other than public water supply, provide information or documentation that demonstrates alternate sources of water are available for the proposed project during times of reduced instream flow.

Provide an alternatives analysis for the proposed water withdrawal project, including the required range of alternatives to be analyzed; a narrative outlining the opportunities and status of regional efforts undertaken; and the criteria used to evaluate each alternative. The analysis must address all of the criteria contained in 9 VAC 25-210-115 C 2 and 9 VAC 25-210-115 C 3.

Describe any existing, flow-dependent beneficial uses along the affected stream reach. Include both instream and offstream uses. Describe the stream flow necessary to protect existing beneficial uses and how the proposed withdrawal will impact existing beneficial uses. For the purposes of this application, beneficial instream uses include, but are not limited to: the protection of fish and wildlife habitat; maintenance of waste assimilation; recreation; navigation; and cultural and aesthetic values. Offstream beneficial uses include, but are not limited to: domestic (including public water supply); agriculture; electric power generation; commercial; and industrial.

Describe the aquatic life known to be present along the affected stream reach. Describe aquatic life that may be impacted by the proposed water withdrawal. Include the species' habitat requirements.

## 28. PUBLIC COMMENTS/ISSUES FOR MAJOR WATER WITHDRAWALS

For new or expanded surface water supply projects, use separate sheets of paper to summarize the steps taken to seek public input, as required by 9 VAC 25-210-75, and identify the issues raised during the public information process. If none, respond "None" or "Not applicable".

APPENDIX A

Adjacent Property Owner's Acknowledgement Form

I, \_\_\_\_\_, own land next to/ across the water from/ in the same cove  
(print adjacent property owner's name)

as the land of \_\_\_\_\_  
(print applicant's name)

I have reviewed the applicant's project drawings dated \_\_\_\_\_ to be submitted for all  
(date of drawings)

necessary Federal, State, and Local permits.

\_\_\_\_\_ I have no comment regarding the proposal

\_\_\_\_\_ I do not object to the proposal

\_\_\_\_\_ I object to the proposal

***The applicant has agreed to contact me for additional comments if the proposal changes prior to construction of the project.***

(Before signing this form, please be sure that you have checked the appropriate option above)

\_\_\_\_\_  
Adjacent property owner's signature

\_\_\_\_\_  
Date

**NOTE: IF YOU OBJECT TO THE PROPOSAL, THE REASON(S) YOU OPPOSE THE PROJECT MUST BE SUBMITTED TO VMRC IN WRITING. AN OBJECTION WILL NOT NECESSARILY RESULT IN A DENIAL OF A PERMIT FOR THE PROPOSED WORK. HOWEVER, VALID COMPLAINTS WILL BE GIVEN FULL CONSIDERATION DURING THE PERMIT REVIEW PROCESS.**

APPENDIX A

Adjacent Property Owner's Acknowledgement Form

I, \_\_\_\_\_, own land next to/ across the water from/ in the same cove  
(print adjacent property owner's name)

as the land of \_\_\_\_\_  
(print applicant's name)

I have reviewed the applicant's project drawings dated \_\_\_\_\_ to be submitted for all  
(date of drawings)

necessary Federal, State, and Local permits.

\_\_\_\_\_ I have no comment regarding the proposal

\_\_\_\_\_ I do not object to the proposal

\_\_\_\_\_ I object to the proposal

***The applicant has agreed to contact me for additional comments if the proposal changes prior to construction of the project.***

(Before signing this form, please be sure that you have checked the appropriate option above)

\_\_\_\_\_  
Adjacent property owner's signature

\_\_\_\_\_  
Date

**NOTE: IF YOU OBJECT TO THE PROPOSAL, THE REASON(S) YOU OPPOSE THE PROJECT MUST BE SUBMITTED TO VMRC IN WRITING. AN OBJECTION WILL NOT NECESSARILY RESULT IN A DENIAL OF A PERMIT FOR THE PROPOSED WORK. HOWEVER, VALID COMPLAINTS WILL BE GIVEN FULL CONSIDERATION DURING THE PERMIT REVIEW PROCESS.**

APPENDIX B

CERTIFICATE OF COMPLIANCE FOR CORPS OF ENGINEERS,  
NORFOLK DISTRICT, REGIONAL PERMIT 17 (RP-17) FOR PRIVATE PIERS



- Yes  No Is the proposed pier for private use ONLY?
- Yes  No Does the proposed pier extend less than ¼ the width of the waterway as measured from MHW to MHW or OHW to OHW (including channelward wetlands) based on the narrowest distance across the waterway regardless of the orientation of the proposed pier? (MHW = mean high water line; OHW = ordinary high water mark)
- Yes  No Does the proposed pier and/or mooring structure(s) extend less than 300 feet from mean high water or ordinary high water mark?
- Yes  No If the proposed structure crosses wetland vegetation, is it an open-pile design that has a maximum width of five (5) feet and a minimum height of four (4) feet between the decking and the wetland substrate?
- Yes  No If the proposed pier is to include an attached open-sided roof designed to shelter a single boat slip or lift, is the roof less than 700 square feet?
- Yes  No Have you confirmed that the proposed construction will not take place in one of the reaches which serve as habitat for federally listed threatened or endangered species, Federal Project Channels, and/or areas as listed in the "NOTIFICATION REQUIREMENTS" section of this permit?
- Yes  No If the proposed work is in portions of any waterways listed in Special Condition 4, have you obtained an easement to cross government property from the Army Corps of Engineers Real Estate Office?

**IF YOU HAVE ANSWERED "NO" TO ANY OF THE QUESTIONS ABOVE, THE REGIONAL PERMIT 17 WILL NOT APPLY AND YOU WILL NEED TO SUBMIT A JOINT PERMIT APPLICATION AND OBTAIN A SEPARATE PERMIT FROM THE CORPS BEFORE COMMENCING CONSTRUCTION.**

**IF YOU HAVE ANSWERED "YES" TO ALL OF THE QUESTIONS ABOVE, YOU ARE IN COMPLIANCE WITH THE REGIONAL PERMIT 17. PLEASE SIGN BELOW, ATTACH, AND SUBMIT WITH YOUR COMPLETED JOINT PERMIT APPLICATION. THIS SIGNED CERTIFICATE IS YOUR LETTER OF AUTHORIZATION FROM THE CORPS. YOU WILL NOT RECEIVE ANY OTHER WRITTEN AUTHORIZATION FROM THE CORPS. HOWEVER, YOU MAY NOT PROCEED WITH CONSTRUCTION UNTIL YOU HAVE OBTAINED ALL OTHER NECESSARY STATE AND LOCAL PERMITS.**

**I CERTIFY THAT I HAVE READ AND UNDERSTAND ALL CONDITIONS OF THE MOST CURRENT REGIONAL PERMIT 17 (RP-17) ISSUED BY THE US ARMY CORPS OF ENGINEERS, NORFOLK DISTRICT REGULATORY OFFICE, NORFOLK, VIRGINIA.**

\_\_\_\_\_  
Signature of Property Owner or Agent

Proposed work to be located at:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Date

Copies of the RP-17 can be obtained on our website at  
<http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/RBregional.asp>  
or by contacting the Corps at (757) 201-7652.

## APPENDIX C

### Chesapeake Bay Preservation Act Information

Please answer the following questions to determine if your project is subject to the requirements of the Bay Act Regulations:

1. Is your project located within Tidewater Virginia?  Yes  No (See map on next page)  
- If the answer is "no", the Bay Act requirements do not apply; if "yes", then please continue to question #2.
2. Please indicate if the project proposes to impact any of the following Resource Protection Area (RPA) features:  
 tidal wetlands,  
 nontidal wetlands connected and contiguous to tidal wetlands or water bodies with perennial flow,  
 tidal shoreline,  
 water body with perennial flow (stream, river, creek, etc.)  
 100-foot buffer area landward of any of the above features.  
 "other lands" as designated by the locality (contact the local government for specific information)

If the answer to question #1 was "yes" and any of the features listed under question #2 will be impacted, compliance with the Chesapeake Bay Preservation Act ("Bay Act") and Regulations is required. To achieve compliance with the Bay Act, the applicant may be required to submit a Water Quality Impact Assessment (WQIA) for the review and approval of the local government. Contact the appropriate local government office to determine if a WQIA is required for the proposed activity(ies).

The individual localities, not the Local Wetlands Boards, are responsible for enforcing Bay Act requirements and, therefore, local permits for land disturbance are not issued through this JPA process. **Approval of this wetlands permit does not constitute compliance with the Bay Act regulations nor does it guarantee that the local government will issue land-disturbing permits for this project.** The requirements of the Bay Act may affect the ultimate design and construction of projects. In order to ensure that these requirements are considered early in the permitting process, and to avoid unnecessary and costly delays, applicants should contact their local government as early in the process as possible. Individual localities may request information regarding existing vegetation within the RPA as well as a description and site drawings of any proposed land disturbance, construction, or vegetation clearing. Locality staff charged with ensuring compliance with the Bay Act will then evaluate project proposals and advise their Local Wetlands Boards or other appropriate parties of applicable Bay Act issues.

#### **Notes for all projects in RPAs**

1. Development, construction, land disturbance, or placement of fill within RPA features requires a review from the locality and may require an exception or variance from the local Bay Act program or zoning ordinance. Please contact the appropriate local government to determine the types of development or land uses that are permitted within RPAs.
2. Pursuant to § 9VAC 10-20-105, on-site delineation of the RPA is required for all projects in CBPA localities. Because USGS maps are not always indicative of actual "in-field" conditions, they may not be used to determine the site-specific boundaries of the RPA.

#### **Notes for shoreline erosion control projects in RPAs**

Re-establishment of woody vegetation in the buffer may be required to mitigate for the removal or disturbance of buffer vegetation associated with your proposed project. Please contact the local government to determine the mitigation requirements for impacts to the 100-foot RPA buffer.

Pursuant to § 9VAC 10-20-130.5.a(4), § 9VAC 10-20-130.1, and § 9VAC 10-20-120 of the Virginia Administrative Code, the locality will use the information provided in this Appendix and in the project drawings, along with other information in this permit application, to make a determination that:

1. Any proposed shoreline erosion control measures are necessary and consistent with the nature of the erosion occurring on the site, and the measures have employed the "best available technical advice"
2. Indigenous vegetation will be preserved to the maximum extent practicable
3. Proposed land disturbance has been minimized
4. Appropriate mitigation plantings will provide the required water quality functions of the buffer (§ 9VAC 10-20-130.3)
5. The project is consistent with the locality's comprehensive plan
6. Access to the project will be provided with the minimum disturbance necessary.

# TIDEWATER VIRGINIA

---



## APPENDIX D

### Drawings

On the following pages, you will find sample drawings in plan and cross-sectional view that demonstrate the general format necessary for drawings. You should make sure to consult the detailed lists below to ensure that your drawings contain all of the necessary information. Failure to include all necessary information on your drawings may mean that your application is not considered complete by one or more agencies.

All projects will require the submittal of plan view and cross-sectional view drawings. These drawings should be drawn to a scale no smaller than 1 inch = 200 feet. The number of sets of drawings to be submitted is detailed in the HOW TO APPLY section starting on page 2 of this package. Drawings can be computer-generated or hand-drawn. Please be advised that some Local Wetlands Boards (LWB) require you to have a licensed engineer certify the drawings. You should contact your LWB to determine their specific requirements.

**Plan view drawings should contain the following general informational items:**

- ❖ Name of project
- ❖ North arrow
- ❖ Scale
- ❖ Waterway name, if designated
- ❖ Existing contours
- ❖ Proposed contours (if available)
- ❖ Width of waterway from the mean high water level to the mean high water level (tidal areas), or the ordinary high water mark to the ordinary high water mark (nontidal areas)
- ❖ Direction of flood and ebb (tidal areas), and/or direction of flow in nontidal areas (if applicable)
- ❖ Mean low water level and mean high water level (tidal areas), or ordinary high water mark (nontidal areas)
- ❖ Landward limit of the dune or beach at the site

**AND Plan view drawings should also contain the following specific informational items if they apply to the project:**

#### Resource Impact/Protection-Specific Items:

- ❖ Limits: of existing wetlands, open water, or streams, including submerged aquatic vegetation (SAV); of proposed impact areas, such as fill areas (square feet or acres) or dredge areas; of Chesapeake Bay Preservation Act Resource Protection Area(s) (RPA), including the 100-foot buffer; of proposed clearing within the RPA buffer
- ❖ Location and type of existing vegetation within the 100-foot RPA buffer; location of proposed wetland planting areas (as restoration for temporary impacts or mitigation for permanent impacts); locations of existing and proposed stream channel(s), including all proposed riffle/pool complexes, bars, and bank stabilization structures; location of proposed riprap scour protection
- ❖ Historic/cultural resources
- ❖ Threatened/Endangered resources

#### Structure/Project-Specific Items:

- ❖ Existing and proposed structures, labeled as 'existing' and 'proposed', and their dimensions. These items may include pier(s), including L-heads, T-heads, platforms, and/or decks; roof(s) on roofed structures located over waterways, including boathouses; gasoline storage tanks and/or structures for collecting and handling hazardous material, including settling tanks for travel lift washdown water, paint chips, etc.; return walls; tie-ins to existing bulkhead(s) or riprap; utility line easement(s); utility line/road right(s)-of-way; aerial transmission line structure(s), including towers, poles, platforms, etc.; onsite or offsite dredged material disposal areas, including location of all berms, spillways, erosion and sediment control measures, outfall pipes, and aprons; temporary stockpiles of excavated material; temporary construction access facilities; risers and/or emergency spillways, labeled with their proposed invert elevations; design pool/normal pool for stormwater management ponds/impoundments/reservoirs; intakes and/or outfalls, including splash aprons, relative to mean high water, mean low water, or ordinary high water mark(s); anchoring devices and weights (mooring buoys), including the total swing radius
- ❖ Channelward encroachment of proposed structure(s) from mean high water and mean low water, or from ordinary high water mark
- ❖ For piers that cover  $\frac{1}{4}$  or more of the waterway width: depth soundings, taken at the mean low water level (tidal areas) or the ordinary high water mark (nontidal areas)
- ❖ Distance(s) between structure(s) (piers, boathouses, catwalks, etc.) and mooring pile(s)
- ❖ Minimum distance between dredge cut and vegetated wetlands
- ❖ Latitude and longitude of all mooring structures, in degrees, minutes, and seconds
- ❖ End points and turning points along proposed bulkhead(s), labeled as such
- ❖ For bulkheads, measurements from each end point and each turning point along proposed bulkhead(s) to two fixed points of reference (labeled as such)
- ❖ Structure or method used to contain fill (hay bales, silt fences, etc.)
- ❖ Dimensions of impoundment, dam, or stormwater management facility and area of any vegetative management areas

## APPENDIX D – Drawings (Continued)

**Cross-section view drawings should contain the following General Informational items:**

- ❖ Name of project
- ❖ North arrow
- ❖ Scale
- ❖ Waterway name
- ❖ Mean low water and mean high water lines (tidal areas), and/or ordinary high water mark (nontidal areas)
- ❖ Direction of flood and ebb (tidal areas), and/or direction of flow in nontidal areas (if applicable)
- ❖ Existing contours of the bottom (depths relative to mean low water or ordinary high water mark) and the bank itself
- ❖ Existing contours of the dune or beach

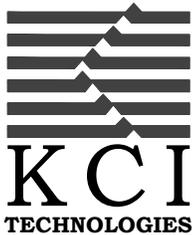
**AND Cross-section view drawings should also contain the following specific informational items if they apply to the project:**

Resource impact/protection-specific Items:

- ❖ Riprap scour protection
- ❖ Proposed wetland planting areas, relative to mean high water and mean low water (tidal areas), or ordinary high water mark (nontidal areas)
- ❖ Depth of buried toe of riprap or marsh toe stabilization
- ❖ Base width, top width, and slope of stone/concrete stabilization structures

Structure/Project-Specific Items:

- ❖ Existing and proposed structures, labeled as 'existing' and 'proposed', and their dimensions. These items may include fill areas, labeled with square footage(s) or acreage(s) over vegetated wetlands and subaqueous bottom; berms, spillways, erosion and sediment control measures, outfall pipes, and aprons at onsite or offsite dredged material disposal area(s); bank grades; deadmen, sheeting, knee braces, etc., as used in the construction of bulkheads; filter cloth; weep holes; intakes and/or outfalls, including splash aprons, relative to mean high water, mean low water, or ordinary high water mark; risers and/or emergency spillways; low-flow channels; culverts, including their proposed invert elevations and diameters; anchoring systems for aquaculture structures; type of chain used to secure mooring buoys to subaqueous bottom
- ❖ For dredge projects, proposed contours of the bottom (depth relative to mean low water or ordinary water level)
- ❖ Bottom width of proposed dredge cut, projected side slope of cut, and estimated top width of cut
- ❖ Ponding depth of onsite or offsite dredged material disposal area
- ❖ Minimum distance between pier decking and vegetated wetland substrate (a.k.a. the "mud line")
- ❖ Water depth below mean low water at the end of proposed boat ramps
- ❖ Depth of penetration of pilings and/or sheeting (bulkheads)
- ❖ Elevation of any proposed fill (including backfill)
- ❖ Structure or method used to contain fill (hay bales, silt fences, etc.)
- ❖ Design pool/normal pool elevation for stormwater management facilities/impoundments/reservoirs
- ❖ Vertical distance from the water surface (relative to mean high water or ordinary high water mark) for all aerial crossings (bridges or overhead utility lines) over navigable water bodies
- ❖ Depth below bottom of water body for submarine utility crossings
- ❖ Dimensions of impoundment, dam, or stormwater management facility through a cross-section of the structure(s); bottom elevation(s) of basin created; depth of pool; and depth(s) to structure(s) on the bottom.



ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD  
 SPARKS, MD 21152  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com

DATE  
 SEPTEMBER 2019

SCALE  
 1" = 2,000'

DESIGNED BY  
 JB

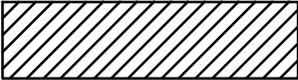
DRAWN BY  
 AAW

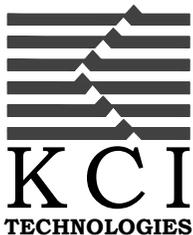
USA GARRISON FORT BELVOIR  
 FAIRFAX COUNTY, VIRGINIA  
 SUPERSTRUCTURE REPLACEMENT OF BRIDGE NO. 1590 ON  
 MT. VERNON ROAD OVER DOGUE CREEK

VICINITY MAP

# GENERAL LEGEND

---

-  - TEMPORARY STONE/LAYDOWN STAGING AREA
-  - WORK AREA
-  - PAVED LAYDOWN STAGING AREA
-  - CONTOUR MAJOR
-  - CONTOUR MINOR
-  - PLAYGROUND SITE
-  - EXISTING TREE LINE
-  - EXISTING ROAD
-  - EXISTING FLOODPLAIN
-  - EXISTING TREE
-  - EXISTING OVERHEAD ELECTRIC LINES
-  - EXISTING WETLAND
-  - EXISTING STREAM
-  - SILT FENCE / LOD LIMITS
-  - 100 YEAR FLOODPLAIN

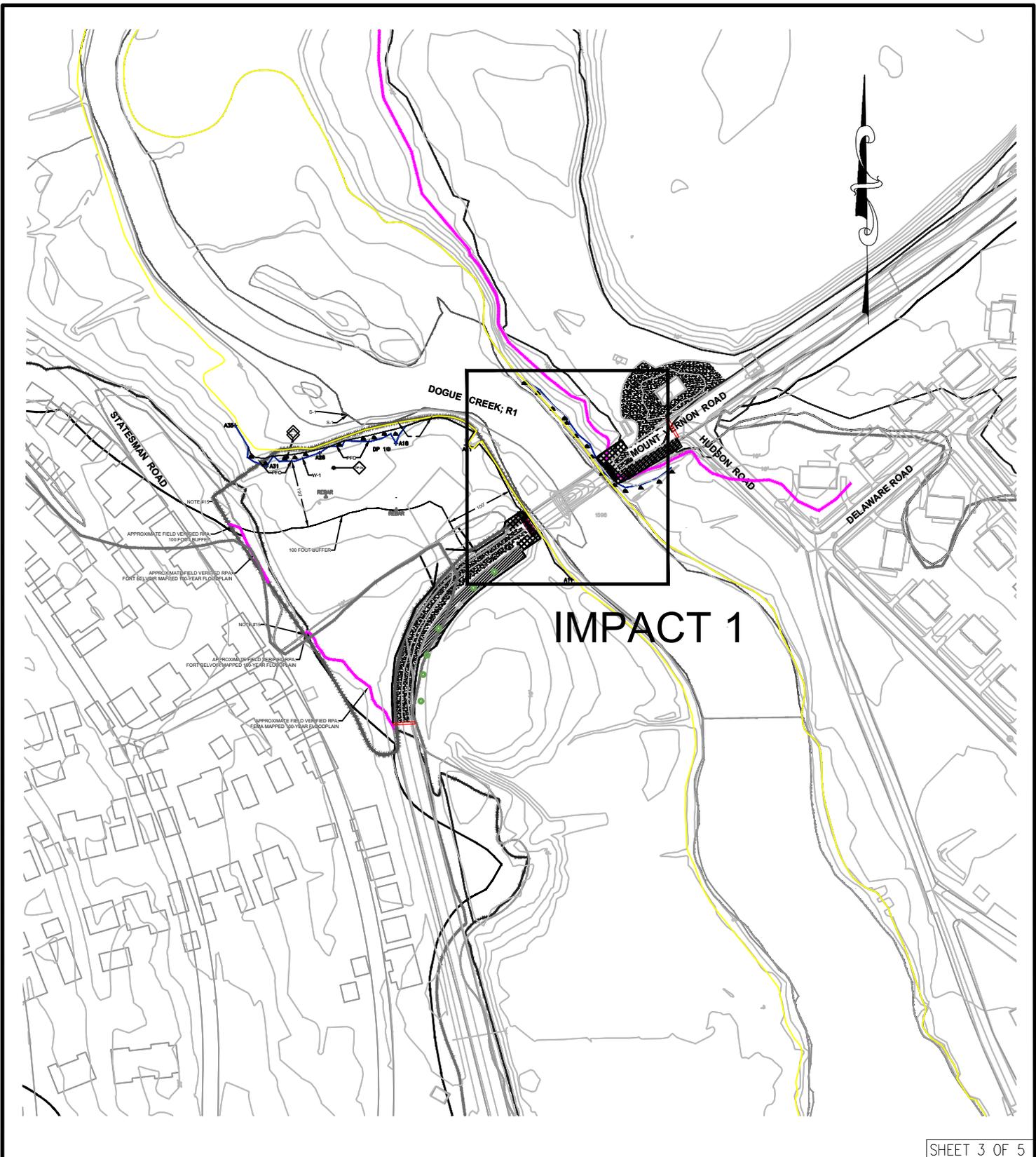


*ENGINEERS*  
*PLANNERS*  
*SCIENTISTS*  
*CONSTRUCTION MANAGERS*  
 936 RIDGEBROOK ROAD  
 SPARKS, MD 21152  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com

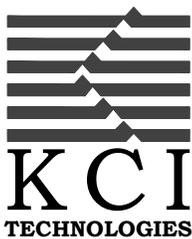
DATE SEPTEMBER 2019
SCALE NTS
DESIGNED BY JB
DRAWN BY AAW

**USA GARRISON FORT BELVOIR**  
 FAIRFAX COUNTY, VIRGINIA  
 SUPERSTRUCTURE REPLACEMENT OF BRIDGE NO. 1590 ON  
 MT. VERNON ROAD OVER DOGUE CREEK  
**LEGEND**

Sep 04, 2019 - 8:30am User: amanda.wagoner  
 M:\2018\1901806729\Drawings\wetland\_files\Impact\_plates\Permit Plates.dwg



SHEET 3 OF 5



ENGINEERS  
 PLANNERS  
 SCIENTISTS  
 CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD  
 SPARKS, MD 21152  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com

DATE  
 SEPTEMBER 2019

SCALE  
 1" = 200'

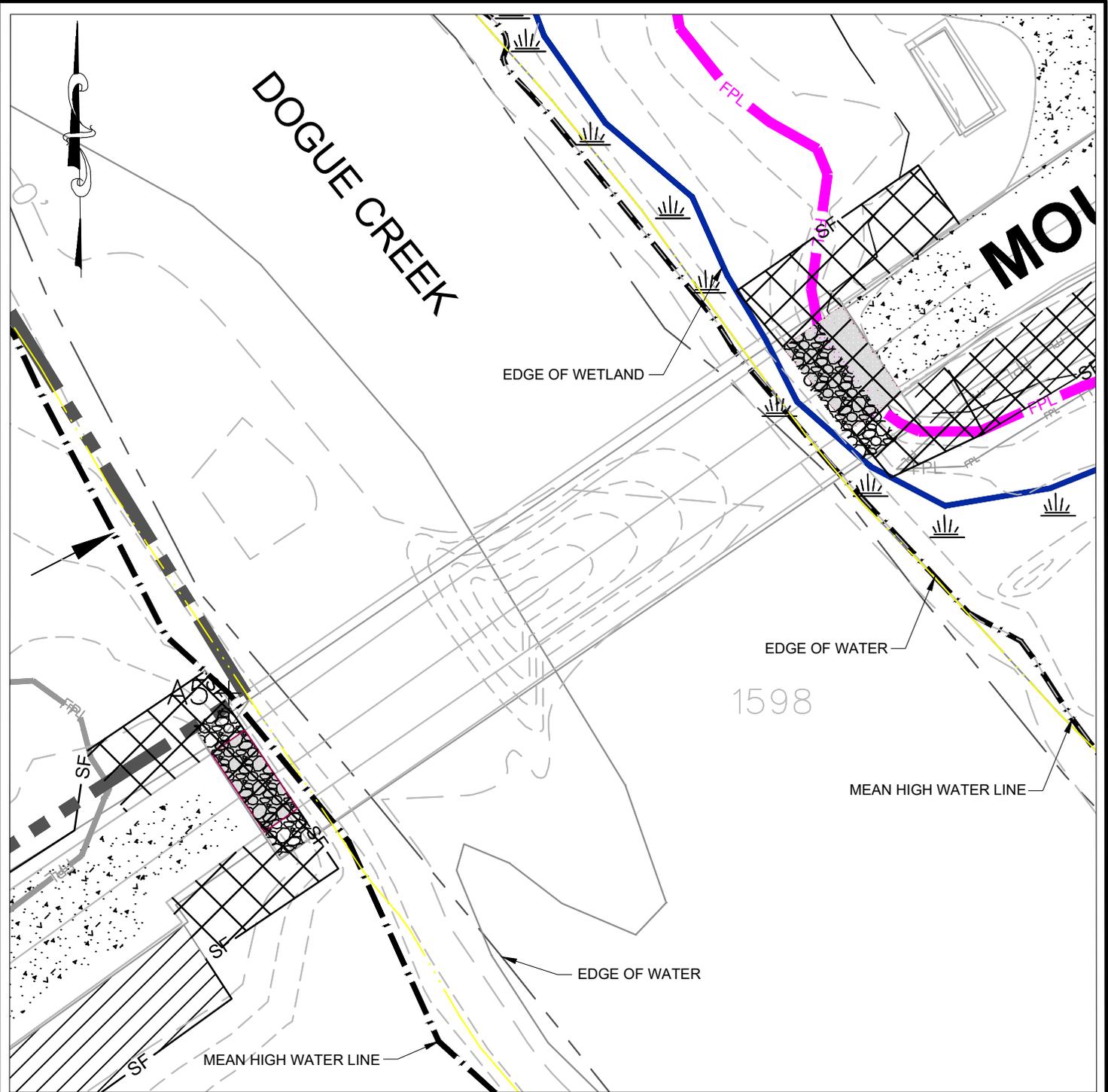
DESIGNED BY  
 JB

DRAWN BY  
 AAW

USA GARRISON FORT BELVOIR  
 FAIRFAX COUNTY, VIRGINIA  
 SUPERSTRUCTURE REPLACEMENT OF BRIDGE NO. 1590 ON  
 MT. VERNON ROAD OVER DOGUE CREEK

# LOCATION MAP

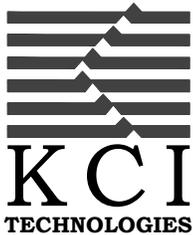
Sep 04, 2019 - 8:31am User: amanda.wagoner  
 M:\2018\1901806729\Drawings\wetland files\Impact\_plates\Permit Plates.dwg



**NOTES:**

1. EXISTING BRIDGE IS BEING REPLACED IN-KIND AND FROM THE ROADWAY.
2. ALL WORK IS ABOVE THE MEAN HIGH WATER LINE.
3. NO WORK SHALL BE PERFORMED BELOW THE MEAN HIGH WATER LINE OR IN THE WETLAND.
4. THE SILT FENCE IS THE EXTENTS OF THE LIMIT OF DISTURBANCE.
5. 18,641 SF / 0.43 AC OF TEMPORARY FLOODPLAIN IMPACT.

SHEET 4 OF 5



*ENGINEERS*  
*PLANNERS*  
*SCIENTISTS*  
*CONSTRUCTION MANAGERS*

936 RIDGEBROOK ROAD  
 SPARKS, MD 21152  
 PHONE: (410) 316-7800  
 FAX: (410) 316-7817  
 www.kci.com

DATE  
 SEPTEMBER 2019

SCALE  
 1" = 30'

DESIGNED BY  
 JB

DRAWN BY  
 AAW

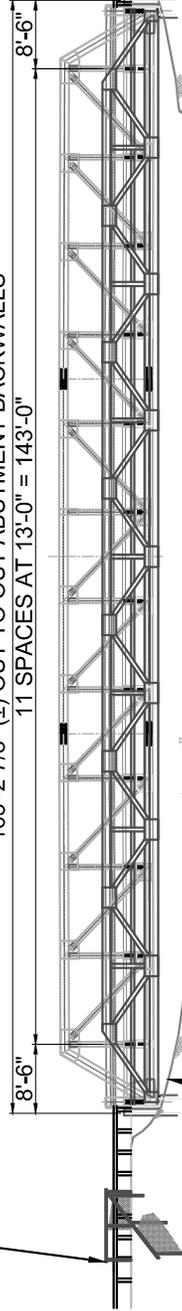
**USA GARRISON FORT BELVOIR**  
 FAIRFAX COUNTY, VIRGINIA  
 SUPERSTRUCTURE REPLACEMENT OF BRIDGE NO. 1590 ON  
 MT. VERNON ROAD OVER DOGUE CREEK

**IMPACT 1**

PROPOSED  
W-BEAM  
TRAFFIC  
BARRIER  
(TYP.)

EXISTING METAL  
CHAIN LINK FENCE  
(TYP.)

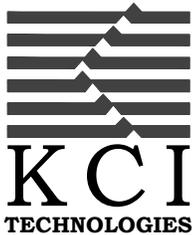
163'-2 7/8" (±) OUT TO OUT ABUTMENT BACKWALLS  
11 SPACES AT 13'-0" = 143'-0"



MEAN HIGH  
WATER LINE

APPROXIMATE  
EXISTING  
GROUND LINE

SHEET 12 OF 5



ENGINEERS  
PLANNERS  
SCIENTISTS  
CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD  
SPARKS, MD 21152  
PHONE: (410) 316-7800  
FAX: (410) 316-7817  
www.kci.com

DATE  
SEPTEMBER 2019

SCALE  
N.T.S.

DESIGNED BY  
JB

DRAWN BY  
AAW

# USA GARRISON FORT BELVOIR

FAIRFAX COUNTY, VIRGINIA

SUPERSTRUCTURE REPLACEMENT OF BRIDGE NO. 1590 ON  
MT. VERNON ROAD OVER DOGUE CREEK

# PROFILE



MEMORANDUM

DATE: August 22, 2019  
TO: Martin Dougherty, PE  
USACE COR  
FROM: Stephen Drumm, PE  
KCI Technologies, Inc.  
SUBJECT: Replacement of the Mount Vernon Road Bridge  
over Dogue Creek in Fairfax County  
Contract Number: W912DR-17-D-0009/W912DR18F0732  
General Contractor: B.L. Harbert International, LLC

KCI has been tasked with a design-build project to replace the existing Mount Vernon Road truss bridge over Dogue Creek with a new truss bridge superstructure. Dogue Creek Bridge is a vehicular and pedestrian bridge located along Mount Vernon Road to the west of Walker Gate on the south post of Fort Belvoir. Mount Vernon Road connects to Mount Vernon Memorial Hwy. (Route 235) outside of Walker Gate, an access control point for entering onto Fort Belvoir's main post. Route 235 is a significant roadway that links a mixture of commercial and residential uses, as well as offers access to public transportation to and from Fort Belvoir.

Mount Vernon road provides an additional access route to Fort Belvoir that is mainly used by the base residential community located on the portion of the post. General access to the base is provided by the main gate and a new truck inspection facility located off Rte. 1 that limits the type and volume of vehicular traffic using Mount Vernon Road and the Walker gate. Therefore the proposed bridge did not need to meet a higher design standard for high volumes of trucks and vehicles crossing the bridge. Maintaining the existing bridge length and width significantly minimized any environmental impacts required to replace the bridge.

Existing Bridge:

The existing bridge is in very poor condition and is load rated for 18 tons. According to the USACE inspection of the Dogue Creek Bridge on November 14, 2018, with a report prepared in February 2019, the Dogue Creek Bridge is in poor condition and if action is not taken, the bridge will continue to deteriorate and will eventually be unsafe for vehicle and/or pedestrian traffic. This situation could either result in closure of the bridge due to safety concerns or a potentially catastrophic failure causing injury or fatality.

The existing bridge was constructed in November 1958 and reconstructed in 1979. It is the only means of traversing Dogue Creek on Fort Belvoir. The existing superstructure is a steel pony truss at 160 feet long with a steel open grate deck width of 22± feet based on a 25'-6" truss spacing and a cantilevered 5 foot sidewalk located on the south side. The bridge is supported by abutment foundations made of

concrete spread footing that are in good condition. The clearance over the water is approximately 6 feet for the low cord of the truss with the bridge deck elevation at 10 feet. Rip-rap slope protection has been placed under the bridge on the steam bank with no signs of erosion from high water flows. See Exhibit A.

#### Proposed Bridge Superstructure:

The superstructure bridge replacement project will remove the existing truss bridge and construct a new 160 foot truss bridge and sidewalk placed on the existing abutments. The new superstructure will be a Pratt truss supported with minor modifications to the back wall abutments for clearance of the truss at the anchor bolts and bearings. The trusses will be placed at the existing 25'-6" center-to-center spacing for a slightly wider travel way for a 23'-6" foot wide deck consisting of a new steel grating and a cantilevered 5 foot sidewalk surfaced with wood planking. The bridge will match the existing roadway and sidewalk profile eliminating any roadway construction or fill in the floodplain. New guard rail will be placed on the bridge with fencing along the sidewalk for vehicular and pedestrian safety. See Exhibit B.

Based upon this situation for maintaining access to the base and residential community, an "in-kind" bridge replacement design-build contract was issued to rebuild the truss superstructure on the existing abutments with the same bridge length, width, and profile configuration. The project will replace the bridge with a similar prefabricated truss from Contech, Inc. Using the existing abutments eliminates any additional impacts to the Creek shoreline, wetlands, and floodplain for Dogue Creek.

#### Proposed Construction staging

Preliminary work starts with closing Mount Vernon Road for the bridge removal and setting up the detours route signs, relocating the existing telecommunications lines from the bridge to a temporary overhead pole line and construction of the stone shoulder staging areas for equipment access and bridge demolition / assembly. Minor tree trimming is required for the trees located adjacent to the bridge to provide clearances for the temporary utility poles and crane clearance for lifting the various bridge parts. The proposed demolition will stage work crews with cranes and man-lifts on the existing roadway and stone pads adjacent to the abutments on each side of the creek. (No instream work is required). Silt fence will be placed around the abutments 15 along the sides and 10+/- feet halfway down the embankment slope staying well away from the high tide line and wetlands along the shore line. (No earth disturbance in front of the abutment wall will be performed) This will provide protection for the creek from any disturbed soils from the abutment work and as work crews disassemble and erect the new bridge.

Once the existing bridge is removed minor modifications to the abutments are required to provide clearance for the truss and install the new anchor bolts and bearing plates. The work will be performed by hand to minimize overall impacts and any potential damage to the existing abutments. With the completion of the abutment modifications, the new bridge trusses will be assembled in the staging area and lifted into place. Temporary bracing supports will be provided to stabilize the trusses followed by installation of the bridge floor beams, metal decking and sidewalk extension. This will be followed by reattaching the telecommunications conduits to the bridge, installation of the new guard rails, sidewalk connections and final site stabilizations / tree replacements.

The existing rip rap stone under the bridge will be inspected and refreshed with new stone as needed to repair the stone revetments under the bridge. There are no signs of erosion or missing stone that would suggest a full replacement of the rip rap with this project providing an opportunity to maintain the rip rap well into the future.

Site Impacts and Design:

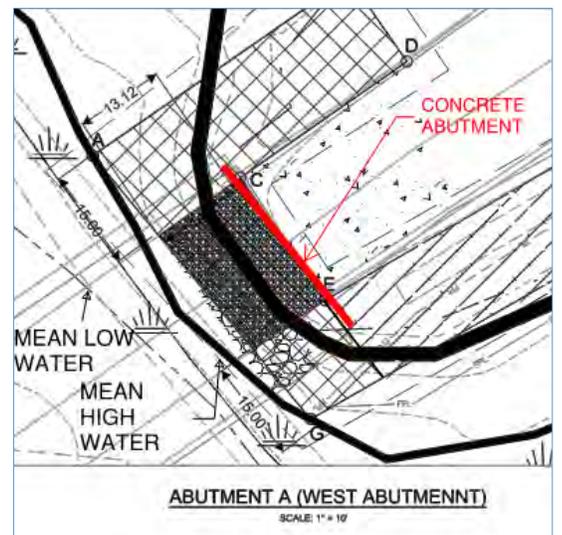
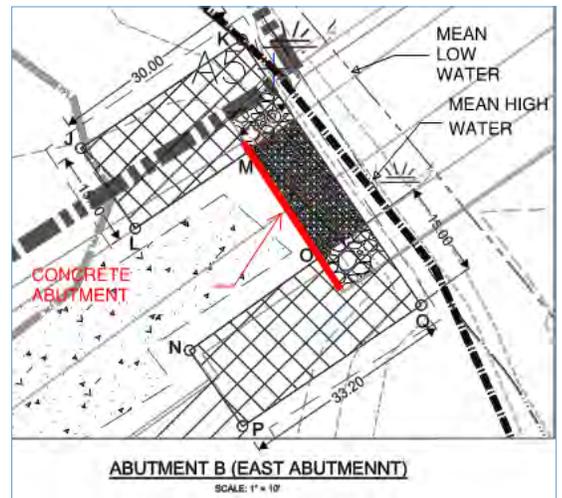
There will be no temporary instream work required for the project. Demolition of the existing bridge will be performed from the existing roadway with a smaller wheeled crane (Telehandler) to remove and lift the deck panel and floor beams with a large heavy lift crane set for lifting the existing trusses to the disassembly staging area. Once the bridge is removed, modifications to the abutments will be completed and the new bridge trusses placed for assembly of the new bridge.

There will be minor utility relocations for the existing Verizon and Comcast communication lines attached to the bridge. Prior to construction, the communication lines will be temporarily relocated as overhead lines crossing the creek with two poles set adjacent to the bridge. The poles will be placed in the LOD for the project with minimal impacts to the trees, trimming and minor grading for the poles and conduits. Once the new bridge is completed, the communication lines will be permanently attached in conduits to the new bridge.

Land disturbance for the projects will be 7350± square feet as the contractor will use the existing roadway as staging and assembly areas for the project. To accommodate equipment, material delivery and assembly of the bridge, a temporary widening of the south side shoulders with graded stone base will be performed to provide an additional working area for the contractor. Once the bridge is built, the stone will be removed and regraded to the current typical section with updated guardrail end treatments.

Estimated total area of disturbance is approximately 7350 s.f. for the areas shown in Exhibit C. The two two impact areas shown below represent the impacts around the abutments for work crews and man-lift access. In the cross hatched pattern extends all around the abutments and encompass the areas needed demolition and erection of the bridge and modifications to the abutment. The straight line pattern is for equipment (man-lift) access and material stage. The dotted pattern is the riprap area under the bridge to be refreshed.

- WEST ABUTMENT 1331 SF
- EAST ABUTMENT 2217 SF
- STAGING AREA 4899 SF



Flood Plain Impacts:

The Mount Vernon Road Bridge crosses Dogue Creek in the lower reaches of its watershed before it discharges into the Potomac River. The bridge is located within the 2010 Flood Insurance Rate Map FEMA Zone AE (Fairfax County, Virginia) Panel 385-9450 and map number 51059C0385E. The Drainage area at the bridge is 15.27 square miles for a 100 year flow of 8,333 cfs. The 100 year and 500 year elevations at the bridge are 10 and 12 feet respectively.

Fort Belvoir is located on the Potomac River of the Chesapeake Bay watershed. The Dogue Creek watershed is approximately 19.5 square miles in area, and includes four subwatersheds. Approximately 5.8 square miles (30%) of the watershed lies within Fort Belvoir. Total stream length within the watershed is 31.9 miles (Fairfax County, 2011).

**Subwatersheds of the Dogue Creek Watershed**

Subwatershed	Area (square miles)	Stream Length (miles)
Barnyard Run	2.4	5.3
Mainstem	5.9	10.2
North Fork	4.4	9.8
Piney Run	2.7	6.6

Source: Fairfax County (2011)

Dogue Creek and Potomac River are two tidal freshwater surface water resources in the vicinity of the proposed project. The Potomac River flood waters extend up Dogue Creek to approximately 1,000 feet past the bridge with an elevation of 10 feet. The base flow water depths in Dogue Creek at the bridge are approximately 4 feet deep mean at low water. Dogue Creek is a flood-prone area on the west and east banks mapped by the Federal Emergency Management Agency (FEMA) for the 1 percent annual chance flood event (“100-year floodplain”) at 10 feet elevation.

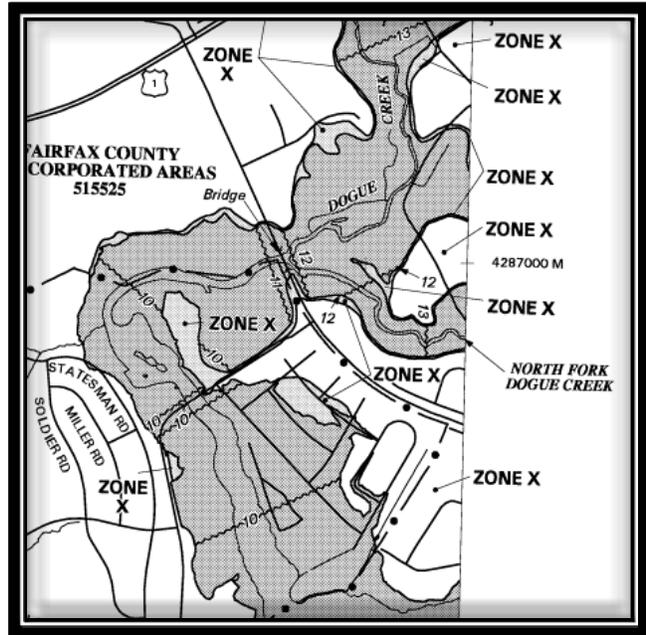


FEMA Flood Flows 10 to 500 Year Storm:

Summary of Discharges Flooding Source and Location	Drainage Area Square Miles	10 percent Annual Chance	2 percent Annual Chance	1 percent Annual Chance	.2 percent Annual Chance
Dogue Creek					
At Mount Vernon Road	15.27	4,740 cfs	7,100 cfs	8,333 cfs	11,500 cfs
Just upstream of confluence of North Fork Dogue Creek	10.78	2,675 cfs	3,750 cfs	4,250 cfs	5,350 cfs
At US Rte. 1	10.57	2,636 cfs	3,740 cfs	4,213 cfs	5,300 cfs

Dogue Creek Flood Plain Map:

The Mount Vernon Road bridge is located in the floodplain as shown on the FEMA map to the right. This project will replace the bridge with a new superstructure matching the existing bridge type, size and configuration resulting in no changes to waterway opening or fill in the floodplain. The abutments are being reused as they are in good condition, resulting in the new verses old bridge length, width and elevations remaining unchanged. The flow area under the bridge consists of a 130 foot wide channel with an average depth of water 4 feet and the clearance from the water surface to low cord is 6 feet (see photo) and the length of the bridge is 160 feet and the calculated effective flow area is approximately 1,600 sf accounting for the openings with the truss above the low cord.



The 100 year velocity through the bridge is calculated at 5.2± feet per second assuming no back water influence from the Potomac River.

The proposed In-kind Bridge maintains similar bridge configuration details with the bridge length (160'), width (25'-6" center-to-center truss) and no changes to roadway profile for Mount Vernon Road with the bridge deck meeting the existing pavement. Both bridges are truss configuration structures designed to HL 93 AASHTO live loading with impact and Military Class 50 loadings. Both have an open grate steel deck allowing the free flow of water through the bridge to Dogue Creek.

Standard Hydraulic Non-Study Permit Statement:

This project should not cause more than minimal changes to the peak flow characteristics, should not increase the flow potential, nor cause more than minimal degradation of water quality of the Creek. This project should pose no restriction to the normally expected range of flows, should withstand expected normal high flows and will not restrict low flows. This project complies with applicable FEMA-approved state management requirements.

A detailed hydraulic study of the bridge replacement to access the hydraulic impacts of the proposed structure is not warranted. The proposed structure is similar in its length, width and height to have no impact to the 100 year flood elevations. Additionally, the structure is located in the backwater of the Potomac River which sets the flood level for the adjacent flood plain. Any changes in flood flows or velocities due to the minor differences between the structures are outweighed by the Potomac River flood elevations.

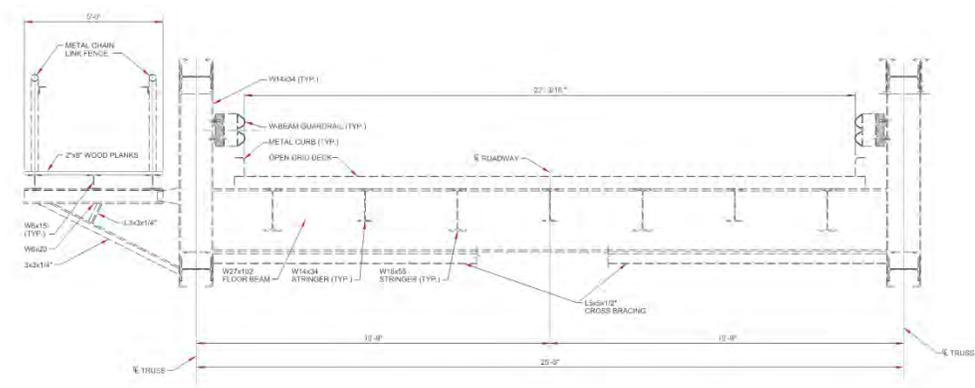
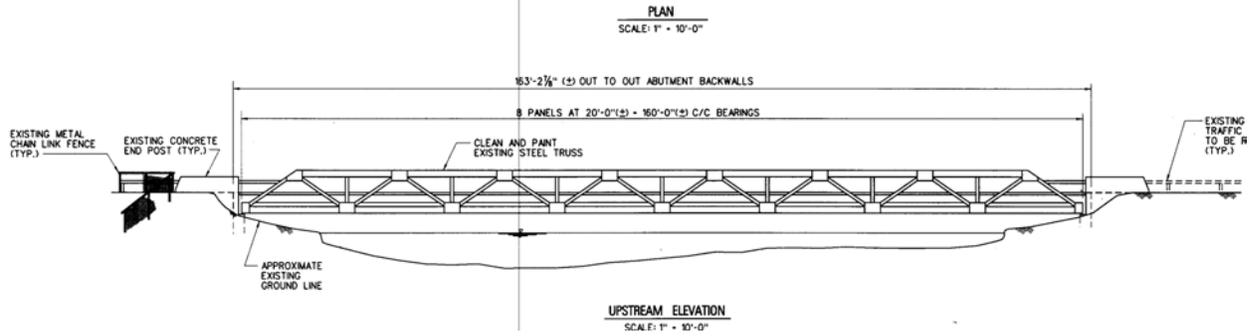
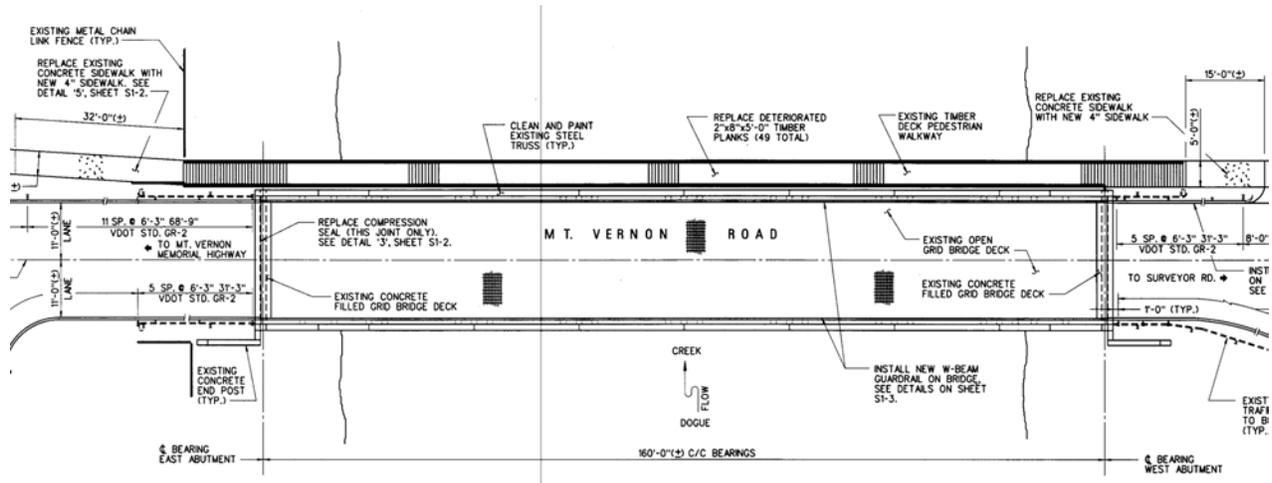
Summary:

The proposed project replaces the existing Mount Vernon Bridge over Dogue Creek with a new bridge truss structure that meets current bridge loading standards, minimizes environmental impact by

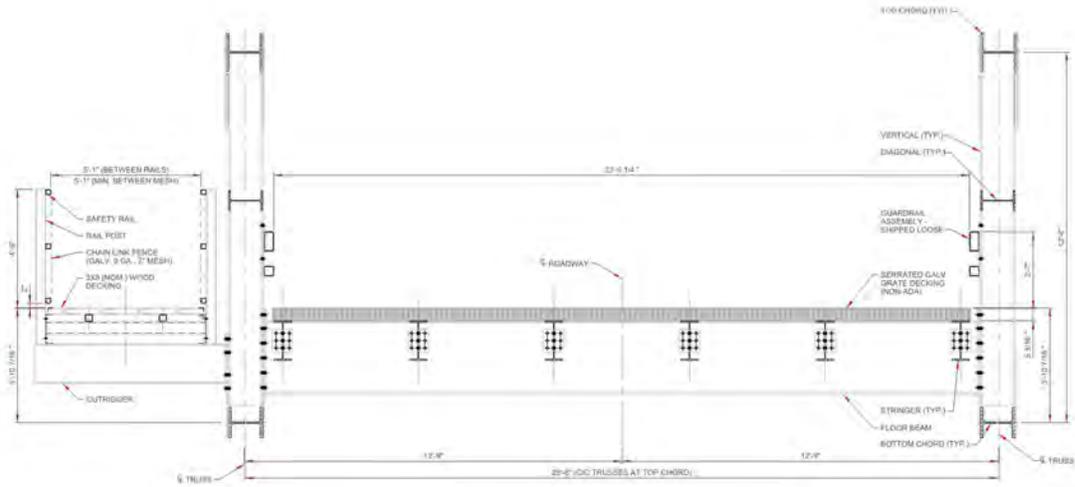
maintaining the existing length, width and profile, provides a new sidewalk for community access, updates the guard rail to current standards, and updates the existing telecommunications crossing at the bridge. Temporary impacts are under 7500 sf for the staging of construction equipment with no impacts, to wetlands, endangered species, and or fill in the floodplain. The three trees along Mount Vernon Road will be replaced and three additional trees placed for mitigation with the temporary removal of the trees.

M:\2018\901806729DB\Submtls\100 % submittal\Submission folder 100%\Dogue creek bridge replacement jpa permit.docx

# Exhibit A: Existing Dogue Creek Bridge Plans

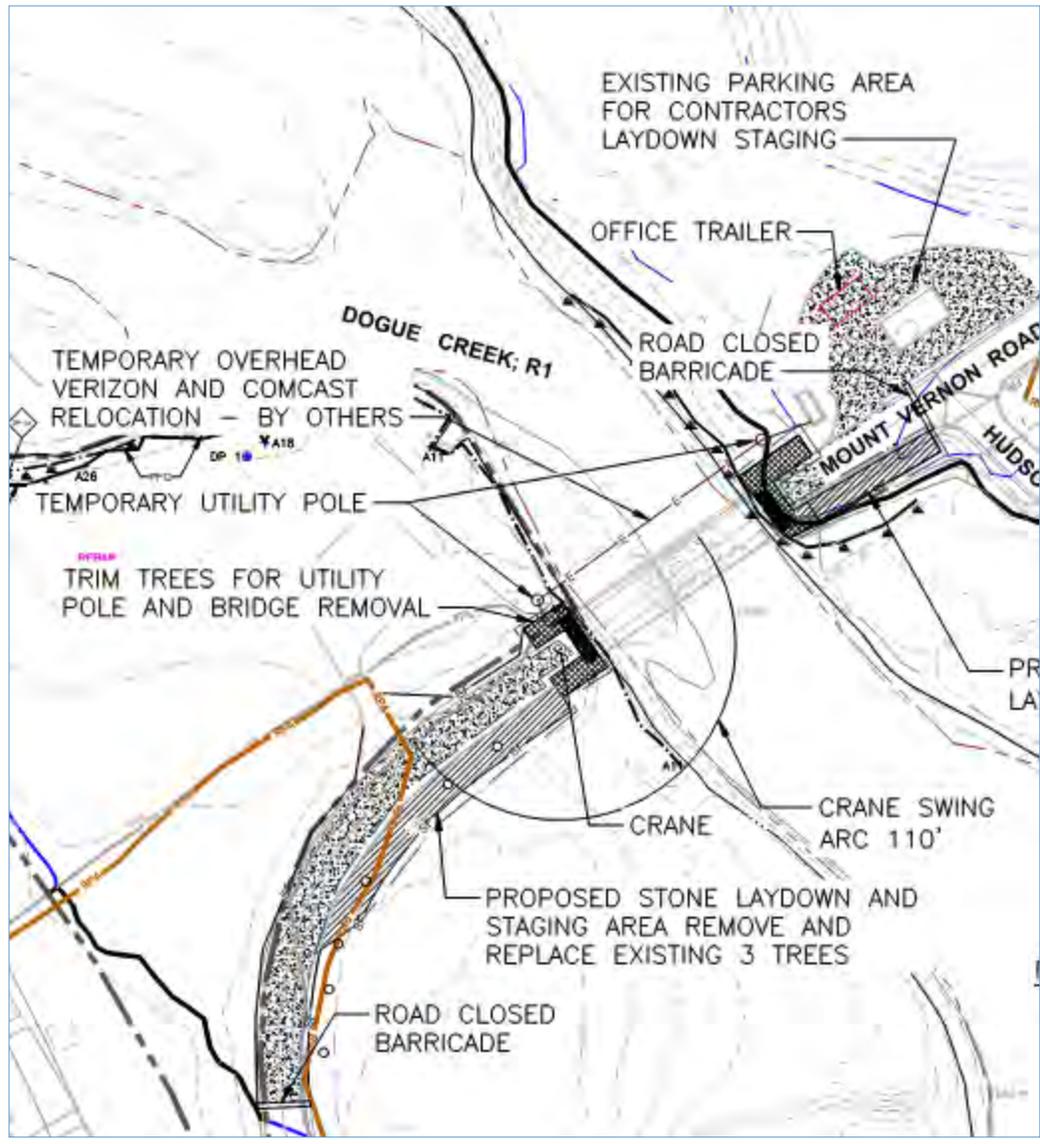






TYPICAL SECTION - PROPOSED BRIDGE  
SCALE: 1/2" = 1'-0"

Site Plan Exhibit C





## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Virginia Ecological Services Field Office  
6669 Short Lane  
Gloucester, VA 23061-4410  
Phone: (804) 693-6694 Fax: (804) 693-9032  
<http://www.fws.gov/northeast/virginiafield/>

In Reply Refer To:

August 21, 2019

Consultation Code: 05E2VA00-2019-SLI-5916

Event Code: 05E2VA00-2019-E-14799

Project Name: Douge Creek Bridge Replacement

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
-

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Virginia Ecological Services Field Office**

6669 Short Lane

Gloucester, VA 23061-4410

(804) 693-6694

---

## Project Summary

Consultation Code: 05E2VA00-2019-SLI-5916

Event Code: 05E2VA00-2019-E-14799

Project Name: Douge Creek Bridge Replacement

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: Bridge Replacement

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.70903908286975N77.13306803668166W>



Counties: Fairfax, VA

---

## Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

---

# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

---



## Virginia Department of Game and Inland Fisheries

 
[Home](#) » [By Coordinates](#) » VaFWIS GeographicSelect Options

Fish and Wildlife Information Service

Visitor Options

Species Information

[By Name](#)[By Land Management](#)[References](#)

Geographic Search

[By Map](#)**[By Coordinates](#)**[By Place Name](#)[Help](#)

Show This Page as  
Printer Friendly

**VaFWIS Search Report** Compiled on 8/21/2019, 9:18:36 AM

 Known or likely to occur within a **3 mile radius around point 38,42,33.5 -77,07,57.9**  
 in **059 Fairfax County, VA**
[View Map of Site Location](#)

 703 Known or Likely Species ordered by Status Concern for Conservation  
 (displaying first 31) (31 species with Status\* or Tier I\*\* or Tier II\*\*)

<u>BOVA Code</u>	<u>Status*</u>	<u>Tier**</u>	<u>Common Name</u>	<u>Scientific Name</u>
010032	FESE	Ib	<a href="#">Sturgeon, Atlantic</a>	Acipenser oxyrinchus
050022	FTST	Ia	<a href="#">Bat, northern long-eared</a>	Myotis septentrionalis
060029	FT	Ila	<a href="#">Lance, yellow</a>	Elliptio lanceolata
050020	SE	Ia	<a href="#">Bat, little brown</a>	Myotis lucifugus
050027	SE	Ia	<a href="#">Bat, tri-colored</a>	Perimyotis subflavus
060006	SE	Ib	<a href="#">Floater, brook</a>	Alasmodonta varicosa
030062	ST	Ia	<a href="#">Turtle, wood</a>	Glyptemys insculpta
040096	ST	Ia	<a href="#">Falcon, peregrine</a>	Falco peregrinus
040293	ST	Ia	<a href="#">Shrike, loggerhead</a>	Lanius ludovicianus
040379	ST	Ia	<a href="#">Sparrow, Henslow's</a>	Ammodramus henslowii
100155	ST	Ia	<a href="#">Skipper, Appalachian grizzled</a>	Pyrgus wyandot
040292	ST		<a href="#">Shrike, migrant loggerhead</a>	Lanius ludovicianus migrans
030063	CC	IIla	<a href="#">Turtle, spotted</a>	Clemmys guttata
010077		Ia	<a href="#">Shiner, bridge</a>	Notropis bifrenatus
040040		Ia	<a href="#">Ibis, glossy</a>	Plegadis falcinellus
040306		Ia	<a href="#">Warbler, golden-winged</a>	Vermivora chrysoptera
100248		Ia	<a href="#">Fritillary, regal</a>	Speyeria idalia idalia
040213		Ic	<a href="#">Owl, northern saw-whet</a>	Aegolius acadicus
070027		Ic	<a href="#">Amphipod, Northern Virginia well</a>	Stygobromus phreaticus
040052		Ila	<a href="#">Duck, American black</a>	Anas rubripes
040033		Ila	<a href="#">Egret, snowy</a>	Egretta thula
040029		Ila	<a href="#">Heron, little blue</a>	Egretta caerulea caerulea
040036		Ila	<a href="#">Night-heron, yellow-crowned</a>	Nyctanassa violacea violacea
040181		Ila	<a href="#">Tern, common</a>	Sterna hirundo
040320		Ila	<a href="#">Warbler, cerulean</a>	Setophaga cerulea
040140		Ila	<a href="#">Woodcock, American</a>	Scolopax minor
060071		Ila	<a href="#">Lampmussel, yellow</a>	Lampsilis cariosa
040203		Ilb	<a href="#">Cuckoo, black-billed</a>	Coccyzus erythrophthalmus
040105		Ilb	<a href="#">Rail, king</a>	Rallus elegans
040304		Ilc	<a href="#">Warbler, Swainson's</a>	Limnithlypis swainsonii
100154		Ilc	<a href="#">Butterfly, Persius duskywing</a>	Erynnis persius persius

 To view **All 703 species** [View 703](#)

\*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

\*\*I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Very Low Conservation Need  
 Virginia Wildlife Action Plan Conservation Opportunity Ranking:  
 a - On the ground management strategies/actions exist and can be feasibly implemented.; b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;  
 c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

**Anadromous Fish Use Streams** ( 5 records )

[View Map of All Anadromous Fish Use Streams](#)

Stream ID	Stream Name	Reach Status	Anadromous Fish Species			View Map
			Different Species	Highest TE *	Highest Tier **	
C18	<a href="#">Dogue creek</a>	Confirmed	4		IV	<a href="#">Yes</a>
C2	<a href="#">Accotink creek</a>	Confirmed	2		IV	<a href="#">Yes</a>
C62	<a href="#">Pohick creek</a>	Confirmed	3		IV	<a href="#">Yes</a>
C64	<a href="#">Potomac river</a>	Confirmed	6		IV	<a href="#">Yes</a>
P94	<a href="#">Little Hunting Creek</a>	Potential	0			<a href="#">Yes</a>

**Impediments to Fish Passage** ( 1 records )

[View Map of All Fish Impediments](#)

ID	Name	River	View Map
1176	<a href="#">HILLTOP DAM</a>	TR-DOGUE CREEK	<a href="#">Yes</a>

**Threatened and Endangered Waters** ( 19 Reaches )

[View Map of All Threatened and Endangered Waters](#)

Stream Name	T&E Waters Species						View Map
	Highest TE *	BOVA Code, Status *, Tier **, Common & Scientific Name					
(014379 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
(019299 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
(019520 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Accotink Creek (014516 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Accotink Creek (016527 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Accotink Creek (019916 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Accotink Creek (020814 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Accotink Creek (020944 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Accotink Creek (021836 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Accotink Creek (025577 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Accotink Creek (026840 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Accotink Creek (05328 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Accotink Creek (09391 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Dogue Creek (013811 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Dogue Creek (018747 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Dogue Creek (019048 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Dogue Creek (022834 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Dogue Creek (024642 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>
Dogue Creek (031924 )	ST	030062	ST	Ia	<a href="#">Turtle_wood</a>	Glyptemys insculpta	<a href="#">Yes</a>

**Managed Trout Streams**

N/A

**Bald Eagle Concentration Areas and Roosts**

are present. [View Map of Bald Eagle Concentration Areas and Roosts](#)

( 6 records )

BECAR ID	Observation Year	Authority	Type	Comments	View Map
53	2006 - 2007	VDGIF, Center for Conservation Biology	Summer Concentration Area	Eagle_use High	<a href="#">Yes</a>
54	2006 - 2007	VDGIF, Center for Conservation Biology	Summer Concentration Area	Eagle_use Low	<a href="#">Yes</a>
55	2006 - 2007	VDGIF, Center for Conservation Biology	Summer Concentration Area	Eagle_use Moderate	<a href="#">Yes</a>
56	2006 - 2007	VDGIF, Center for Conservation Biology	Winter Concentration Area	Eagle_use High	<a href="#">Yes</a>

57	2006 - 2007	VDGIF, Center for Conservation Biology	Winter Concentration Area	Eagle_use Low	Yes
58	2006 - 2007	VDGIF, Center for Conservation Biology	Winter Concentration Area	Eagle_use Moderate	Yes

**Bald Eagle Nests** ( 7 records )

[View Map of All Query Results](#)  
[Bald Eagle Nests](#)

Nest	N Obs	Latest Date	DGIF Nest Status	View Map
<a href="#">FF0301</a>	2	May 1 2003	HISTORIC	<a href="#">Yes</a>
<a href="#">FF0401</a>	15	Apr 24 2011	Unknown	<a href="#">Yes</a>
<a href="#">FF0402</a>	5	May 3 2006	HISTORIC	<a href="#">Yes</a>
<a href="#">FF0501</a>	14	Apr 24 2011	Unknown	<a href="#">Yes</a>
<a href="#">FF9001</a>	2	Jan 1 1991	HISTORIC	<a href="#">Yes</a>
<a href="#">FF9201</a>	17	Apr 29 2007	UNKNOWN	<a href="#">Yes</a>
<a href="#">FF9202</a>	18	Apr 27 2000	HISTORIC	<a href="#">Yes</a>

Displayed 7 Bald Eagle Nests

**Habitat Predicted for Aquatic WAP Tier I & II Species** ( 7 Reaches )

[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species](#)

Stream Name	Tier Species					View Map
	Highest TE *	BOVA Code, Status *, Tier **, Common & Scientific Name				
Accotink Creek (20700102)		010077		Ia	<a href="#">Shiner, bridle</a> <a href="#">Notropis bifrenatus</a>	<a href="#">Yes</a>
Accotink Creek (20700102)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a> <a href="#">Glyptemys insculpta</a>	<a href="#">Yes</a>
Dogue Creek (20700102)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a> <a href="#">Glyptemys insculpta</a>	<a href="#">Yes</a>
Little Hunting Creek (20700102)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a> <a href="#">Glyptemys insculpta</a>	<a href="#">Yes</a>
South Run (20700102)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a> <a href="#">Glyptemys insculpta</a>	<a href="#">Yes</a>
tributary (20700102)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a> <a href="#">Glyptemys insculpta</a>	<a href="#">Yes</a>
Unnamed trib. of Dogue Creek (20700102)	ST	030062	ST	Ia	<a href="#">Turtle, wood</a> <a href="#">Glyptemys insculpta</a>	<a href="#">Yes</a>

**Habitat Predicted for Terrestrial WAP Tier I & II Species** ( 3 Species )

[View Map of Combined Terrestrial Habitat Predicted for 3 WAP Tier I & II Species Listed Below](#)

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
040105		IIb	<a href="#">Rail, king</a>	<a href="#">Rallus elegans</a>	<a href="#">Yes</a>
040038			<a href="#">Bittern, American</a>	<a href="#">Botaurus lentiginosus</a>	<a href="#">Yes</a>
040093			<a href="#">Eagle, bald</a>	<a href="#">Haliaeetus leucocephalus</a>	<a href="#">Yes</a>

**Virginia Breeding Bird Atlas Blocks** ( 5 records )

[View Map of All Query Results](#)  
[Virginia Breeding Bird Atlas Blocks](#)

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE *	Highest Tier **	
54195	<a href="#">Alexandria, SW</a>	95		II	<a href="#">Yes</a>
53196	<a href="#">Annandale, SE</a>	73		III	<a href="#">Yes</a>
53184	<a href="#">Fort Belvoir, CE</a>	85		II	<a href="#">Yes</a>
53182	<a href="#">Fort Belvoir, NE</a>	71		II	<a href="#">Yes</a>
54181	<a href="#">Mount Vernon, NW</a>	57		III	<a href="#">Yes</a>

**Public Holdings:** ( 4 names )

Name	Agency	Level
George Washington Memorial National Parkway	National Park Service	Federal
Fort Belvoir Military Reservation	U.S. Dept. of Army	Federal
Jackson Mile Abbott Wetland Refuge	U.S. Dept. of Army	Federal
George Washington Grist Mill State Park	VA Dept. of Conservation and Recreation	State

**Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:**

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
059	<a href="#">Fairfax</a>	559	FESE	I

**USGS 7.5' Quadrangles:**

Fort Belvoir  
Annandale  
Mount Vernon  
Alexandria

**USGS NRCS Watersheds in Virginia:**

N/A

**USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:**

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
PL27	<a href="#">Dogue Creek</a>	77	ST	I
PL28	<a href="#">Potomac River-Little Hunting Creek</a>	71	ST	I
PL29	<a href="#">Pohick Creek</a>	75	ST	I
PL30	<a href="#">Accotink Creek</a>	81	SE	I
PL50	<a href="#">Potomac River-Occoquan Bay</a>	74	ST	I

Compiled on 8/21/2019, 9:18:37 AM V989422.0 report=V searchType=R dist= 4827 poi= 38.42,33.5 -77.07,57.9

| 8/21/2019, 9:18:37 AM | [DGIF](#) | [Credits](#) | [Disclaimer](#) | Please view our [privacy policy](#) |  
© 1998-2019 Commonwealth of Virginia Department of Game and Inland Fisheries  
Visitor 989422

If you have difficulty reading or accessing documents, please [Contact Us](#) for assistance.

**APPENDIX E – COASTAL ZONE FEDERAL CONSISTENCY DETERMINATION**

**APPENDIX E**  
**Determination of Consistency with**  
**Virginia's Coastal Resources Management Program**

This document provides the Commonwealth of Virginia with the Fort Belvoir Consistency Determination under the Coastal Zone Management Act Section 307(c)(1) and 15 CFR Part 930, Subpart C, for the Dogue Creek Bridge Rehabilitation. The information in this Consistency Determination is provided pursuant to 15 CFR §930.39.

This document represents an analysis of project activities in light of established Virginia Coastal Resources Management Program (CRMP) Enforceable Policies and Programs. Furthermore, submission of this consistency determination reflects the commitment of the U.S. Department of the Army (Army) to comply with those Enforceable Policies and Programs. The Proposed Action would be implemented in a manner that is consistent with the Virginia CRMP. The Army has determined that the rehabilitation of the bridge would have a negligible impact on any land and water uses or natural resources of the Commonwealth of Virginia's coastal zone.

**E1 Description of Proposed Action**

The Proposed Action takes place entirely within the boundaries of Fort Belvoir (Figure 1-1). The Proposed Action entails rehabilitating Dogue Creek Bridge by removing and replacing the bridge's superstructure. The bridge's substructure will remain in place. The Proposed Action would involve the following:

- Set up detour route and close bridge to vehicular and pedestrian traffic;
- Install traffic barricades on the east and west sides of existing bridge;
- Trim trees (grubbing not anticipated);
- Remove existing truss bridge and sidewalk structure;
- Clear dirt and debris from abutment beam seats;
- Replace existing bearings;
- Set new bridge superstructure;
- Replace concrete sidewalks at east and west ends of bridge walkway (replace existing concrete sidewalk with new sidewalk);
- Install new W-beam guardrail on bridge and approaches (existing W-beam traffic barrier would be removed); and
- Relocate existing utilities.

Removal and replacement of the superstructure would be completed by use of an approximately 30-foot tall crane placed on Mount Vernon Road. The existing truss bridge would be removed in separate pieces and laid on Mount Vernon Road just behind the crane. This laydown area would also be used for material storage, material handling, bridge assembly and disassembly. The area just south of the laydown area would be used for further material storage, a turnaround for equipment and a secondary crane location. This adjacent area would also be used for a convex for tools, equipment and fuel storage and parking for construction employees.

## **E2 Assessment of Probable Effects**

Fort Belvoir has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the Dogue Creek Bridge Rehabilitation in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S. Code 4321-4347), and 32 Code of Federal Regulations (CFR) Part 651, Environmental Analysis of Army Actions.

The Army intends to obtain all applicable permits required for implementation of the Proposed Action alternative. A review of the permits and/or approvals required under the enforceable policies is being conducted. The Army has evaluated the rehabilitation of the bridge for its foreseeable effects on the following enforceable policies:

**Fisheries** – The Proposed Action alternative has no foreseeable impacts on fish or shellfish resources and would not affect the promotion of, or access to, commercial or recreational fisheries. The proposed site is located approximately 2.0 miles northwest of the Potomac River and is directly adjacent to Dogue Creek. The closest water features near the proposed site are Dogue Creek and associated tidal wetlands located directly adjacent to the site. These wetlands drain to Dogue Creek, which drains to the Potomac River. Compliance with the installation's Municipal Separate Storm Sewer System (MS4) Permit and the Virginia Erosion and Sediment Control regulations would minimize the risk of sediment being transported off the site to the Potomac River Fishery. Best management practices recommended by the Virginia Departments of Conservation and Recreation (DCR) and Forestry (DOF) would be employed when necessary.

**Subaqueous Lands Management** – The Virginia Marine Resources Commission (VMRC), pursuant to Virginia Administrative Code (VAC) Section 28.2-1204, has jurisdiction over encroachments in, on, or over any State-owned rivers, streams and creeks. The project would have no foreseeable impacts on subaqueous resources.

**Tidal and Non-tidal Wetlands Management** – The Proposed Action alternative would not affect any tidal or non-tidal wetlands (Figure 3-1).

**Dunes Management** – The Proposed Action alternative would not affect any coastal primary sand dunes.

**Non-Point Source Water Pollution Control** – Typically, a Proposed Action that is greater than one acre, would require an erosion and sediment (ESC) plan and a stormwater management plan to be developed. The ESC plan would include temporary erosion and sediment control measures. The ESC plan and stormwater management plan would be prepared utilizing the requirements for water quality and quantity found in the Virginia Technical Criteria Part IIB (9VAC25-870-62 through 9VAC25-870-92). The Proposed Action disturbance of soil is approximately 7,350 square feet, therefore an ESC plan and stormwater management plan are not required. Minor short-term adverse impacts would occur from the Proposed Action on surface water with regard to water quality. Appropriate temporary erosion and sediment control measures and stormwater Best Management Practices (BMP) will be employed to minimize impacts to water quality from bridge dust and debris and earth disturbance and potential erosion from clearing dirt and debris from abutments during construction.

**Point Source Water Pollution Control** – The Proposed Action would not result in point source water discharge.

**Shoreline Sanitation** – The Proposed Action is not located on or near a shoreline. The Proposed Action alternative would therefore have no impact on shoreline sanitation.

**Air Pollution Control** – The proposed site is located within an ozone (O<sub>3</sub>) and PM<sub>2.5</sub> non-attainment area, triggering the need to analyze emissions and determine the applicability of General Conformity Rule under the Clean Air Act (CAA). A construction emissions estimate indicates that the bridge rehabilitation activity would not generate sufficient emissions to trigger a need for a full General Conformity Analysis. No changes to the Fort Belvoir's Title V air permit would be required.

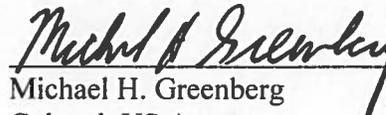
The estimated emissions associated with the bridge rehabilitation project are very low, a small fraction of what was reported for Fort Belvoir for each pollutant in 2018. The temporary impacts to air quality would be minor short-term impacts that are not regionally or locally significant.

**Coastal Lands Management** – Resource Protection Areas (RPAs) are associated with Dogue Creek and its tidal wetlands (Figure 3-1). The bridge rehabilitation would have no direct impacts to Dogue Creek or its tidal wetlands. Minor short-term adverse impacts to RPAs are anticipated as there are Dogue Creek and its tidal wetlands buffers in the project area. Appropriate temporary erosion and sediment control measures and stormwater BMPs will be employed to minimize impacts to Dogue Creek and its tidal wetlands from bridge dust and debris and earth disturbance and potential erosion from clearing dirt and debris from abutments during construction.

### **E3 Summary of Findings**

Based on the above analysis, which is elaborated on in the EA, Fort Belvoir personnel would: (1) ensure that the construction contractor uses and maintains appropriate temporary erosion and sediment controls; and (2) obtain the requisite permits and approvals. Fort Belvoir finds that the proposed bridge rehabilitation is fully consistent to the maximum extent practicable with the federally approved enforceable provisions of Virginia CRMP, pursuant to the Coastal Zone Management Act of 1972, as amended and in accordance with 15 CFR 930.30.

Pursuant to 15 CFR Part 930.41, the Virginia Coastal Resources Management Program has 60 days from receipt of this letter in which to concur with or object to this Consistency Determination, or to request an extension, in writing, under 15 CFR Part 930.41(b). Virginia's concurrence will be presumed if its response is not received by Fort Belvoir on the 60<sup>th</sup> day from receipt of this determination. The state's response should be sent to U.S. Army Garrison Fort Belvoir, 9430 Jackson Loop, Suite 200, Fort Belvoir, VA 22060-5116.

  
Michael H. Greenberg  
Colonel, US Army  
Commanding