

The Final Environmental Impact Statement (FEIS) For Training Range and Garrison Support Facilities Construction and Operation



Fort Stewart, Georgia

Volume II

APPENDIX D

WETLANDS

CASE DOCUMENT FOR: DIGITAL MULTIPURPOSE TRAINING RANGE
APPLICATION NUMBER 200900885
FOR A DEPARTMENT OF THE ARMY PERMIT
BY
FORT STEWART ARMY INSTALLATION, SAVANNAH, GEORGIA

PART I - INTRODUCTION

A. NAME AND ADDRESS OF APPLICANT:

U.S. Army, Fort Stewart Army Installation
Directorate of Public Works
1550 Frank Cochran Drive, Bldg. 1137
Fort Stewart, Georgia 31414

B. APPLICATION NUMBER: 200900885

C. LOCATION OF PROPOSED ACTIVITY: The site is located at Fort Stewart, in Liberty County, Georgia. The site is located in the Red Cloud Foxtrot (RC-F), B-9 and B-10 Training Areas (in the vicinity of latitude 31° 59' 57" north and longitude 81° 37' 56" west). A location map is provided in Appendix A to this document.

D. PROJECT DESCRIPTION: The Digital Multipurpose Training Range (DMPTR) is a large caliber range (utilizing ammunition cartridges with a bullet diameter, or caliber, of greater than 0.75 inches) is used to meet critical training needs for both active and reserve component units that train on Fort Stewart. The DMPTR is necessary to support the crew qualification tasks of M1A1 tank crews, M2 and M3 Bradley vehicle crews, and Stryker vehicle crews. This range is used to train and evaluate vehicle crews on the skills necessary to detect, identify, and engage an enemy doctrinal tactical array of stationary and moving infantry and armor targets. The range can also be used to train weapons crews operating in the same tasks. In addition to live-fire, this range can also be used for training with sub-caliber and/or laser training devices.

The range would consist of a standard one lane DMPTR with four roads with midpoint cross over capability and five battle positions per road. The DMPTR contains 105 stationary infantry targets (SITs), 35 stationary armor targets (SATs), six moving armory targets (MATs), six moving infantry targets (MITs), four urban target facades, five firing positions per road, one Range Operations Control Area facility, one After Action Review (AAR) facility, an air-vault

latrine facility, ammo breakdown area, ops storage building, instrumentation loading dock, general instruction building, and surfaced staging area.

The applicant has not completed final site design for the above described range project. The standard site layout for this type of range would require the filling and/or mechanized clearing of all 43.6 acres of bottomland hardwood wetlands on the 981-acre project site. The applicant will likely be able to avoid some of the wetlands on the project site as final site design is completed for the project. However, for the purposes of this permit evaluation, the US Army Corps of Engineers (USACE) will assume that all 43.6 acres of wetlands on the proposed project site would be impacted. In addition, the applicant's proposed wetland mitigation plan is to purchase 337 mitigation credits to offset unavoidable impact to 43.6 acres of wetlands.

E. BASIC PURPOSE AND NEED: The basic purpose of the proposed project is to provide the Soldiers of Fort Stewart, Reserve and National Guard units with new facilities that are critical in the training of both active and reserve component units that train on the Installation, while maintaining maneuver terrain and minimizing wetland impacts. The DMPTR is necessary to support the crew qualification tasks of M1A1 tank crews, M2 and M3 Bradley vehicle crews, and Stryker vehicle crews, while utilizing existing SDZ within the boundaries of Fort Stewart.

F. APPLICANT'S SUPPLEMENTAL INFORMATION: The following information is part of the administrative record for the project.

1. Project Narrative
2. Project Purpose and Need
3. Description of Resources Occurring within the Project Area, Potential Impacts, and Mitigation
4. Vicinity Map
5. Additional Studies and Response to Comments:

G. PROPOSED WORK SUBJECT TO THE JURISDICTION OF THE US ARMY CORPS OF ENGINEERS: The applicant proposes to perform work in, or affecting waters of the United States.

H. APPLICABLE STATUTORY AUTHORITY: The applicant is making application pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344).

PART II - COORDINATION

A. JOINT PUBLIC NOTICE (JPN): On April 21, 2010, the United States Army Corps of Engineers Savannah District (USACE) issued a JPN on the proposed work. Copies of the notice were provided to federal, state, and local agencies and the public. The notice was also posted on USACE public web page.

B. RESPONSE TO JOINT PUBLIC NOTICE: A summary of the comments received in response to the Joint Public Notice is presented in Table 1 below.

Table 1. Summary of Comments

COMMENTOR	OBJECT	3(b) Y/N	NO OBJECT	NO OBJECT W/CONDITION	DATE
Federal Agencies					
1. National Marine Fisheries Services			X		05-24-10
2. US Environmental Protection Agency (EIS comments)				X	04-21-10
3. US Fish and Wildlife Service					*
State of Georgia					
4. State Clearing House					*
5. Coastal Resources Division, Federal Consistency					*
6. Environmental Protection Division					*
Other					
7. Southern Environmental Law Center - Ogeechee River Keeper				X	05-21-10

* No date indicates no comment received.

C. DISCUSSION OF RESPONSES:

1. National Marine Fisheries Service (NMFS): By letter dated May 24, 2010, the NMFS stated “Based on the information in the public notice, the proposed project would not occur in the vicinity of essential fish habitat designated by the South Atlantic Fishery Management Council or NMFS. Present staffing levels preclude further analysis of the proposed activities and no further action is planned. This position is neither supportive of nor in opposition to your authorization of the proposed work.”
2. Georgia State Clearinghouse: By memorandum dated June 8, 2010, the Georgia State Clearinghouse stated that the request has been found to be consistent with state goals, policies, plans, objectives, and programs, with which the state is concerned.
3. Environmental Protection Agency (EPA): There were no comments received pursuant to the USACE Joint Public Notice dated April 21, 2010, from the EPA. However, Fort Stewart did receive comments and questions from the EPA Region 4, pursuant to the Draft Environmental Impact Statement (EIS) for Training Range and Garrison Support Facilities Construction and Operation at Fort Stewart, Georgia. The following are EPA comments relevant to the Section 404 permit notifications:

a. Issue 1: EPA is currently reviewing a joint public notice dated April 21, 2010, for four individual permits for four projects (DMPTR, IPBC, MPMGR and QTR) with a total of 185.9 acres of wetland impacts. This is a substantial level of wetland impacts, particularly in relation to recently permitted impacts throughout Georgia.

(1) Applicants Response: Fort Stewart avoids and minimizes wetlands impacts when possible. The implementation of the actions proposed in the preferred alternative (Alternative B Sitings) has the potential to negatively impact up to 0.2% of the Installation’s nearly 91,000 acres of wetlands. More importantly, of the “up to 0.2% of the Installation’s wetlands being impacted,” most of those impacts are not the result of adding fill to the wetlands, but rather vegetative maintenance for line-of-sight and grubbing/grading for target placement. As stated earlier in this reply, the Installation anticipates wetland impacts will be much less than projected through further avoidance and minimization incorporated during the design phases of each project after the site is selected. It is important to note, that despite the large amount of military training activity that occurs on Fort Stewart, because of the Installation’s proactive efforts to avoid,

enhance, and mitigate wetlands, its wetlands remain of a high quality, retaining and transmitting large amounts of fresh water and providing habitat for countless local species. Proactive environmental stewardship programs also help to keep our wetlands pristine. As discussed in opening paragraphs in Chapter 3 of the FEIS, Fort Stewart's Integrated Training Area Management (ITAM) program conducts land rehabilitation through the construction of low water crossings and Soldier training related to sustainability of Fort Stewart lands.

Much of the avoidance and minimization takes place before actual site selection. Training ranges of this kind have fairly specific requirements and it is not always possible to build them without impacting every wetland in the footprint. Site designers may alter certain aspects of a proposed range in response to environmental concerns during various stages of the design process, typically reviewed at the 10%, 35%, 60%, 90%, and 100% stages of completion, if they can do so while still meeting the operational and training requirements of the range. For example, the currently on-going design process reduced the wetland impacts from the IPBC to a third of what they were at the time of writing the DEIS. Impacts from the MPMGR have also been slightly reduced. Several proposed range projects were sited without wetland impacts of any kind. It is hoped that impacts from the QTR and DMPTR may be reduced, but as they are not yet in the design process this cannot be precisely determined.

It is also important to note that not all of the 185.9 acres (now 179.03 acres) of wetlands will actually be cleared, grubbed, and/or filled. Rather, that is a maximum projected "up to" amount. The actual number of acres impacted will likely be reduced further at each design level for target placement, etc.). Therefore, although the "permitted impacts" of this project may seem large in relation to other recently permitted impacts in Georgia, they do not represent substantial impacts to Fort Stewart wetlands resources. This text has been added to Section 4.3.2.2 of the FEIS.

(2) USACE Position: The combined wetland impact associated with the four proposed range projects has been reduced from 185.9 acres to 179.03 acres. In addition, as these projects approach final design, combined wetland impacts are expected to be reduced further. With regard to the amount of proposed wetland impact for these four projects relative to projects recently permitted by the Savannah District, there have been residential, commercial and reservoir projects authorized within the past five years with impacts in excess of 100 acres.

Based on the extensive experience of the USACE in review of permit applications for project located in the lower coastal plain of Georgia, most sites are typically comprised by approximately thirty percent wetlands. Fort Stewart is typical of site in the lower coastal plain and is also approximately thirty percent wetlands. Fort Stewart is the only military base with large range construction in Coastal Georgia. Proposed wetland impacts associated with the size of this proposed range are comparable to the wetland impacts associated with past range development on Fort Stewart.

a. Issue 2: EPA is particularly concerned that all impacts have been characterized as wetland impacts when two of the four projects show the potential for streams impacts on the 7.5-minute USGS topo quad maps. EPA notes that while the Fort has had a significant cumulative impact to streams from past projects, these impacts have not been mitigated.

(1) Applicants Response: The footprints of the MPMGR and IPBC on the 7.5-minute USGS topographic quads show “blue line” streams in the areas, however, a site visit by Fort Stewart and the Georgia Environmental Protection Division (GA EPD) on January 20, 2010, found no streams. The Savannah District also did not identify any streams within the range footprints. This information was added to Section 4.3.1, of the FEIS.

Over the years, Fort Stewart has worked diligently to mitigate impacts – direct and indirect, as well as cumulative – to the Installation’s streams, as well as wetlands. During the development of the Installation’s wetland bank, for example, thousands of feet of Canoochee Creek and Strum Bay were restored without being credited to the Installation’s mitigation bank. The Installation takes pride in that fact and welcomes working with ORK and other local environmental stakeholders on future projects.

(2) USACE Position: The USACE has completed an expanded preliminary jurisdictional determination for the project site. This determination verified there are no jurisdictional streams located on the project site.

a. Issue 3: The FEIS should provide more discussion regarding the quality of the wetlands impacted. The DEIS mentions they're freshwater wetlands and that the Army has acquired mitigation credits to restore a historically but degraded hardwood wetland system. It is unclear what type of wetlands ecosystems are being impacted by the ranges

and garrison proposed projects.

(1) Applicants Response: Surveys of the proposed range and garrison sites by Fort Stewart determined these ecosystems were predominantly broadleaf hardwood palustrine wetlands consisting of vegetative communities typical of wetlands in the Coastal Plain: pond pine (*Pinus serotina*), pond cypress (*Taxodium ascendens*), water oak (*Quercus nigra*), water tupelo (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), green ash (*Fraxinus pennsylvanica*), American hornbeam (*Carpinus caroliniana*), Highbush blueberry (*Vaccinium corymbosum*), fetterbush lyonia (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*) among many others including varied herbs and grasses. These plants occur with varying frequency depending on the landform and hydrology of particular areas. Animal communities are also supported by these areas – wading birds such as the Great Egret (*Casmerodius albus*), the Snowy Egret (*Egretta thula*), and the Great Blue Heron (*Ardea herodias*), amphibians such as the Bullfrog (*Rana catesbeiana*) and Wood Frog (*Rana sylvatica*), and mammals such as the Whitetail Deer (*Odocoileus virginiana*) were all observed during the surveys of the range project sites. Soil types are hydric sand-loam mixtures of the Ellabelle, Bibb, Pelham, and Leefield types. Text reflecting this information was incorporated into Section 6.4.1 of the FEIS.

(2) USACE Position: The description of the wetlands proposed to be impacted, which was submitted by the applicant and summarized above, is sufficient for the USACE to base an assessment of the wetland quality. In addition, the USACE has made multiple visits to Fort Stewart and is very familiar with the quality of wetlands located within the proposed project site(s). The USACE used this information and its knowledge of wetland habitats on Fort Stewart in its assessment of proposed wetland impacts and the adequacy of the applicant's proposed mitigation plan.

a. Issue 4: EPA is unable to fully evaluate wetlands impacts, which is an area of CWA-designated responsibility for the Agency, in the DEIS because expanded CWA 404(b)(1) analyses have not been prepared for three ranges: FY 13 Modified Record Fire Range, FY 13 10/25 Meter Zero Range, and FY 14 Convoy Live Fire Range. This is a concern. EPA would like to review and comment on these analyses before they appear in the FEIS. Please coordinate with Bob Lord, Region 4's Wetlands Program to discuss further.

(1) Applicants Response: As we mentioned in Section 4.3.2.2. of the FEIS, the Installation has not prepared §404(b)(1) analyses for the FY13 MRFR, FY13 10/25 Meter Zero Range, and FY14 CLFR because some or all impacts to wetlands will likely be avoided during the design phase of these projects. The wetlands located on these sites are less than 5 acres each. If, however, wetlands cannot be avoided, the Installation will prepare §404(b)(1) analyses for these projects and request a §404(b) permit at that time.

(2) USACE Position: Wetland impacts pursuant to the construction of the FY 13 Modified Record Fire Range, FY 13 10/25 Meter Zero Range, and FY 14 Convoy Live Fire Range have not been determined by Fort Stewart. When these proposed projects are sited and designs are complete, and if there are any proposed wetland impacts associated with them, Fort Stewart will apply for a Section 404 permit with the USACE. Any proposed wetland impacts will be evaluated at that time and coordinated through the USACE permit process. The USACE is preparing an analysis of the proposed IPBC, MPMGR, DMPTR and QTR pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for the IPBC, MPMGR, DMPTR and QTR projects.

a. Issue 5: The DEIS states that the Fort has a regional permit for low water crossings, issued in 2001 and renewed in 2006 for 5 years, which allows for a maximum of 15 acres of cumulative wetlands impacts from low-water crossings. Approximately 5 acres of wetlands have been impacted using this permit. The FEIS should discuss the application of the Fort's regional permit for low water crossings, which allows for a maximum of 15 acres of cumulative wetlands impacts from low-water crossings, how the cumulative wetlands impacts are defined, and the water quality impacts and other aquatic resources impacts associated with this permit.

(1) Applicants Response: Low water crossings are not a part of the proposed action and there are no new low water crossings anticipated in the foreseeable future. As discussed in Section 3.4.4.2, only routine maintenance and repair of existing low water crossings in the range and training areas will be conducted.

(2) USACE Position: As part of this document, the USACE has prepared a cumulative impact assessment of all known past, presently proposed, and reasonably

foreseeable future impacts to aquatic resources. This assessment takes into consideration impacts associated with low water crossings.

a. Issue 6: EPA is concerned that the credit calculations using the Savannah District Standard Operating Procedure (SOP) do not fully compensate for the impacts. The Savannah District has frequently indicated to EPA that the SOP is not applicable to large impacts, such as those over 10 acres. EPA agrees and has proposed a scaling factor to address the cumulative impacts of large projects such as the factor used in the Charleston District SOP. This is the approach used by the Georgia Department of Transportation for its projects that exceed the 10 acre threshold. For very large projects this scaling factor could be capped at an appropriate level. EPA has suggested 3.0 acres, which is equal to the next largest factor used in the SOP. Application of the SOP without a scaling factor for large impacts, particularly the 108.1 acres for the MPMGR is not appropriate, even according to past finding from the Savannah District.

(1) Applicants Response: While a scaling factor may be appropriate to use in many large scale projects where a great deal of fill is being introduced into the wetland system and where the projects require large amounts of impermeable surfaces, neither of these considerations constitute significant components of any of the projects under consideration in the FEIS. Of this filled acreage only a small amount will include the introduction of impermeable surfaces. The only impermeable surfaces will consist of the range operations area and cover only 2% of each project footprint. As noted in Answer #1 above, while maximum projected “up to” amounts have been provided, most of those impacts are not the result of adding fill to the wetlands, but rather vegetative maintenance for line-of-sight and grubbing/grading for target placement. This information is located in Section 4.3.2.2.

As a result, it is the Installation’s position that use of any scaling factor is not necessary to compensate for the cumulative impacts associated with these types of projects and applying a scaling factor, as called for in the Charleston District’s SOP, to these types of projects would appear to be arbitrary and capricious as it would not appear to be based on any sound engineering or hydrologic rational but would appear to be more punitive than compensatory in nature.

Moreover, the Installation always takes into account secondary wetland impacts. In reference to the MPMGR, which is the project that contains the majority of the 179.03

acres of wetlands to be potentially impacted, the Installation has evaluated potential secondary cumulative impacts. In our planning process, as noted above, the Installation took a “worst case scenario” approach when determining how to compensate for the quantity of wetlands loss. The Installation is planning to off-set secondary cumulative wetland effects from this range and has obtained an additional 287 mitigation credits from the Wilkinson-Oconee Bank. The Installation did account for the lost functions and values impacted by the project with respect to direct and indirect impacts.

As noted in Sections 3.4.5 and 4.3.2, the Savannah District is a cooperating agency to this EIS, and was consulted with regard to the factors noted above. Additionally, Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Having reviewed these documents and the associated 404(b)(1), the Savannah District did not suggest a need to utilize a scaling factor.

(2) USACE Position: The present total proposed wetland impact for the four proposed ranges is 179.03 acres. As discussed by the applicant above, not all of these proposed impacts are for fill, but a certain percentage would involve mechanized land clearing impacts. Clearing wetlands of vegetation and maintaining them in scrub/shrub vegetation results in a change in function, but not a total loss in function. The mitigation credits proposed by Fort Stewart are assuming a total loss in function. The proposed mitigation plan is to purchase 1,391 credits to compensate for a total of 179 acres of wetland impact for all four ranges. This is a credit to impact ratio of 7.8:1. On average, three credits are generated for each acre of wetland restoration at the Wilkinson/Oconee Mitigation Bank, where credits will be purchased for the FY11 ranges. Therefore, the effective mitigation ratio for the FY11 Multipurpose Machine Gun Range and FY11 Infantry Platoon Battle Course projects would be approximately 2.6:1 of wetland restoration. The Applicant has not ruled out other acceptable compensatory mitigation alternatives to mitigate wetlands impact (provided through mitigation banks or in-lieu fee programs) for the FY13 Digital Multipurpose Training Range and the FY13 Qualification Training Range. Therefore, it is the position of the USACE that the mitigation proposed for this DPMTR project would meet the requirements of the new mitigation rule.

a. Issue 7: The DEIS indicates that approximately one-third of the Fort's lands are wetlands. It also states some of the remaining 160 credits contained in the Fort's on-site mitigation bank will be used for the Garrison construction projects. Additionally, the Army has previously purchased credits from an established off-Fort wetland mitigation bank in accordance with the Compensatory Mitigation Rule (33 CFR Part 332) to cover the proposed range projects. The Fort canvassed the available mitigation banks nearly one year ago, which may not reflect the current banks and credit availability. Given the opportunity, EPA would have discouraged the use of the Wilkinson - Oconee Mitigation Bank since it is out of the watershed, out of the ecoregion, and likely does not fully compensate for the functions lost at the project sites. EPA is also concerned, despite the rationale provided in the DEIS, that the Fort is not fully debiting its own mitigation bank before going to off-site alternatives. The Fort's mitigation bank is within the same watershed and ecoregion and thus more likely to replace the lost wetland functions. There appears to be ample time to expand this bank to accommodate the future needs presented as a reason for not fully using it for these projects. Typically, EPA discourages applicants from purchasing mitigation credits until the Section 404 permit has been issued, because this precludes other, possibly preferable, mitigation actions.

(1) Applicants Response: Although the Fort Stewart mitigation bank has sufficient credits to offset impacts from the two Garrison support construction projects, the Army has determined it is not sufficient to cover the unavoidable negative impacts to wetlands from the FY11-14 training range construction projects, for which the Installation must purchase credits from an off-site wetlands mitigation bank. The remaining acres within the Installation wetland bank allows Commanders to respond to emergency range training requirements, which surface from “In Theater” conditions and scenarios, or award Congressional Garrison or training additions that must be executed by Fort Stewart within one year or less. If Commanders did not have this flexibility, Installation projects with unavoidable wetland impacts would be cancelled or held up in significant delays awaiting Congressional funding to purchase “off-Post” wetland credits.

As discussed in Chapter 6 of the DEIS, despite the physical distance between the Wilkinson - Oconee Bank (WOB) restoration area and Fort Stewart, looking at the choice from a more holistic watershed perspective shows that the two locations are rooted in an interconnected complex of wetlands and open water bodies. The WOB wetlands were determined to be an ecologically acceptable replacement for the small portion of Fort Stewart wetlands impacts due to the proposed action. Hydrologic and habitat wetland

functions will remain unimpaired.

At the time the credits were purchased, there were no other readily available mitigation banks open in the primary service area with the quantity and quality of credits needed to cover the Installation's projected needs. The Federal appropriations process did not provide the Installation with the flexibility to wait until Section 404 permits were issued to initiate the required solicitation process to purchase the credits without putting the funding for the specific FY 2011 range projects in jeopardy. As part of the Installation's standard procurement processes, market research is conducted in accordance with the Federal Acquisition Regulation. This research requirement as it relates to contracting of off-post wetland credit purchases includes evaluating the current market and availability of primary service area mitigation credits. This process will also be implemented when seeking mitigation options for ranges beyond FY11.

For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs). For instance, the Installation is actively seeking opportunities to incorporate off-site compensatory mitigation projects into its private lands conservation initiatives in partnership with the Georgia Land Trust and will continue to do so to further provide compensatory mitigation within the primary service area and watershed. Under the Savannah District's SOP, the Wilkinson-Oconee Bank (WOB) is grandfathered as a pre-existing bank created prior to the Compensatory Mitigation Final Rule (please refer to Answer 9 below). As such, the WOB is an acceptable mitigation alternative that is in full compliance with the policy and purpose of mitigation required by the CWA, the Savannah District SOP, and the Compensatory Mitigation Final Rule. The information contained in this answer has been added to Section 6.4.1.1 of the FEIS.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. At the time of the pre-application meeting, the USACE agreed to allow the applicant to purchase credits from the secondary mitigation zone of the Wilkinson-Oconee Bank, which was the only bank with available credits. The agreement was made with the applicant in order to allow them time to procure funds necessary to provide mitigation when needed. The on-base Pond Four Mitigation Bank will be used to mitigate smaller on-post projects in the future that would likely be on a short time-line for planning, permitting and construction. The Army procurement process takes too long to allow for the purchase of mitigation credits for

these small, short, time-line projects. Therefore, the USACE agrees with the applicant to save Pond Four credits for these future small projects.

a. Issue 8: EPA disagrees with the statement that applying for a CWA Section 404 permit is a minimization of wetlands impacts. The DEIS states "While the Army strives to avoid negative impacts to wetlands when it sites new range and training facilities on Fort Stewart, if impacts to regulated wetlands cannot be avoided, the Army minimizes those impacts by applying for a Section 404 permit as required by the Clean Water Act. CWA 404 requires a permit for any dredge and fill impacts to jurisdictional waters, including wetlands. The CWA is a regulatory requirement, not a mitigation option. The FEIS should clarify this misrepresentation of CWA Section 404 permit program as a form of mitigation.

(1) Applicants Response: The information in the text and tables, located in Section 6.4.3 of the FEIS, has been edited to identify more accurately and clearly the differences between what is a required measure, such as a regulatory permit, and what is a mitigation option.

(2) USACE Position: The applicant made the suggested correction.

a. Issue 9: The DEIS discusses wetlands compensatory mitigation in context of NEPA-required mitigation when it should also discuss how the proposed mitigation meets the requirements of the Compensatory Mitigation for Losses of Aquatic Resources Final Rule. NEPA requires that to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with environmental impact analyses and related surveys and studies required by the Fish and Wildlife Coordination Act, the National Historic Preservation Act of 1966, the Endangered Species Act of 1973, and other environmental review laws and executive orders. The Compensatory Mitigation for Losses of Aquatic Resources Final Rule is considered to be a relevant "other environmental review law" as it is one of the CWA Section 404 implementing regulations. The FEIS should discuss and apply the Final Rule in its wetlands mitigation discussion.

(1) Applicants Response: The Installation utilized the Compensatory Mitigation Rule (33 CFR Part 332) when developing its mitigation plan for the proposed FY11 MPMGR, FY11 IPBC, FY13 QTR, and the FY13 DMPTR. Fort Stewart participated in

pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Section 6.4.1.1 of the FEIS has been revised to clearly explain that a mitigation decision has not yet been made for the FY13 QTR and the FY13 DMPTR. For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs). Similar to the process outlined in the Compensatory Mitigation Rule, the Installation's standard procurement processes conducts market research in accordance with the Federal Acquisition Regulation. This research requirement as it relates to contracting of off-post wetland credit purchases includes evaluating the current market and availability of primary and secondary service area mitigation credits. This process will also be implemented when seeking mitigation options for ranges beyond FY11.

According to 33 CFR 332, *Compensatory Mitigation for Losses of Aquatic Resources*, mitigation bank credits may be used if the project is in the service area of a mitigation bank. Section 332.3 (b)(2) has a description of why mitigation bank credits are acceptable in compensating for wetland impacts:

“Since an approved instrument (including an approved mitigation plan and appropriate real estate and financial assurances) for a mitigation bank is required to be in place before its credits can begin to be used to compensate for authorized impacts, use of a mitigation bank can help reduce risk and uncertainty, as well as temporal loss of resource functions and services. Mitigation bank credits are not released for debiting until specific milestones associated with the mitigation bank site's protection and development are achieved, thus use of mitigation bank credits can also help reduce risk that mitigation will not be fully successful. Mitigation banks typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation. Also, development of a mitigation bank requires site identification in advance, project-specific planning, and significant investment of financial resources that is often not practicable for many in-lieu fee programs. For these reasons, the district engineer should give preference to the use of mitigation bank credits when these considerations are applicable.” Fort Stewart followed these requirements during the development of its mitigation plan.

(2) USACE Position: See USACE Position on USEPA issue 7 above.

a. Issue 10: While EPA does not expect the precise replication of all wetlands

adversely impacted by the proposed action, the FEIS should explain how the proposed mitigation will adequately compensate for lost wetland functions and values such that it results in no net loss of wetland functions and values. This discussion is absent from the DEIS. Furthermore, since the U.S. Army Corp of Engineers (USACOE) cannot issue a CWA 404 permit if there is a less damaging practicable alternative, the FEIS should discuss compliance with this provision.

(1) Applicants Response: The wetlands in the Wilkinson-Oconee Bank (WOB) are “in-kind” to the wetlands on Fort Stewart. Consistent with the fact that both areas are on Georgia’s Coastal Plain, wetlands within the WOB are very similar to those slated for impact by the proposed Fort Stewart range projects. Surveys of the proposed range sites by Fort Stewart determined that dominant vegetation communities consist of plants typical of wetlands in the Coastal Plain: mixtures of pond and bald cypress (*Taxodium ascendens* and *distichum*, respectively), water oak (*Quercus nigra*), water tupelo (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), green ash (*Fraxinus pennsylvanica*), privet (*Ligustrum sinense*), American hornbeam/ironwood (*Carpinus caroliniana*), highbush blueberry (*Vaccinium corymbosum*), fetterbush lyonia (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*) among many others including varied herbs and grasses. These plants occur with varying frequency depending on the landform and hydrology of particular areas, and essentially identical communities with similar distribution are found in the Wilkinson-Oconee’s Mitigation Bank. Animal communities also supported by these areas are: wading birds, such as the Great Egret (*Casmerodius albus*), the Snowy Egret (*Egretta thula*), and the Great Blue Heron (*Ardea Herodias*); amphibians, such as the Bullfrog (*Rana catesbeiana*) and Wood Frog (*Rana sylvatica*); and mammals, such as the Whitetail Deer (*Odocoileus virginiana*) were all observed during the surveys of the range project sites, and have been similarly reported in the Wilkinson-Oconee area. The American alligator (*Alligator mississippiensis*) is common throughout Fort Stewart and has also been observed at Wilkinson-Oconee. The locally endangered Wood Stork *Mycteria Americana* can also be found at both locations (though they are not expected to be impacted by the proposed projects).

Soil types were also consistent between the two areas. The Ellabelle, Bibb, Pelham, and Leefield types predominated in the proposed project areas. Analyses of the Natural Resources Conservation Service profiles show these to be comparable to the Chewacla, Chastain and Congaree soils which cover the Wilkinson-Oconee area. All are

characterized by loamy surface layers and clayey or loamy subsoils, and all soils are on the National Hydric Soils list.

Although the area of the Coastal Plain in which the Wilkinson-Oconee area is situated features more relief than that of Fort Stewart, the specific area of the restoration situated as it is in the Oconee River floodplain, is flatter than the surrounding general topography, resulting in a similar hydrologic profile to Fort Stewart. The bottomland hardwood wetland systems found at both locations share the typical functions of holding temporary storage surface water, maintenance of characteristic subsurface hydrology, removal and sequestration of elements, retention of particulates, export of organic carbon, maintenance of characteristic plant community, and habitat for wildlife. Based on this comparison, despite the distance between the two areas, wetlands on Fort Stewart and at the Wilkinson-Oconee restoration area are very similar and, therefore, their use for mitigation fully supports the requirement for “no net loss”. Text reflecting this information was incorporated into Section 6.4.1.1 of the FEIS.

(2) USACE Position: As discussed above, the mitigation proposed by the applicant would comply with the new mitigation rule. The USACE is preparing an analysis of the proposed project pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for this proposed project. This analysis would also confirm that the final proposed site development plan for this range, as well as the other three ranges being reviewed, was the least environmentally damaging practicable alternative that would meet the basic project purpose.

a. Issue 11: The DEIS states that the USACOE documents approximately 1,467,774 acres of wetlands impacted within 20 Georgia counties and by deducting 1,982.87 acres of wetlands impacts since 1990 there are at least 1,465,791.13 acres of wetlands remaining. According to the DEIS, this amounts to a loss of 0.14% of wetlands since 1990 - an insignificant amount." It is unclear if the USACOE document referenced in the DEIS is referring to the 1,467,774 acres of wetlands as being impacted in the 20 Georgia counties or existing (un-impacted) wetlands in these counties. This paragraph needs to be clarified in the FEIS.

(1) Applicants Response: There are 1,467,774 existing acres of existing wetlands

within the 20 Georgia counties referenced, of which 1,465,791.13 acres of wetlands are un-impacted. This is how the Installation calculated a loss of 0.14% of wetlands since 1990 and the determination of “insignificant” derived. Text clarifying this information was incorporated into Section 5.3.3.2 of the FEIS.

(2) USACE Position: Fort Stewart corrected the FEIS, and clarified the information that EPA questioned.

3. US Fish and Wildlife Service (USFWS): No comments received. The US Army, Fort Stewart is the lead federal agency for this proposed action and has completed consultation with the USFWS. The Final Biological Opinion can be found in Appendix B of the FEIS..
4. Georgia State Clearinghouse: By memorandum dated June 8, 2010, the Georgia State Clearinghouse stated that the request has been found to be consistent with state goals, policies, plans, objectives, and programs, with which the state is concerned.
5. Georgia Department of Natural Resources, Coastal Resource Division (Georgia CRD): No comments were received from Georgia CRD. However, this office must certify that the project is consistent with the Georgia Coastal Management Program prior to the USACE completing its review of the subject application.
6. Georgia Department of Natural Resources, Environmental Protection Division (Georgia EPD): No comments were received from Georgia EPD. Fort Stewart is in consultation with the Georgia Environmental Protection Division regarding a water quality certification pursuant to Section 401 of the Clean Water Act. The USACE would include a copy of the 401 water quality certification with any permit issued. In addition, the special condition of any permit issued would require the permittee to adhere to the conditions of the 401 water quality certification.
7. Southern Environmental Law Center (SELC): By letter dated May 21, 2010, the SELC provided the following comments on behalf of the Ogeechee Riverkeeper, Inc. (ORK):
 - a. Issue 1: The applicant’s alternatives analysis in the DEIS includes alternative COA 3 which is a “heavily utilized” existing multipurpose range complex (MPRC) (*Fort Stewart note: the range proposed for construction is actually a Digital Multi-Purpose Training Range, or DMPTR*). DEIS, Appendix D at 10. This, of course, begs the question as to why the Applicant is including as an alternative a site that could never be

used even if it determined that the site would have fewer environmental impacts. Alternative COA 3 is not a practicable alternative at all.

(1) Applicants Response: Transforming the existing MPRC was an option legitimately considered as a practical alternative but rejected due to current and expected military operations and training demands. Transforming the existing MPRC and other operational ranges will remain a consideration on future range projects as the types of military training and weapon systems evolve over time and possibly render older ranges obsolete. An example of this is the COA 1 for the DMPTR, which involves the transformation of another existing range, Red Cloud Foxtrot. In siting the DPMTR over top of an existing range, we are attempting to minimize and avoid the wetland impacts that would be associated with constructing the DPMTR elsewhere on Fort Stewart.

(2) USACE Position: Given the amount of development on the base as a whole, the re-use of an existing range should be considered as a potential alternative. The elimination of alternatives as not being practicable is a standard part of the Section 404(b)(1) Guidelines.

b. Issue 2: The other alternative which the Applicant examined yielded wetlands impacts of 240 acres. It is difficult to accept that there were no other practicable alternatives at Fort Stewart for this proposed range. Two-hundred forty acres is more than the combined wetlands impacts of all four of the proposed ranges.

(1) Applicants Response: Based on the Installation's location in a relatively flat coastal plain and the location of pre-existing military training ranges and facilities on high ground, impacts to 240 acres of wetlands to build a new 995 acre range is not beyond the realm of reasonable consideration as a viable alternative. The fact that wetland impacts in the preferred alternative are less than five percent of the overall range size demonstrates the Installation's efforts to avoid and minimize wetland impacts associated with the siting of new military ranges and training facilities. Army Installations, including Fort Stewart, must maintain their training lands to fully sustain mission requirements for national security. The way the Army does this is through its master planning process. It is important to note that the Installation's planning efforts to minimize wetland impacts begins with attempts to select a site with the least amount of wetlands. At this point in the planning process, the range design is limited to placement on site of a footprint of the proposed range. This footprint shows the maximum number

of wetland impacts and that is why we state “up to” so many acres; however, once a final site is selected, further attempts are made to avoid and minimize negative impacts to wetlands inside the range footprint through the range design process.

The final range design cannot be prepared prior to a site being selected. Also, despite Fort Stewart’s large size, much of its lands are already committed to other training, recreational, and environmental activities. Maneuver and dismounted maneuver training areas occupy large portions of the Installation, where the integration of large firing ranges is not suitable. The west side of the Installation is devoted to maneuver training and, in its entirety, is necessary to meet Brigade mission training requirements. Maneuver training is necessary in upland areas to reduce wetland impacts resulting from heavy wheeled and tracked military vehicles, as well as to avoid vehicles from getting stuck in wet areas. The southeast side of the Installation is devoted to dismounted maneuver training (i.e. training on foot) and also contains a wooded recreational area for campers. More than 100,000 acres are devoted to the restoration and management of environmentally sensitive areas, such as habitat for threatened and endangered species (including the red-cockaded woodpecker (RCW) and gopher tortoise) and wetlands.

During the planning process for the FY13 DMPTR, which Fort Stewart initiated in 2006, the Installation developed a total of eight siting alternatives. This process allowed both operational and environmental aspects, including impacts to wetlands, to be thoroughly analyzed in a collective manner by members of the Installation’s Environmental Division, Range Control Division, and Master Planning Division. As the analysis progressed, these siting alternatives were ranked using screening criteria, as discussed in Chapter 2, *Description of the Proposed Action and Alternatives*, of the FEIS. Minimization of environmental impacts, including wetlands, was a factor in which alternatives were considered viable and which were not. One DMPTR discounted alternative, not discussed in the FEIS, contained 673 acres of wetlands impact. Another site, also not considered any further, contained 313 acres of wetland impact and would have resulted in the elimination of 683 acres of RCW habitat (compared to an RCW habitat loss of 22.4 acres and 31 acres as a result of Alternatives B and C, respectively). Even though these eliminated sites were operationally viable, they were removed from consideration after environmental impacts were determined to be significant.

(2) USACE Position: There are variety of safety, noise, and other constraints that limit where a live fire range could be located on Fort Stewart. The Army is the “expert”

for siting ranges and conducted an intensive alternatives analysis for locating this, and the other three range projects; to avoid wetland impacts, while meeting other site constraints. The Section 404(b)(1) analysis to be prepared for this action will fully address this issue.

c. Issue 3: Multi Purpose Machine Gun Range (MPMGR). As an alternative for this range, the Applicant proposed course of action (COA) 5 which would have yielded wetlands impacts of less than 9 acres had it been chosen as the preferred alternative. However, the Applicant eliminated this alternative because it emerged as the preferred alternative for DMPTR. As such, COA 5 should not be discussed as a viable alternative for the MPMGR.

(1) Applicants Response: As a large military training and deployment complex, Fort Stewart must examine and analyze the cumulative effects of all its proposed ranges within its training platform as constrained by the Installation borders, adjacent and associated training facilities, and surface danger zones relative to one another. This analysis is in addition to examining other resources, such as wetlands, to optimize training while minimizing the overall impact to our environment. The decisions made on the siting of each range and what are practical alternatives are inherently intertwined and interdependent. This may not have been reflected well in Section 404 permit applications, but is more fully explained in Section 6.4.1.1 of the FEIS. The possibility remains that the MPMGR could be selected to occupy that site currently under consideration for the DMPTR if the DMPTR is ultimately selected to occupy another site.

Also, many other impacts, in addition to wetland impacts, are examined and analyzed in the siting of new ranges and training facilities, including other environmental factors (such as threatened and endangered species) and non-environmental factors (such as the impact the site has on the ability to conduct timely and realistic military training based on current threats to our nation's armed forces when engaged in combat or peace keeping operations overseas). Both the MPMGR and DMPTR were approved for funding, and as has been noted, COA 2 for the DMPTR would have carried a level of wetland impact even greater than the current impacts from both the MPMGR and the DMPTR. Given the many constraints (see Appendix D for siting criteria) at play in siting both ranges, the preferred COAs for the two ranges were seen as a necessary compromise for ensuring all needed ranges are built and military training requirements met.

(2) USACE Position: See discussion for SELC issue 2 above.

d. Issue 4: Notwithstanding the above, the Applicant needs to more adequately explain why it did not select COA 5 as the preferred alternative for MPMGR considering it would have reduced the wetlands impacts from 116.7 acres down to 9 acres.

(1) Applicants Response: Unfortunately, it would not be possible to ignore the fact that the site was already selected as the preferred site for the DMPTR, as suggested. Two independently proposed ranges cannot have the same preferred site. The Installation agrees that nine acres of impact for a 250-acre range is far more desirable than 116.7 acres of wetland impacts (which we now have down to 103.3 acres); however, wetlands impacts for this specific range were only one factor examined and analyzed in selecting this site as the preferred alternative. Selection of this site as the preferred alternative helps the Installation's ability to avoid and minimize the overall and cumulative impacts to all wetlands associated with planned or reasonably anticipated range construction, as reflected in Sections 4.3.2, 5.3.3.2, and 6.4.1 of the FEIS.

(2) USACE Position: See discussion for SELC issue 2 above.

e. Issue 5: Qualification Training Range (QTR). For this proposed range, the Applicant discusses but then rules out COA 3, which would have less wetlands impacts than the Preferred Alternative B. The Applicant rules out this alternative site because it is the proposed location for a future Modified Record Fire (MRF) range, which is not before the Corps at this time. Again, given the significant size of Fort Stewart, alternatives for one range should not be eliminated for future potential ranges, or, such a site should never be discussed as an alternative. The Applicant is required under the Section 404(b)(1) guidelines to identify "practicable alternatives," not alternatives that could never be chosen regardless of how favorable they might be from an environmental standpoint.

(1) Applicants Response: Again, as a large military training and deployment complex, Fort Stewart must examine and analyze the cumulative effects of all its proposed ranges within its training platform as constrained by the Installation borders, adjacent and associated training facilities, and surface danger zones relative to one another. This analysis is in addition to examining other resources, such as wetlands, to optimize training while minimizing the overall impact to our environment. The decisions made on the siting of each range and what are practical alternatives are inherently

intertwined and interdependent. This may not have been reflected well in Section 404 permit applications; but is more fully explained in the FEIS. . One reason the COA 3 was deemed unsuitable was the fact the site is currently an operational range that is projected for reuse or transformation as a future MRF range. While Fort Stewart has a large land mass, much of its land mass is not environmentally or operationally suitable for range construction or for a number of considerations. Although significant, wetland impacts are only one of several significant factors considered when examining the suitability for siting of a range. The remaining lands that are suitable for future range construction are limited because the best locations are currently being used to capacity as military ranges or training areas. The Installation contains many sensitive resources, such as wetlands and protected species habitat, which limit the locations suitable for constructing new military training ranges that are capable of maximizing military training while minimizing environmental impacts. Because of the operational impacts examined and analyzed when siting ranges, and because the Installation was able to minimize impacts and mitigate those that did occur, the decision was made to retain the COA 3 site for a future project. The alternative was practicable but was not chosen in this instance.

(2) USACE Position: See discussion for SELC issue 2 above.

f. Issue 6: Inadequate Mitigation. Ogeechee Riverkeeper (ORK) is concerned with several flaws in the Application's proposed mitigation measures. Considering the Project's significant destruction and alteration of wetlands, it is imperative that the value and functions of wetlands on Fort Stewart are mitigated. ORK shares the concerns expressed by the Environmental Protection Agency (EPA) in its comments on the Draft Environmental Impact Statement dated May 14, 2010. First, the Applicant's usage of the Savannah District's Standard Operating Procedure (SOP) for calculation of mitigation credits is inconsistent with the district's position that the SOP should not be applied to projects with large wetlands impacts. Given the Project's substantial wetlands impact of 190 acres, we urge the Corps to apply the SOP, but do so with a scaling factor to address the cumulative impact of the Project, an approach that is followed by the Charleston District. The Applicant's use of the SOP without a scaling factor will not successfully and adequately replace the lost functions and values of wetlands impacted by the Project.

(1) Applicants Response: The implementation of the actions proposed in the preferred alternative (Alternative B Sitings) has the potential to negatively impact up to 0.2% of the Installation's nearly 91,000 acres of wetlands. More importantly, of the up to

0.2% of the Installation's wetlands being impacted, most of those impacts are not the result of adding fill to the wetlands, and as stated earlier, the Installation anticipates wetland impacts will be much less than projected through further avoidance and minimization incorporated during the design phases of each project after the site is selected. It is important to note, that despite the large amount of military training activity that occurs on Fort Stewart, because of the Installation's proactive efforts to avoid, enhance and mitigate wetlands, its wetlands remain of a high quality, retaining and transmitting large amounts of fresh water and providing habitat for countless local species.

While a scaling factor may be appropriate to use in many large scale projects where a great deal of fill is being introduced into the wetland system and where the projects require large amounts of impermeable surfaces, neither of these considerations constitute significant components of any of the projects under consideration in the FEIS. Of this filled acreage only a small amount will include the introduction of impermeable surfaces. The only impermeable surfaces will consist of the range operations area and cover only 2% of each project footprint. As noted above, while maximum projected "up to" amounts have been provided, most of those impacts are not the result of adding fill to the wetlands, but rather vegetative maintenance for line-of-sight and grubbing/grading for target placement. This information is located in Section 4.3.2.2.

As a result, it is the Installation's position that use of any scaling factor is not necessary to compensate for the cumulative impacts associated with these types of projects and applying a scaling factor, as called for in the Charleston District's SOP, to these types of projects would appear to be arbitrary and capricious as it would not appear to be based on any sound engineering or hydrologic rational but would appear to be more punitive than compensatory in nature.

Moreover, the Installation always takes into account secondary wetland impacts. In reference to the MPMGR, which is the project that contains the majority of the 190 acres (now 179.03 acres) of wetlands to be potentially impacted, the Installation has evaluated potential secondary / cumulative impacts. In our planning process, as noted above, the Installation took a "worst case scenario" approach when determining how to compensate for the quantity of wetlands loss. The Installation is planning to off-set secondary / cumulative wetland effects from this range and has obtained an additional 287 mitigation credits from the Wilkinson-Oconee Bank. The Installation did account for the lost

functions and values impacted by the project with respect to direct and indirect impacts.

As noted in Sections 3.4.5 and 4.3.2 of the FEIS, the Savannah District is a cooperating agency to this EIS, and was consulted with regard to the factors noted above. Additionally, Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Having reviewed these documents and the associated 404(b)(1), the Savannah District did not suggest a need to utilize a scaling factor.

(2) **USACE Position:** The USACE does not require the usage of the Savannah District's Standard Operating Procedure (SOP) for calculation of mitigation credits for projects of this size. The USACE does not use any scaling factor in association with the USACE SOP. The present total proposed wetland impact for the four proposed ranges is 179.03 acres. As discussed by the applicant above, not all of these proposed impacts are for fill, but a certain percentage would involve mechanized land clearing impacts. Clearing wetlands of vegetation and maintaining them in scrub/shrub vegetation results in a change in function, but not a total loss in function. The mitigation credits proposed by Fort Stewart are assuming a total loss in function. The proposed mitigation plan is to purchase 1,391 credits to compensate for a total of 179 acres of wetland impact for all four ranges. This is a credit to impact ratio of 7.8:1. On average, three credits are generated for each acre of wetland restoration at the Wilkinson/Oconee Mitigation Bank, where credits will be purchased for the FY11 ranges. Therefore, the effective mitigation ratio for the FY11 Multipurpose Machine Gun Range and FY11 Infantry Platoon Battle Course projects would be approximately 2.6:1 of wetland restoration. The Applicant has not ruled out other acceptable compensatory mitigation alternatives to mitigate wetlands impact (provided through mitigation banks or in-lieu fee programs) for the FY13 Digital Multipurpose Training Range and the FY13 Qualification Training Range. Therefore, it is the position of the USACE that the mitigation proposed for this DPMTR project would meet the requirements of the new mitigation rule.

g. Issue 7: Second, the Applicant's choice of the Wilkinson-Oconee Mitigation Bank conflicts with the policy and purpose of mitigation required by the CWA. Under the Corp's regulation, the Applicant's "compensatory mitigation should be located within

the same watershed as the impact site" 33 C.F.R. § 332.3. The purpose of this rule is to preserve and maintain water resources within a watershed, and ensure that wetlands lost are compensated by wetlands with similar characteristics, values, and functions. The Application, however, proposes mitigation outside of Fort Stewart and in another watershed at the Wilkinson-Oconee Mitigation Bank. This choice not only conflicts with the Corps' policy but also ignores the available 160 credits contained in Fort Stewart's on-site mitigation bank. ORK believes that the Corps should require the Applicant's use of the on-site mitigation.

(1) Applicants Response: Mitigation credits generated from the on-Post compensatory mitigation bank are not being used because there are insufficient credits available to satisfy requirements associated with the projects and the Installation needs to retain the few credits remaining for potential use to compensate for last minute and unanticipated Congressional add-on projects that occur on the Installation on a not-infrequent basis. Regarding use of mitigation banks, the Compensatory Mitigation for Losses of Aquatic Resources Final Rule states, "In many cases, the environmentally preferable compensatory mitigation may be provided through mitigation banks or in-lieu fee programs because they usually involve consolidating compensatory mitigation projects where ecologically appropriate, consolidating resources, providing financial planning and scientific expertise (which often is not practical for permittee-responsible compensatory mitigation projects), reducing temporal losses of functions, and reducing uncertainty over project success." The rule then lists types of compensatory mitigation measures in order of preference. The rule states that "[in] general, the required compensatory mitigation should be located within the same watershed as the impact site." But mitigation bank credits may be used if the project is in the service area of the bank. Section 332.3 (b)(2) has a description of why mitigation bank credits are given in the regulation:

"Since an approved instrument (including an approved mitigation plan and appropriate real estate and financial assurances) for a mitigation bank is required to be in place before its credits can begin to be used to compensate for authorized impacts, use of a mitigation bank can help reduce risk and uncertainty, as well as temporal loss of resource functions and services. Mitigation bank credits are not released for debiting until specific milestones associated with the mitigation bank site's protection and development are achieved, thus use of mitigation bank credits can also help reduce risk that mitigation will not be fully successful. Mitigation banks typically involve larger, more ecologically

valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation. Also, development of a mitigation bank requires site identification in advance, project-specific planning, and significant investment of financial resources that is often not practicable for many in-lieu fee programs. For these reasons, the district engineer should give preference to the use of mitigation bank credits when these considerations are applicable.” Fort Stewart followed these requirements during the development of its mitigation plan.

Under the Savannah District’s SOP, the Wilkinson-Oconee Bank is “grandfathered” as a pre-existing bank created prior to the Compensatory Mitigation Final Rule. As such, the Wilkinson-Oconee Bank is an acceptable mitigation alternative that is in full compliance with the policy and purpose of mitigation required by the CWA, the Savannah District SOP, and the Compensatory Mitigation Final Rule. Fort Stewart’s use of the Wilkinson-Oconee Bank as mitigation for the proposed FY11 range projects was fully coordinated with the Savannah District, which was a cooperating agency on the EIS.

The wetlands in the Wilkinson-Oconee Bank are “in-kind” to the wetlands on Fort Stewart. Consistent with the fact that both areas are on Georgia’s Coastal Plain, wetlands within the Wilkinson-Oconee are essentially identical to those slated for impact by the proposed Fort Stewart range projects. Surveys of the proposed range sites by Fort Stewart determined that dominant vegetation communities consist of plants typical of wetlands in the Coastal Plain: mixtures of pond pine (*Pinus serotina*), pond cypress (*Taxodium ascendens*), water oak (*Quercus nigra*), water tupelo (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), green ash (*Fraxinus pennsylvanica*), American hornbeam (*Carpinus caroliniana*), Highbush blueberry (*Vaccinium corymbosum*), fetterbush lyonia (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*) among many others including varied herbs and grasses. These plants occur with varying frequency depending on the landform and hydrology of particular areas, and essentially identical communities with similar distribution are found in the Wilkinson-Oconee’s Mitigation Bank. Animal communities also supported by these areas are: wading birds, such as the Great Egret (*Casmerodius albus*), the Snowy Egret (*Egretta thula*), and the Great Blue Heron (*Ardea Herodias*); amphibians, such as the Bullfrog (*Rana catesbeiana*) and Wood Frog (*Rana sylvatica*); and mammals, such as the Whitetail Deer (*Odocoileus virginiana*) were all observed during the surveys of the range project sites, and have been similarly reported in the Wilkinson-Oconee area.

Soil types were also consistent between the two areas. Hydric sand-loam mixtures of the Ellabelle, Bibb, Pelham, and Lee field types predominated in the proposed project areas. Analyses of Natural Resources Conservation Service profiles show these to be comparable to the Chastain and Congaree soils which cover the Wilkinson-Oconee area. All soils are on the National Hydric Soils list. Although the area of the Coastal Plain in which the Wilkinson-Oconee area is situated features more relief than that of Fort Stewart, the specific area of the restoration is flatter than the surrounding general topography, resulting in a similar hydrologic profile to Fort Stewart. The bottomland hardwood wetland systems found at both locations share the typical functions of holding temporary storage surface water, maintenance of characteristic subsurface hydrology, removal and sequestration of elements, retention of particulates, export of organic carbon, maintenance of characteristic plant community, and habitat for wildlife. Based on this comparison, despite the distance between the two areas, wetlands on Fort Stewart and at the Wilkinson-Oconee restoration area are very similar and, therefore, their use for mitigation fully supports the requirement for “no net loss”. Text reflecting this information was incorporated into Section 6.4.1.1 of the FEIS.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. At the time of the pre-application meeting, the USACE agreed to allow the applicant to purchase credits from the secondary mitigation zone of the Wilkinson-Oconee Bank, which was the only bank with available credits. The agreement was made with the applicant in order to allow them time to procure funds necessary to provide mitigation when needed. The on-base Pond Four Mitigation Bank will be used to mitigate smaller on-post projects in the future that would likely be on a short time line for planning, permitting and construction. The Army procurement process takes too long to allow for the purchase of mitigation credits for these small, short-time-line projects. Therefore, the USACE agrees with the applicant to save Pond Four credits for these future small projects.

h. Issue 8: Before seeking compensatory mitigation in a different watershed, the Applicant should explore the use of existing and new mitigation banks in Ogeechee River Watershed. According to the DEIS's evaluation of mitigation banks in 2009, the Ogeechee River/Margin Bay and Black Creek Banks may now have available credits. DEIS at 6-8. Also, given the significant amount of wetlands within the boundaries of

Fort Stewart as well as Fort Stewart's experience in the creation of mitigation banks, the Corps should require the Applicant to take a hard look at a potential onsite mitigation bank that would ensure the compensation of the wetlands' lost values and functions.

(1) Applicants Response: Existing and new mitigation banks within this watershed were not available at the time Fort Stewart was required to begin planning for the required wetlands credit acquisition for its FY 2011 range projects with known and/or anticipated wetlands impacts (see answer to Issue #9, below, for additional details). On-site wetlands mitigation was not a viable option because, as discussed in Section 5.3.3.2 of the FEIS, although Fort Stewart has an existing mitigation bank and an on-site wetlands restoration project, it is running out of new places where additional on-site mitigation can be conducted. If credits are available in the primary service area in the future, however, then Fort Stewart will work to try and obtain these credits, in accordance with the Compensatory Mitigation Rule For Losses of Aquatic Resources (33 CFR 332) and the Federal Acquisition Regulation. For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs).

After exploring and selecting reasonable site alternatives for the proposed FY11-FY14 range projects, the Installation determined that the last remaining on-site mitigation bank (Pond 4) could not support the wetland mitigation requirements for these facilities and sustain itself for mitigation of proposed and future garrison construction, and other unplanned projects that arise out of mission changes. The remaining acres within the Installation Wetland Bank allows Command to respond to emergency range training requirements which surface from “In Theater” conditions and scenarios, or award Congressional garrison or training additions that must be executed by Fort Stewart within one year or less. If Commanders did not have this flexibility, Installation projects with unavoidable wetland impacts would be cancelled or held up in significant delays awaiting Congressional funding to purchase “off-Post” wetland credits.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. The credits purchased were in the secondary service area of the Wilkinson-Oconee Bank which was the only bank with available credits. The on base Pond Four Mitigation Bank would not have enough acreage needed for these projects. Fort Stewart has conducted an in-depth

review of potential wetland mitigation sites on the base and is in the process of developing additional areas connected to the existing Pond Four Mitigation Bank; however, no additional mitigation is available at this time.

h. Issue 9: The Applicant's proposed mitigation plan is based on mitigation credits purchased a year ago from the Wilkinson-Oconee Bank which was the "only bank that provided an offer to the solicitation...." DEIS at 6-8. It is our understanding that Section 404 permit applicants are discouraged from procuring mitigation credits in advance of receiving a permit so that the Applicant is not limited in its mitigation options, such as the use of new mitigation banks. This reasoning is at play here. It has been a year since the Applicant solicited a mitigation contract and, according to the Applicant's DEIS mitigation bank table 6.1, at least two Ogeechee River Watershed banks may now have credits available.

(1) Applicants Response: The timeline associated with Congressional Budget approval and Federal Appropriation process for military construction requires advance planning to enable construction to be implemented in the timeframe appropriation was made. The timeline for planning and construction of these projects is quite early (two years out or more) and did not allow for a later solicitation. To secure the funds necessary to build a proposed range, Headquarters-Department of the Army (HQDA) requires the Installation to budget for wetland impacts that will be unavoidable at least two years prior to the proposed project's anticipated contract award date. If an Installation fails to provide this to HQDA within the given timeline, the project is not funded. In the past, Fort Stewart has been able to mitigate using its on-Post wetland mitigation bank; however, as mentioned above, the on-Post bank no longer has an adequate amount of credits available to support these ranges while also meeting the requirements of the Installation's "In-Theater" mission requirements. The Installation utilized the Compensatory Mitigation Rule (33 CFR Part 332) when developing its mitigation plan for the proposed FY11 MPMGR, FY11 IPBC, FY13 QTR, and the FY13 DMPTR. Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Section 6.4.1.1 of the FEIS has been revised to clearly explain that a mitigation decision has not yet been made for the FY13 QTR and the FY13 DMPTR.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the

Wilkinson-Oconee Bank was an acceptable mitigation alternative. The USACE recognized the time restraints associated with the proposed projects and the military's appropriation and allocation of funds needed for potential wetland impacts and agreed to the use of the Wilkinson-Oconee Bank for these projects. Any future projects mitigation requirements would fall within the guidelines and mitigation availability in place at that time.

i. Issue 10: Furthermore, we share EPA's concerns that the Applicant is not sufficiently mitigating impacts on streams. It is our understanding that Fort Stewart's projects in the past have significantly affected streams that were not mitigated. ORK urges the Corps to ensure that stream impacts are assessed separately from wetlands impacts and that the loss of streams is compensated appropriately. Overall, ORK is concerned that the Applicant's proposed mitigation plan simply does not include adequate compensation for Fort Stewart's wetlands and streams that will be significantly impacted by the Project.

(1) Applicants Response: No streams will be lost as a result of the proposed project. The footprints of the MPMGR and IPBC on the 7.5-minute USGS topographic quads show "blue line" streams in the areas; however, a site visit by Fort Stewart and the Georgia Environmental Protection Division (GA EPD) on January 20, 2010, found no streams. The Savannah District also did not identify any streams within the range footprints. This information was added to Section 4.3.1, of the FEIS.

Over the years, Fort Stewart has worked diligently to mitigate impacts – direct and indirect, as well as cumulative – to the Installation's streams, as well as wetlands. During the development of the Installation's wetland bank, for example, thousands of feet of Canoochee Creek and Strum Bay were restored without being credited to the Installation's mitigation bank. The Installation takes pride in that fact and welcomes working with ORK and other local environmental stakeholders on future projects.

(2) USACE Position: The USACE has completed an expanded preliminary jurisdictional determination for the project site. This determination verified there are no jurisdictional streams located on the project site.

j. Issue 11: Failure to Minimize Impacts to Marine Resources. Section 404(b)(1) guidelines prohibit issuance of a permit where "[t]he proposed discharge does not include

all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem." 40 C.F.R. § 230.12(a)(3)(iii) (emphasis added). None of the information that we have reviewed demonstrates that the Applicant has tried to adequately minimize the impacts of the Project. The Applicant repeatedly contends that because it is utilizing existing range footprints the Project will "avoid and minimize impacts to more pristine and un-fragmented wetlands systems" on Fort Stewart. See e.g. Public Notice at 3. While ORK appreciates the Applicant's utilization of existing ranges for the Project, this reuse of range areas does not ensure minimization of harm to aquatic ecosystems or satisfy the regulation's mandate that the Project includes "all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem." 40 C.F.R. § 230. 12(a)(3)(iii).

(1) Applicants Response: In addition to avoiding and minimizing impacts to more pristine and un-fragmented wetlands systems, as noted in the comment, Fort Stewart consistently seeks to minimize and avoid wetland impacts at each stage of the design process. It is also important to note that the proposed ranges would be constructed on existing ranges that are operational and already cleared of vegetation. First, much of the avoidance and minimization process takes place before actual site selection. (See response to Issue #2.) Training ranges of this kind have fairly specific requirements and it is not always possible to build them without impacting every wetland in the footprint; however, site designers may alter certain aspects in response to environmental concerns during various stages of the design process (10%, 35%, 60%, 90%, and 100% stages of design completion). This is easiest if they can do so while still meeting the operational and training requirements of the range. For example, the currently on-going design process reduced the wetland impacts from the IPBC to a third of what they were at the time of writing the DEIS. Impacts from the MPMGR were also slightly reduced during that time and several proposed range projects were sited without wetland impacts of any kind. It is hoped that impacts from the QTR and DMPTR may be reduced, but as they are not yet in the design process, this cannot be precisely determined.

To ensure compliance with the Georgia (GA) Erosion and Sedimentation Control Act (ESCA) and the CWA on existing and future training ranges, Fort Stewart mandates full utilization of Timber Harvest best management practices (BMPs), National Pollutant Discharge Elimination System (NPDES) permit requirements, site-specific Erosion and Sedimentation Pollution Control Plans (ESPCPs), and pre- and post-construction BMPs to reduce the potential adverse impacts to water bodies, such as streams. The projects discussed in the JPN and FEIS have not undergone complete design. During this process,

however, Fort Stewart stormwater specialists review ESPCPs for compliance with the GA ESCA and the CWA. The Installation also utilizes the Natural Resources Conservation Service (NRCS) to provide technical expertise during preparation of ESPCPs prior to Fort Stewart providing construction approval. Fort Stewart stormwater compliance assessors and NRCS consistently inspect and monitor on-going construction actions. They will also do this during the construction of these proposed projects to ensure adherence to associated ESPCPs. Fort Stewart inspectors also routinely inspect tank trails, range access roads, range course roads, and dirt roads/trails to see if any damage is occurring (such as hardened tank trails or water crossings need repairs, to prevent sedimentation of adjacent streams).

(2) USACE Position: The USACE is preparing an analysis of the proposed project pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for this proposed project. This analysis will document that all requirements of the Guidelines have been met.

k. Issue 12: The Applicant-specifically, in Appendix D to the DEIS, fails to adequately describe measures intended to minimize impacts besides asserting that the ranges will be placed in existing disturbed areas. The proposed plans for MPMGR and QTR consist of wetlands impacts of 116.7 acres and 26.7 acres, respectively. Contrary to the Applicant's assertion that these proposed impacts are not extensive, the two ranges impact all wetlands within MPMGR and QTR areas. Thus, when all wetlands in each project area are destroyed or altered, the Applicant has failed to demonstrate that it has adequately minimized impacts to the aquatic ecosystem. The Applicant's failure to offer measures to minimize impacts to wetlands and streams violates the Section 404(b)(1) guidelines and the CWA. ORK urges the Corps to require the Applicant to set forth specific measures intended to minimize wetlands impacts on each of the four proposed ranges.

(1) Applicants Response: As noted in previous response, Fort Stewart attempts to avoid and minimize wetland impacts throughout the siting and design process. The most substantial avoidance and minimization occurs during the siting process as part of the site alternatives to carry forward for detailed analysis. Please note that, at the initial siting phase, the amount of wetland acres impacted attributed to each range is simply a total of

all wetland acres that *would be located within the range footprint that could potentially be impacted*, and it is likely not *all of the wetlands within the footprint will be impacted by the project because avoiding and minimizing negative impacts wetland are carried forward as a consideration into the actual range design process after the site is selected*. Efforts are made to reduce these impacts as the design progresses and, it is anticipated that, as design proceeds, additional wetlands avoidance and minimization of effect will be achieved. Again as an example, the currently on-going design process for the IPBC range has reduced the wetland impacts to a third of what they were at the time of writing the DEIS. Design efforts for the MPMGR have produced similar results, as well. Furthermore, little-to-no impervious surfaces will exist on these ranges, so runoff will not increase appreciably. The primary areas of “hardened surfaces” will consist of concrete turning pads, hardened stream crossings, etc., but not hardened roads and/or completely paved areas. The range surfaces will still be permeable, and, after construction, will acquire a covering of grasses and light herbaceous vegetation. Furthermore, wildlife may still traverse the ranges and graze during periods (sometimes weeks or more) the ranges are not in use.

In regard to the general issues of siting ranges and orienting them to avoid wetlands, further mention must be made of the Surface Danger Zone, or SDZ. Every range has an SDZ, an area within which people, property, and wildlife are in danger of being struck by projectiles during live fire exercises. Because of this danger, safety of Fort Stewart personnel, the public, and wildlife is a primary consideration in range siting. As previously noted, an SDZ may cover hundreds or even thousands of acres, and ranges must be sited to ensure areas of habitation, daily operations, traffic, and environmental sensitivity do not fall within them. A further limitation to siting is the fact that Fort Stewart is essentially cut into quarters by two major Georgia highways conveying regular civilian traffic. Injury or loss of human life during live fire exercises due to an improperly placed SDZ would be unacceptable to any party. Therefore, all organizations involved in siting ranges are forced to site ranges and their attendant SDZs very carefully. Efforts are made to ensure SDZs overlap. This maximizes land use and minimizes areas impacted by live fire; in part this is itself an environmental consideration as vegetation and animal populations may suffer losses from carelessly directed live fire.

(2) USACE Position: The USACE is preparing an analysis of the proposed project pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be

completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for this proposed project. This analysis will document that all requirements of the Guidelines have been met.

1. Issue 13: Deposition of Munitions. Finally, to our knowledge the Applicant fails to discuss the impact to water quality of any munitions landing in any waters of the United States on the proposed ranges. Under the Section 404(b)(1) guidelines, the Corps has an independent duty to evaluate water quality impacts before it issues a permit. The deposition of the munitions in such waters will be an indirect impact of the proposed Project.

(1) Applicants Response: The Military Munitions Rule states that used or fired munitions are considered a solid waste only when they are removed from their original landing spot (www.epa.gov/epaoswer/hazwaste/military/index.htm). Therefore, since the proposed ranges will utilize existing impact areas and the munitions will be used for their intended purposes and will be left where they land, the munitions are not considered solid waste. The best practices to minimize the impact of lead on the environment are stormwater and erosion controls, vegetation management, soil amendments, bullet traps, and soil pH modifiers which are utilized.

(2) USACE Position: A certain percentage of the munitions that are used or fired on this range, and the other three ranges under review, would likely land in waters of the United States. The USACE would assume that most of this exploded ordinance would be comprised of lead, copper, zinc and other inert metals. Fragments of inert metal would not dissolve in water or otherwise become bio-available. Therefore, there would be a very low probability of munitions resulting in a more than minimal impact on water quality. The Georgia Environmental Protection Agency is reviewing the proposed project under Section 402 of the Clean Water Act, for compliance with the state's Water Quality Certification program. Prior to the USACE issuing a final permit for this proposal, the Georgia EPD must first issue Water Quality Certification. With issuance of Water Quality Certification, Georgia EPD would confirm that the proposed project would meet all applicable state standards.

PART III - ALTERNATIVES/SECTION 404(b)(1) ANALYSIS

A. ALTERNATIVES:

1. No Action: The no action alternative is one in which the proposed DMPTR facility would not be built on Fort Stewart. Without this range, the units that are stationed on or habitually train on the Installation would not be able to train critical, individual crew live-fire and command and control tasks in a digital mode. This would force units to train critical tasks in a degraded mode and therefore, resulting in a decrease in the readiness posture and overall deployability of a unit. The Army strategy is to train individual crews on a DMPTR and collective training tasks (section and platoon level gunnery) on a Digital Multi-purpose Range Complex (DMPRC). The Installation has a DMPRC that is currently being constructed to train tank and Bradley crews in collective gunnery skills (section and platoon level) in a digital environment. The DMPRC, however, is not capable of supporting the training through-put of the units that train on the installation for both individual crew qualification and collective (squad and platoon level) training. It would take 522 range days (each day the range is used is considered one range day) a year to train all the individual and collective live-fire tasks on the DMPRC for the 3 Heavy Brigade Combat Teams (BCTs) on the Installation. The 522 range days includes maintenance days on the range where targets, target mechanisms, and other sensitive equipment is maintained by range operations personnel. The National Guard units that train on the installation would cause the number of days to exceed 522 range days a year. The DMPRC cannot, therefore, be used to support both the individual live-fire training requirements and the annual collective live-fire training requirements. Without the DMPTR, the individual tank and Bradley crews would not be trained in the individual crew live-fire skills needed prior to moving into collective gunnery training skills.
2. Off-Post Locations: Consideration was given to siting the DMPTR in an Off-Post location. Duplicating the infrastructure at a location Off-Post would incur considerable costs beyond the capability of the applicant's budget constraints. The DMPTR would at a minimum require a large tract of land in an appropriate shape to co-locate the surface danger zones (SDZ) and associated facilities (see further discussion below). Estimates and surveys have shown to acquire such a track of land would require an Environmental Impact Statement. An Off-Post facility would be difficult to locate and still meet the Proximity requirements, especially given the logistics, cost, and scheduling required. Additionally, there are no other Public Lands available nearby that would be compatible with the DMPTR training requirements.
3. On-Post Location: The proposed project is for the construction of a DMPTR that utilizes existing SDZs, does not isolate useful maneuver terrain, cut off impact areas, create a new

impact area, or make Unexploded Ordnance (UXO) clearance operations difficult, while avoiding impacts to wetlands. The DMPTR is a large caliber range (utilizing ammunition cartridges with a bullet diameter, or caliber, of greater than 0.75 inches) is used to meet critical training needs for both active and reserve component units that train on Fort Stewart. The DMPTR is necessary to support the crew qualification tasks of M1A1 tank crews, M2 and M3 Bradley vehicle crews, and Stryker vehicle crews. This range is used to train and evaluate vehicle crews on the skills necessary to detect, identify, and engage an enemy doctrinal tactical array of stationary and moving infantry and armor targets. The range can also be used to train weapons crews operating in the same tasks. In addition to live-fire, this range can also be used for training with sub-caliber and/or laser training devices.

The range would consist of a standard one lane DMPTR with four roads with midpoint cross over capability and five battle positions per road. The DMPTR contains 105 SITs, 35 SATs, six MATs, six MITs, four urban target facades, five firing positions per road, one Range Operations Control Area facility, one AAR facility, an air-vault latrine facility, ammo breakdown area, ops storage building, instrumentation loading dock, general instruction building, and surfaced staging area.

The applicant identified three potential DMPTR sites located within the Fort Stewart reservation. Each of these sites contains the area needed to support the range and accompanying SDZ. The three sites, which are discussed in more detail below, were identified and evaluated using the following criteria:

1. Allow Anti-Terrorism and Force Protection. The site must be able to accommodate appropriate anti-terrorism measures and standoff distances.
2. Compatibility with Wildfire and Control (Prescribed) Burning Programs. The risk of wildfires is taken into consideration when siting projects. Areas to be avoided are those that are infrequently burned, because of safety concerns and for adherence to protected species habitat management plans include parcels near major highways (State and Interstate) and adjacent communities. Constructing facilities in locations that hinder Fort Stewart's prescribed burn program must be avoided.
3. Minimization of Environmental Impacts. Consideration of environmental impacts when siting projects include the following: avoid or minimize impacts to cultural and natural resources (such as wetlands and protected species); avoid direct impacts to creeks and

streams; limit expansion of noise cones into existing residential areas and off-post communities; minimize adverse air quality impacts; and limit new metal contamination in standing timber (ranges).

4. Further Sustainability Goals. The Army incorporates sustainability principals into the planning, development, and upgrade of its facilities. From the outset, site selection and design follow sustainability principals, starting with design “charrettes” to ensure stakeholder collaboration toward optimal design, fiscal constraints, local characteristics and constraints, environmental issues, and consideration of functional adjacencies/relationships and land use compatibility. Site selection is based on functional adjacencies/relationships and land use compatibility. Ensure development near Fort Stewart’s Garrison/cantonment (living and working) areas flow well with existing infrastructure, protecting green fields and preserving habitat and natural resources. Minimize negative impacts on the site and on neighboring properties and structures; avoid or mitigate excessive noise, shading on green spaces, additional traffic, obscuring significant views, etc.


The Army Range Requirements Model (ARRM) is an Army-wide planning tool used by Army Headquarters to determine range requirements at each Army Installation. The ARRM provides an automated capability to take doctrinal requirements and accurately calculate live training throughput capacities and throughput requirements for each Installation. Ranges must be identified in the Installation’s ARRM for it to receive Department of the Army (DA) funding. In addition to the four siting criteria listed above, which are applicable to all facilities at Fort Stewart, the MPMGR has been identified in the ARRM and was sited based the following Range-specific criteria:

1. Ability to Meet Training Requirements. There should be sufficient range capacity to ensure each unit meets its training requirements as set forth in the following: Army regulation (AR) 350-1, *Army Training and Leader Development*; Training Circular (TC) 7-9, *Infantry Live-Fire Training*; DA Pamphlet (PAM) 350-38, *Standards in Weapons Training*; TC 25-8, *Training Ranges*; the 3rd Infantry Division’s Live Fire Guidance; and the unit’s related Mission Essential Task List.
2. Range Design. Based on each proposed range’s training purpose, each range must be of sufficient acreage to accommodate the SDZs for use of the specified munitions, as required by DA PAM 385-64, *Ammunition and Explosive Safety Standards*. The SDZ is

a temporary safety boundary that surrounds the firing range and associated impact area that provides a buffer to protect personnel from the non-dud producing rounds that may be ricocheted during operation of the range. It includes an ordnance dispersion area, ricochet area, and an added safety buffer zone. This area is closed to all unauthorized personnel during each training exercise on the range. In addition, each range must have an existing impact area sufficient to support live-fire munitions used at Fort Stewart and be configured (e.g., course and targets) in a manner lending itself to achieving offensive and defensive training objectives.

3. Proximity. Range assets must be available for access by all Fort Stewart-stationed units to meet their reoccurring training requirements and to achieve combat readiness status before they deploy. This means sufficient ranges must be available within a geographic distance that allows each unit to get equipment to and from range locations to complete essential tasks in a timely manner. The time and cost of transporting units to a training area must not interfere with the overall training levels for a unit. Each unit has a limited amount of time and cost resources to achieve training requirements. The time and cost of transport cannot be so excessive that it compromises the unit's ability to meet all mission essential tasks and readiness requirements. Quality of life may be affected if troops have to travel too far for training.

The Corps has performed an analysis of the three identified Courses of Action (COAs) and determined that COA 1 is the preferred alternative because the site minimizes both operation constraints and environmental impacts. A table is shown below for each proposed range, comparing each COA against the operational feasibility criteria is shown below. The overall screening criteria discussed in more detail below.

<i>Summary of Screening Analysis for FY1 QTR</i>				
Criteria	No-Action	COA 1	COA 2	COA 3 (Eliminated)
Can the Army standard design in TC 25-8 for this range be accommodated under this course of action within allowable waivers or modifications?		✓	✓	✓
Can the Surface Danger Zone (SDZ) for this range be accommodated without	n/a	✓	✓	✓

infringing on adjacent training facilities or ranges?				
Has the range been sited to maximize use of the Installation's Training Area for future requirements by leaving the maximum amount of suitable contiguous land mass available for future needs?	n/a	✓	✓	✗
Is the terrain susceptible to wildfires which could cause safety issues to nearby Interstates or State Highways or lengthy shutdowns?	n/a	✓	✓	✓
Does this course of action avoid and minimize adverse environmental impacts?	✓	•	⊗	✓
Does this course of action require either electrical power lines or fiber optic cable in excess of 10,000 feet, or for water lines to be constructed?	n/a	✓	✓	✓
Does this course of action require a new duded impact area to be established?	n/a	✓	✓	✓
Does this course of action minimize construction costs for the range? ¹	✓	•	•	•
Does this course of action meet Force Protection and Anti-Terrorism measures?	n/a	✓	✓	✓
Summary of Course of Action Feasibility	✗	•	⊗	✗

¹ For this criterion, that may arise for mitigating potential environmental impacts. It represents only the relative cost of construction for each particular location.

LEGEND:

- ✗ = Not Feasible – Unacceptable limitations
- ⊗ = Feasible – Moderate limitations and challenges
- = Feasible – Minor limitations and challenges
- ✓ = Feasible – No limitations or challenges
- n/a = Not Applicable

The Directorate of Public Works (DPW) Environmental Division, working in conjunction with the Directorate of Plans, Training, Mobilization, and Security (DPTMS) Training Division, the DPW Fish & Wildlife Branch, the DPW Forestry Branch, and the DPW Master Planning Division were able to identify two separate locations on Fort Stewart for the placement of this DMPTR. Each of the four sites is discussed in more detail below:

- a. **COA 1 is located in the Red Cloud Foxtrot, B-9 and B-10 Training Areas (TA)**

within Alternative B and is the preferred site.

Allow Anti-Terrorism and Force Protection. Appropriate anti-terrorism measures and standoff distances are met by siting DMPTR at COA 1.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the DMPTR at COA 1 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities.

Minimization of Environmental Impacts. COA 1 would construct the DMPTR on the top of the existing RC-F range, avoiding significant impacts to previously unimpacted wetlands. This COA would allow 75 to 85 percent of the DMPTR's SDZ to overlap the SDZ of adjacent ranges, which would reduce environmental impacts and would keep timber metal contamination in this general location. The COA 1 site would impact approximately 43.6 acres of jurisdictional wetlands and would require wetland mitigation and 404 permitting. Since approximately 75 to 85 percent of this site falls within a previously disturbed site, this COA significantly reduced the potential for the finding sites of archeological significance. Direct impacts to the Strum Bay wetland restoration area would be avoided. A low-water-crossing will be constructed on an existing tank trail that crosses this Strum Bay wetland restoration area. Isolated wetlands will be completely avoided by the targets and will only be impacted by line-of-sight. After survey of the COA 1 site, it was determined that there are no historic properties within the proposed footprint and all sites were determined ineligible for the National Register of Historic Places (NRHP).

COA 1 would impact Red-cockaded Woodpecker (RCW) foraging habitat. The entire footprint lies within Eastern Indigo snake habitat. There have been seven sightings within the proposed project area. A portion of COA 1 (267.8 acres) lies within Gopher Tortoise habitat. Prior to construction, COA 1 would be surveyed for Gopher Tortoises and relocated to appropriate habitat. This action is likely to affect but not adversely affect the Eastern Indigo snake. A portion of COA 1 lies within frosted flatwoods salamander habitat (56 acres), but would not affect any known breeding ponds or their buffers. Formal consultation with the US Fish and Wildlife Service (USFWS) will be conducted for these impacts. However, it is anticipated that these impacts would not impede recovery of the Fort Stewart RCW or Salamander populations. Noise Zones II and III would not occur beyond the Installation boundary as a result of COA 1.

Further Sustainability Goals. As discussed above, COA 1 was sited to on top of the existing RC-F range to avoid development of an inappropriate site and reduce environmental impacts. COA 1 was selected based on compatibility with the adjacent land use.

Ability to Meet Training Requirements. COA 1 would be accessible to meet annual training requirements and to achieve combat readiness status before they deploy. The siting of the DMPTR at this location would prevent live fire rounds from crossing major roads and also prevent the SDZ from extending beyond the Installation's boundary. SDZ coordination would have to be conducted by Range Safety personnel during operation of the range. However, the SDZ conflict between other ranges was looked at closely and minimized to allow for complete use of adjacent ranges to the north and south. COA 1 would be available and would not interfere with the training requirements of other military units.

Range Design. COA 1 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use on Fort Stewart. COA 1 was configured to achieve offensive and defensive training objectives. This location does not constrain training within Fort Stewart. The COA 1 location does not impact existing maneuver areas, nor does it create a new contaminated impact area. Furthermore, the site does not isolate useful maneuver terrain, cut off impact areas, or make UXO clearance operations difficult. When the proposed range requires maintenance, the site should provide easy access once all safety requirements are conducted. It would not result in live fire rounds crossing state highways nor would it result in the SDZ extending beyond the Installation's boundary. The range is in close proximity to utilities, such as power and fiber optics cable parallel Georgia Highway 119.

Proximity. The time and cost of transporting units to COA 1 would not have a major impact on the overall training levels for a unit. COA 1 was sited within a geographic distance that allows each unit to deploy its Soldiers logistically and equipment to and from the DMPTR to complete essential life-fire tasks within established timeframes.

The DMPTR COA 1 site would be easily accessible to using units. The Installation considered the overall training requirements and the flow to and from ranges when determining this site location. The preferred DMPTR location is sited near an existing tank trail (FS 36) and a state highway which would allow easy transport of Soldiers & Armor vehicles to the range to maintain operational tempo and minimize operational constraints. Therefore, this site is carried forward as a viable COA, as the Installation's preferred DMPTR site.

Advantages/Disadvantages: Based upon the information gathered, COA 1 is the preferred alternative because does not impact existing maneuver areas, isolate useful maneuver terrain, cut off impact areas, or make UXO clearance operations difficult, while minimizing environmental impacts.

b. COA 2 is located RC-F, B-9 and B-10 TAs in Alternative C.

Allow Anti-Terrorism and Force Protection. Appropriate anti-terrorism measures and standoff distances are met by siting DMPTR at COA 2.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the DMPTR at COA 2 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities.

Minimization of Environmental Impacts. Similar to COA 1, COA 2 would construct the DMPTR on the top of the existing RC-F range. Originally, COA 2 was preferred by DPTMS Training Division; however, the site contained approximately 240 acres of wetland that would be impacted as a result of this project. Therefore, the site was shifted northwest to minimize adverse impacts to wetland areas and this shift developed into COA 1, the Installation preferred site for the DMPTR. This still reduces new adverse environmental impacts, but not to the extent of COA 1. Impacts to threatened and endangered species would be similar to COA 1. After survey of the COA 2 site, it was determined that there are no historic properties within the proposed footprint and all sites were determined ineligible for the NRHP.

Further Sustainability Goals. As discussed above, COA 2 was sited to on top of the existing RC-F range to avoid development of an inappropriate site and for compatibility with the adjacent land use. However, the location of COA 2 would not reduce environmental impacts and does not meet the sustainability criteria.

Ability to Meet Training Requirements. COA 2 would be accessible to meet annual training requirements and to achieve combat readiness status before they deploy. The siting of the DMPTR at this location would prevent live fire rounds from crossing major roads and also prevent the SDZ from extending beyond the Installation's boundary. Unlike COA 1, COA 2 would also allow for down range maintenance and target repairs when surrounding ranges are in use. COA 2 would not result in cross fire beyond the down range tank trails and the associated

SDZ would overlap adjacent RC ranges, but with a smaller percentage (approximately 55 to 60 percent) than that of COA 1. SDZ coordination would still have to be conducted by Range Safety personnel during operation of the range. COA 2 would be available and would not interfere with the training requirements of other military units.

Range Design. COA 2 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use at Fort Stewart. COA 2 was configured to achieve offensive and defensive objectives. This location does not constrain training within Fort Stewart. The COA 2 location does not impact existing maneuver areas, nor does it create a new contaminated impact area. Furthermore, the site does not isolate useful maneuver terrain, cut off impact areas, or make clearance operations difficult. When the proposed range requires maintenance, the site should provide easy access once all safety requirements are conducted. The range is in close proximity to utilities, such as power and fiber optics cable parallel Georgia Highway 119.

Proximity. COA 2 would be accessible to meet annual training requirements and to achieve combat readiness status before they deploy. The time and cost of transporting units to COA 2 would not have a major impact on the overall training levels for a unit. COA 2 was sited within a geographic distance that allows each unit to deploy its Soldiers logistically and equipment to and from the DMPTR to complete essential life-fire tasks within established timeframes.

Like COA 1, the COA 2 site would be easily accessible to using units. The Installation considered the overall training requirements and the flow to and from ranges when determining this site location. COA 2 is sited near a state highway which would allow easy transport of Soldiers & Armor vehicles to the range to maintain operational tempo and minimize operational constraints.

Advantages/Disadvantages: Based upon the information gathered, construction at the COA 2 site in the B-9/B-10 Training Areas was initially preferred by the Fort Stewart DMPTR; however, construction would impact approximately 240 acres of wetlands, requiring extensive mitigation and permitting. Therefore, the DMPTR was shifted northwest to minimize adverse impacts to wetlands, as well as protected species habitat RCW, while maintaining operational constraints. This shifted alignment became COA 1, the Installation preferred site for the DMPTR. COA 2 is still viable however and is carried forward for analysis.

c. COA 3 is located on the Multipurpose Range Complex (MPRC)

Allow Anti-Terrorism and Force Protection. Appropriate anti-terrorism measures and standoff distances are met by siting DMPTR at COA 3.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the DMPTR at COA 3 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities.

Minimization of Environmental Impacts. The placement of the DMPTR on top of the currently heavily utilized MPRC would result in minimal environmental issues. The MPRC is sufficient in width and length to place the entire DMPTR inside of the existing range without affecting previously undisturbed areas. Given the type of training which currently takes place at this facility there would be no new noise impacts or other new environmental constraints.

Further Sustainability Goals. As discussed above, COA 3 was sited to on top of the MPRC range to avoid development of an inappropriate site and to reduce environmental impacts.

Ability to Meet Training Requirements. COA 3 would be a substantial detriment to Soldier training, as this facility is critical in meeting the Mission Essential Task List (METL). Soldiers must obtain in order to be proficient in the weapons platform they must utilize in theatre. Therefore, construction on top of this existing range would remove it from the Installation's training cycle, where it is needed. Fort Stewart is currently constructing a Digital MPRC that will help alleviate throughput needs. This alternative was determined unfeasible.

Range Design. COA 3 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use at Fort Stewart. COA 3 was configured to achieve offensive and defensive objectives.

Proximity. COA 3 was sited within a geographic distance that allows each unit to deploy its Soldiers logistically and equipment to and from the DMPTR to complete essential life-fire tasks within established timeframes.

Advantages/Disadvantages: Given these considerations, the placement of the DMPTR within the existing MPRC footprint is an environmentally sound siting option; however, this siting would be a substantial detriment to Soldier training, as this facility is critical in meeting the METL.

Soldiers must obtain in order to be proficient in the weapons platform they must utilize in theatre. Therefore, construction on top of this existing range would remove it from the Installation's training cycle, where it is needed. Fort Stewart is currently constructing a Digital MPRC that will help alleviate throughput needs. This alternative was determined unfeasible.

B. AVOIDANCE:

1. Total wetland avoidance on-site is not possible based on the layout and size of range complexes. Also, the layout of adjacent wetland areas made total avoidance impossible. Any further reduction in proposed impacts would not meet the applicant's purpose and would not be practicable.
2. The applicant has not completed final site design for the proposed project. The standard site layout for this type of range would require the filling and/or mechanized clearing of all 43.6 acres of bottomland hardwood wetlands on the 981-acre project site. The applicant will likely be able to avoid some of the wetlands on the project site as final site design is completed for the project. However, for the purposes of this permit evaluation, the US Army Corps of Engineers (USACE) will assume that all 43.6 acres of wetlands on the proposed project site would be impacted. As an additional avoidance measure, the USACE would include the following special condition in any draft permit issued for this project:

The site design for this project has not been finalized. Authorized wetland impacts are based on a standard range design. Prior to conducting any work in wetlands on this project site, the permittee shall submit final site development plans to the USACE for review and approval. It is anticipated that once final design is completed, there will be a minor reduction in the amount of wetland area that will be impacted by the project. This anticipated change in the footprint of authorized wetland impact is authorized under this permit and modification of the permit will not be required for this change in site design.

C. MINIMIZATION ALTERNATIVES:

1. Minimizing Wetland Footprint: As required by Section 404(b) 1 of the CWA, minimization of adverse impact to wetlands was documented within the footprint the project site, based on the current design configuration of the proposed project. As the project continues through the design process, to the point of final design, it is anticipated that there

will be the potential for avoiding impacts to some wetland areas. Side slopes of wetland fills will be at a 3:1 minimum, to avoid unnecessary impacts. Wetland boundaries and project limits will be clearly marked to prevent inadvertent impacts to adjacent wetland areas.

2. Erosion Control Techniques: The applicant has indicated that best management practices (BMPs) would be utilized while performing any construction activities on the subject property. In addition, the applicant has indicated that activities would be performed in a manner to minimize turbidity and/or erosion. Any permit that would be issued by the USACE would also include the following special condition, "All work conducted under this permit shall be located, outlined, designed, constructed and operated in accordance with the minimal requirements as contained in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. Utilization of plans and specifications as contained in "Manual for Erosion and Sediment Control, (Latest Edition)," published by the Georgia Soil and Water Conservation Commission or their equivalent will aid in achieving compliance with the aforementioned minimal requirements."

D. COMPENSATORY MITIGATION: Fort Stewart determined that at least 336.79 credits are required to compensate for the proposed impacts. Fort Stewart will evaluate acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs) for the FY13 DMPTR. Similar to the process outlined in the Compensatory Mitigation Rule, the Installation's standard procurement processes conducts market research in accordance with the Federal Acquisition Regulation. This research requirement as it relates to contracting of off-post wetland credit purchases includes evaluating the current market and availability of primary and secondary service area mitigation credits. This process will be implemented when seeking mitigation options for ranges beyond FY11.

E. CONCLUSIONS: Based on the above, an off-post facility would be difficult to locate and still meet the proximity requirements, especially given the logistics, cost, and scheduling required. Also, duplicating the infrastructure at a location off-post would incur considerable costs beyond the capability of the applicant's budget constraints. The applicant provided an adequate analysis of on-post locations for sighting this range and mitigation, as well as three other proposed new ranges.

F. SECTION 404(b)(1) ANALYSIS: This project must be evaluated for compliance with the Section 404(b)(1) Guidelines (40 CFR Section 230). The goal of the 404(b)(1) Guidelines is “to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredges or fill material.” An expanded 404(b)(1) analysis will be conducted prior to making any permit decision.

PART IV - PUBLIC INTEREST REVIEW

A. ENVIRONMENTAL SETTING/EXISTING CONDITIONS: The DA owns and manages the area in which the proposed DMPTR is located. The preferred COA is located with Delta Small Arms Impact Area, specifically located to the west of the existing Garrison at Fort Stewart.

B. ENVIRONMENTAL IMPACTS: The Corp’s Regulatory Program considers the full public interest, reflecting the protection and utilization of important resources. Table 3 is a summary of our public interest review for the proposed activity, which assesses the impacts of the proposed permit action on environmental and other public interest factors (33 CFR 320.1(a)(1), 320.4 and 325.3(c)).

Table 3. Summary of Project Impacts

FACTORS	No Effect	Negligible	Undetermined	Beneficial Major/ Minor		Adverse Major/ Minor	
1. Economics/Social	X						
2. Education/Scientific	X						
3. Aesthetics	X						
4. Food-Fiber Production	X						
5. Historical/Architectural/ Archaeological	X						
6. Recreation	X						
7. Land Use	X						
8. Mineral Resources	X						
9. Soil Conservation							X
10. Water Supply Conservation	X						
11. Water Quality		X					
12. Air Quality		X					
13. Noise Levels							X
14. Public Safety		X					
15. Energy Needs							X
16. National Security	X						
17. Navigation	X						
18. Shoreline Erosion Accretion	X						
19. Flood Hazards	X						
20. Flood Plain	X						
21. Wetlands							X
22. Refuges	X						
23. Fish	X						
24. Wildlife			X				
25. Food Chain Organisms	X						
26. Shellfish Production	X						
27. Threatened and Endangered Species			X				
28. General Environmental Concerns							X
29. Property Ownership	X						
30. Mineral Needs	X						
31. Other	X						

C. DISCUSSION: We have evaluated the permit application regarding the need for the proposed activities, the practicability of project alternatives, and the beneficial and detrimental effects, including cumulative impacts. Complete descriptions of the 31 public interest factors can be found in the Range and Garrison Construction Environmental Impact Statement (RGCEIS) for Fort Stewart. Each public interest factor is referenced to specific sections within the EIS.

1. Economics/Social – The proposed project will have no effect to the local economy or local social environment. (RGCEIS Section 4.11 Social and Economics)
2. Education/Scientific – The proposed project will have no effect to educational or scientific resources. The project footprint is within an Army Installation artillery impact area. (RGCEIS Section 4.11 Social and Economics)
3. Aesthetics – The proposed project will have no effect to aesthetics. The project footprint is within an Army Installation artillery impact area and is off-limits to unauthorized personnel. (RGCEIS Section 4.7 Land Use)
4. Food-Fiber Production – The proposed project will have no effect to food or fiber production. The project site is within an existing artillery impact area. (RGCEIS Section 4.4.3 Forestry Management)
5. Historical/Architectural/Archaeological – The US Army, Fort Stewart is the lead federal agency for this proposed action. Impact analysis for historic properties follow guidelines set forth in Section 106 of the National Historic Preservation Act (NHPA) implementing regulations (36 CFR 800), Fort Stewart’s Programmatic Agreement with the Georgia SHPO. Fort Stewart would complete required consultation and make any necessary Section 106 of the NHPA determination, if required, prior to any work occurring in waters of the US subject to the jurisdiction of the USACE on a project site where cultural resources have been identified. (RGCEIS Section 4.5 Cultural Resources)
6. Recreation – The proposed project will have no effect to recreational areas. The footprint is located with a land use designated for range and training lands. (RGCEIS Section 4.7 Land Use)
7. Land Use – The proposed project is compatible to the existing land use category of range and

training lands. Therefore, there will be no effect to land use. (RGCEIS Section 4.7 Land Use)

8. Mineral Resources – The proposed project is located within the confines of an Army Installation that is designated for Soldier training. There are no minerals mined at Fort Stewart. Therefore, there will be no effect to mineral resources at the project site. (RGCEIS Section 4.1 Geology and Soils)
9. Soil Conservation – The project will undergo tree removal and grubbing and grading during construction of the proposed range. However, standard erosion and sedimentation control measures will be implemented to prevent sedimentation from leaving the confines of the project site. Erosion and sedimentation control best management practices (BMPs) will also be implemented throughout the duration of the project and after construction to ensure stormwater leaving the range has been filtered before reaching nearby wetland areas. Furthermore, an erosion and sedimentation control plan will be prepared for this project. A National Pollution Discharge Elimination System (NPDES) permit will be obtained for this project. At a minimum, a Level 1A Erosion and Sedimentation (E&S) Control Certified or Subcontractor Awareness E&S trained individual is required to be on site during any land disturbance activity. Adverse impacts to soil are expected to be minor and temporary in nature until construction is completed. (RGCEIS Section 4.1 Geology and Soils)
10. Water Supply Conservation – The proposed project will not require use of the Installation's water supply. Therefore, water supply will have no effect. (RGCEIS Section 4.3 Water Quality and Resources)
11. Water Quality – During the construction phase of the proposed project, some wetland areas will be filled within the range footprint. All necessary permitting and mitigation will be conducted. See number 21, Wetlands, for additional information regarding impacts to wetland areas. Impacts to nearby surface water would likely not be impacted since necessary erosion and sedimentation control measures, as required by the Georgia Environmental Protection Division, will be implemented to prevent sedimentation from leaving the site. Turbidity samples will be taken during and after construction to ensure sedimentation in outfall areas do not increase from what the area currently experiences. Total Maximum Daily Load (TMDL) regulations require maintaining predevelopment time of concentration by strategically routing flows to maintain travel time, improve water quality, and to control the stormwater discharge. Flow calculations will also be conducted

during preparations of the erosion and sedimentation control plan to ensure concentrated stormwater runoff flows from peak rain events will not impact nearby water bodies. The proposed project footprint will be filled during construction activities; therefore, adverse impacts to groundwater are not anticipated. Fort Stewart is in consultation with the Georgia Environmental Protection Division regarding a water quality certification pursuant to Section 401 of the Clean Water Act. The USACE would include a copy of the 401 water quality certification with any permit issued. In addition, the special condition of any permit issued would require the permittee to adhere to the conditions of the 401 water quality certification. (RGCEIS Section 4.3 Water Quality and Resources)

12. Air Quality – Adverse impacts to air quality is not anticipated. Only minor and temporary amounts of dust generation during timber harvesting and construction are expected; however, no regulatory air quality thresholds would be exceeded. (RGCEIS Section 4.2 Air Quality)
13. Noise Levels – The projected operating environment would generate a Noise Zone II contour that extends slightly beyond the northern boundary into an undeveloped area. The projected operating environment under the proposed location would not generate a Noise Zone II contour that extends into the Fort Stewart housing area. The projected operating environment would not generate a Noise Zone III contour that extends beyond the boundary or into the Fort Stewart housing area. (RGCEIS Section 4.6 Noise)
14. Public Safety – During the timber harvest, prescribed industrial safety standards would be followed. No specific aspects of the proposed project would create any unique or extraordinary safety issues. The project location is outside of current explosive safety quantity distance clear zones and the inhabited building distance clear zones. An unexploded ordnance survey will be conducted prior to timber harvesting and construction activities. If necessary, an unexploded ordnance avoidance plan will be prepared. (RGCEIS Section 4.9 Safety)
15. Energy Needs - Within the area of potential effect, there are existing utilities into which new lines from the range can tie in, minimizing the potential ground disturbing activities associated with the establishment of all-new utility systems. This proposed project would also not result in a substantial increase in utility usage. Executive Order 13423 sets as a goal for all federal agencies the improvement of energy efficiency and the “reduc[tion] of greenhouse gas emissions of the agency, through reduction of energy intensity by (i) 3 percent annually through the end of fiscal year 2015, or (ii) 30 percent by the end of fiscal

year 2015, relative to the baseline to the agency's energy use in fiscal year 2003." The U.S. Army Energy Strategy for Installations (U.S. Army Energy Strategy for Installations, 8 July 2005, available at <http://army-energy.hqda.pentagon.mil/docs/strategy.pdf>), also contains strategies to reduce energy waste and improve efficiency. Taking these policies into account, this action does not represent a net incrementally addition to the global climate change problem. (RGCEIS Section 4.8 Infrastructure)

16. National Security – The proposed project will have no effect to national security. The requirement for this range has been validated by the Range and Training Land Program Development Plan prepared for Fort Stewart and the Forces Command Live Fire Training Investment Strategy. This project has been coordinated with the Installation physical security plan, and all physical security measures are included in the project. All required antiterrorism protection measures are included in the project, per DA PAM 190-51 (*Risk Analysis for Army Property*) and Training Manual 5-853-1 (*Security Engineering Project Development*). (RGCEIS Section 4.9 Safety)
17. Navigation – Navigable waters will not be impacted by this project. (RGCEIS Section 4.3 Water Quality and Resources)
18. Shoreline Erosion Accretion - The site is many miles from the coast and the project will not add to shoreline erosion accretion. (RGCEIS Section 4.1 Geology and Soils)
19. Flood Hazards – The site does not present an unusual flood hazard for this area (see below.) (RGCEIS Section 4.3 Water Quality and Resources)
20. Flood Plain – The site is not in a Federal Emergency Management Administration (FEMA) flood zone. (RGCEIS Section 4.3.1 Surface Water and Floodplains)
21. Wetlands – The project, as currently proposed, would impact 43.6 acres of bottomland hardwood wetlands, either through direct filling or by mechanized land clearing. However, the applicant has not completed final site design for the proposed project. The standard site layout for this type of range would require the filling and/or mechanized clearing of all 43.6 acres of bottomland hardwood wetlands on the 981-acre project site. The applicant will likely be able to avoid some of the wetlands on the project site as final site design is

completed for the project. However, for the purposes of this permit evaluation, the US Army Corps of Engineers (USACE) will assume that all 43.6 acres of wetlands on the proposed project site would be impacted. As an additional avoidance measure, the USACE would include the following special condition in any draft permit issued for this project: The site design for this project has not been finalized. Authorized wetland impacts are based on a standard range design. Prior to conducting any work in wetlands on this project site, the permittee shall submit final site development plans to the USACE for review and approval. It is anticipated that once final design is completed, there will be a minor reduction in the amount of wetland area that will be impacted by the project. This anticipated change in the footprint of authorized wetland impact is authorized under this permit and modification of the permit will not be required for this change in site design.

The present total proposed wetland impact for the four proposed ranges is 179.03 acres. As discussed by the applicant above, not all of these proposed impacts are for fill, but a certain percentage would involve mechanized land clearing impacts. Clearing wetlands of vegetation and maintaining them in scrub/shrub vegetation results in a change in function, but not a total loss in function. The mitigation credits proposed by Fort Stewart are assuming a total loss in function. The proposed mitigation plan is to purchase 1,391 credits to compensate for a total of 179 acres of wetland impact for all four ranges. This is a credit to impact ratio of 7.8:1. On average, three credits are generated for each acre of wetland restoration at the Wilkinson/Oconee Mitigation Bank, where credits will be purchased for the FY11 ranges. Therefore, the effective mitigation ratio for the FY11 Multipurpose Machine Gun Range and FY11 Infantry Platoon Battle Course projects would be approximately 2.6:1 of wetland restoration. The Applicant has not ruled out other acceptable compensatory mitigation alternatives to mitigate wetlands impact (provided through mitigation banks or in-lieu fee programs) for the FY13 Digital Multipurpose Training Range and the FY13 Qualification Training Range. Therefore, it is the position of the USACE that the mitigation proposed for this DPMTR project would meet the requirements of the new mitigation rule.

22. Refuges - The site will not impact any areas specifically devoted to wildlife refuge. (RGCEIS Section 4.4 Biological Resources)
23. Fish – The site will not impact any fish species. The Canoochee and Ogeechee rivers are approximately 20 miles from the proposed project site. (RGCEIS Section 4.4 Biological Resources)

24. Wildlife – The site will impact RCW foraging habitat. The entire action area lies within Eastern Indigo snake habitat. There have been seven sightings within the proposed project area. A portion of this action area (267.8 acres) lies within Gopher Tortoise habitat. Prior to construction, area will be surveyed for Gopher Tortoises and relocated to appropriate habitat. This action is likely to affect but not adversely affect the Eastern Indigo snake. A portion of the proposed action area lies within frosted flatwoods salamander (FFS) habitat (56 acres). This proposed action will not affect any known FFS breeding ponds or their buffers. Formal consultation with the USFWS has been completed for these impacts. (RGCEIS Section 4.4 Biological Resources)
25. Food Chain Organisms – No specific or unique food chain organisms are known or suspected to exist on the site. (RGCEIS Section 4.4 Biological Resources)
26. Shellfish Production – The site is many miles from the coast and the project will not affect local shellfish production. (RGCEIS Section 4.4 Biological Resources)
27. Endangered Species – The US Army, Fort Stewart is the lead federal agency for this proposed action. The site will impact RCW foraging habitat. The entire action area lies within Eastern Indigo snake habitat. There have been seven sightings within the proposed project area. A portion of this action area (267.8 acres) lies within Gopher Tortoise habitat. Prior to construction, area will be surveyed for Gopher Tortoises and relocated to appropriate habitat. This action is likely to affect but not adversely affect the Eastern Indigo snake. A portion of the proposed action area lies within frosted FFS habitat (56 acres). This proposed action will not affect any known FFS breeding ponds or their buffers. Formal consultation with the USFWS has been completed for these impacts. Fort Stewart has completed required consultation and the USFWS has made necessary Section 7 of the Endangered Species Act determinations.
28. General Environmental Concerns – The project is expected to incur only the most minimal adverse impact to the local ecosystem. Sites are chosen to include the goal of avoiding and/or minimizing such impacts. Where possible and appropriate, impacts will be mitigated. Fort Stewart is generating an Environmental Impact Statement detailing these impacts.
29. Property Ownership – The property is owned by the United States Army for the primary purpose of military training. (RGCEIS Section 4.7 Land Use)

30. Mineral Needs – No particularly valuable or unique minerals are known or suspected to exist at the site. (RGCEIS Section 4.1 Geology and Soils)

31. Other – No notable environmental aspects not covered by the preceding will be impacted by this project.

D. US ARMY CORPS OF ENGINEERS' WETLAND POLICY: The proposed wetland alteration is necessary to realize the project's purpose and should result in minimal adverse environmental impacts. The benefits of the project would outweigh the minimal detrimental impacts. Therefore, the project is in accordance with US Army Corps of Engineers' Wetland Policy (33 CFR 320.4(b)).

E. TITLE III OF THE CIVIL RIGHTS ACT OF 1964 AND EXECUTIVE ORDER 12898: The proposed action would not directly, or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin, nor would it have a disproportionate effect on minority or low-income communities.

F. CUMULATIVE IMPACTS: The Council on Environmental Quality (CEQ) defines cumulative impacts as the “impact on the environment which results from the incremental impact of the action(s) 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” (40 CFR 1508.7).

Geographic Scope/Region of Influence (ROI): the National Environmental Policy Act (NEPA) requires that the impacts of each proposed project be considered within the appropriate geographical area/region of influence. The geographic area/ROI for purposes of consideration of proposed projects within the boundaries of Fort Stewart are: the Altamaha watershed and United States Geological Service, Georgia Hydrologic Unit Code (HUC) 03070106 encompassing portions of Appling, Evans, Glynn, Jeff Davis, Long, McIntosh, Montgomery, Tattnall, Toombs, and Wayne County; the Lower Ogeechee River watershed HUC 03060202, encompassing portions of Bryan, Bulloch, Chatham, Effingham, Emanuel, Jenkins, and Screven Counties; the Little Ogeechee watershed HUC 03060204, encompassing portions of Bryan, Chatham, Effingham, Liberty, Long and McIntosh Counties; and the Canoochee Creek watershed HUC 03060203, encompassing portions of Bryan, Liberty, Evans, Tattnall, Candler, Emanuel, and Bulloch Counties. The Corps determined that actions taken in the “Fort Stewart Watersheds”

would be sufficiently similar in location, topography, watershed impacts, habitat types, etc., to be considered in a cumulative impacts assessment. To properly scope this analysis the Corps has identified target resources for evaluation based on public and agency comments. Target resources are important resources that could be cumulatively affected by activities in the identified scoping area.

The USACE identified the following target resources because of their scarcity and regional importance: (1) wetlands; (2) water quality; (3) aquatic species, and (4) mitigation. Below we have assessed the cumulative impacts of the proposed project on these target resources. In doing this, we considered the impacts of this project, past projects, as well as all reasonably foreseeable impacts in the above identified watersheds.

The proposed action, in addition to other projects in the geographic areas of consideration (i.e., HUC's 03070106, 03060202, 03060204, and 03060203), have the possibility to result in either negative or positive impacts in a cumulative manner. Cumulative impacts are most likely to occur when a relationship exists between a proposed action, or alternative, and other actions expected to occur in a similar location, time period, and/or involving similar actions, i.e. past, present, and reasonably foreseeable future actions.

There are numerous projects in the watersheds associated with Fort Stewart, which are part of typical urban activities/development. These projects can be categorized generally as construction, maintenance, or demolition. This analysis takes into account the proposed project/action along with the larger projects in the ROI.

1. Wetlands: The following table provides information on all wetland impacts permitted by the Savannah District between January 1, 1990, and July 6, 2005, and the acres of wetland mitigation required for these impacts. This information was generated by the Savannah District Regulatory Analysis and Management System (RAMS) database. There has undoubtedly been some additional loss of wetland during this time period from activities not regulated by the Corps, but no data exist on these losses.

Table 4. Wetland Impacts from January 1, 1990, through July 6, 2005, in the Counties Included in the Fort Stewart Watersheds

Wetland Acres Requested	Wetland Acres Permitted	Wetland Acres Mitigated
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County	Acres			
Bryan	111509	38.15	41.81	236.29
Bulloch	81797	114.67	119.28	205.28
Chatham	162459	701.13	666.91	4298.24
Effingham	127318	175.13	205.08	633.59
Emanuel	42158	67.78	67.78	269.26
Jenkins	35292	55.74	55.74	230.22
Screven	85270	47.99	57.19	92.08
Liberty	139558	55.74	55.74	230.22
Long	93629	117.9	117.9	1343.68
McIntosh	149942	16.86	16.85	69.64
Appling	39963	34.02	34.02	70.39
Evans	12493	21.28	21.28	34.81
Glynn	134011	210.8	210.13	1496.65
Jeff Davis	23394	2.68	2.68	3.75
Montgomery	14426	8.78	8.78	6.96
Tattnall	33959	31.49	31.49	73.08
Toombs	21718	3.45	3.45	2.43
Wayne	99669	189.6	188.5	1499.45
Candler	17051	4.98	10.48	4.78
Emanuel	42158	67.78	67.78	269.26
	1467774	1965.95	1982.87	11070.06
TOTALS				

In summary, the Corps can document that in 1990 there were approximately 1,467,774 acres of wetlands in HUC's 03070106, 03060202, 03060204, and 03060203 within Bryan, Bulloch, Chatham, Effingham, Emanuel, Jenkins, Screven, Liberty, Long, McIntosh, Appling, Evans, Glynn, Jeff Davis, Montgomery, Tattnall, Toombs, Wayne, Candler and Emanuel Counties. By deducting 1,982.87 acres of wetland impacts since 1990 (RAMS database), there are at least 1,465,792 acres of wetlands remaining in this area. This amounts to a loss of 0.2 percent of the wetlands in HUC's 03070106, 03060202, 03060204, and 03060203 since 1990. The largest percent loss by county would be Chatham County, where 0.4 % of the wetlands have been impacted since 1990. The Corps can also document that 11,070.06 acres of wetland mitigation were provided to offset the post 1990 wetland impacts in this area.

In addition to the impacts described above, Fort Stewart itself has experienced some wetland impacts associated with various projects since the close of the review period in 2005. Some major restoration projects, employed to mitigate wetland impacts, have also occurred within and after the review period, but have not been integrated into the data described above. The effects of

these projects are outlined in the table below.

Table 5. Fort Stewart Wetland Impacts Post-2005

	Wetland	Wetland	Wetland
	Acres	Acres	Acres
County	Requested	Permitted	Mitigated
Bryan	4.23	4.23	0
Liberty	214.77	214.77	3230
Long	0	0	0
Evans	0	0	0
Tattnall	0	0	0
TOTALS	219	219	3230

The following is a list of Fort Stewart projects authorized by the Corps within Fort Stewart watersheds outside the review period.

a. Department of the Army Permit 940000880 (modification), issued June 29, 1995, authorized the enhancement of approximately 1,300 acres of wetlands in the A11 training area of Fort Stewart, to mitigate for 2.1 acres of wetlands impacted by the earlier construction (under the same Permit number) of rail pass tracks in an adjacent training area.

b. Department of the Army File Number 200007600 refers to the restoration and enhancement of approximately 1,200 acres of wetlands to create Fort Stewart's Canoochee Creek Reservoir (or "Pond 4") Mitigation Bank.

c. Department of the Army Permit 200601665, issued December 6, 2006, authorized impacts to 4.23 acres of wetlands in Bryan County for improvements to the road in Fort Stewart's existing Convoy Live Fire Range. Mitigation consisted of a debit of 12.7 credits from the Installation's on-post wetland mitigation bank.

d. Department of the Army Permit 200501852, issued March 12, 2007, authorized impacts to 206.9 acres of wetlands in Liberty County for the construction of the Digital Multipurpose Range Complex. 4.0 acres of jurisdictional wetland were impacted through direct filling; the remaining 202.9 acres were impacted through cutting of vegetation to meet line-of-sight requirements.

Mitigation was accomplished through the Strum Bay Restoration, which (under the same Permit) restored and enhanced approximately 730 acres of wetlands adjacent to the project area by correcting previously impacted hydrology.

e. One project for which a DA permit is pending, vehicle maintenance facilities in support of 2nd BCT operations, will impact a total of 7.87 acres of wetlands. Although no DA Permit number has yet been assigned to these projects as they are still in the planning stages, the Fort Stewart Wetland Mitigation Bank has been debited in anticipation of them, so the impacts have been included in this analysis.

Fort Stewart has implemented an aggressive mitigation program in order to offset wetland impacts on the Installation. These projects include wetland enhancement and wetland restoration projects on large scale areas that provide higher quality mitigation than smaller patchwork single permit mitigation products. The following are current wetland mitigation projects located within the boundaries of Fort Stewart:

Pond 4 Mitigation Bank (USACE File Number 200007600): This single user bank was permitted for projects located within the boundaries of the Fort Stewart Installation. Approximately 1200 acres of wetlands were restored within the Canoochee Creek and Strum Bay wetland systems. This project is mostly comprised of deepwater and hardwood swamp habitat. Additional areas upstream of Pond 4 are currently being studied that would increase the total amount of wetland enhancement and restoration (see Strum Bay Mitigation Area below).

A-11 Mitigation Area (USACE File Number 940000880): This project specific mitigation area is comprised of approximately 1300 acres of wetland enhancement/restoration. Hydrologic enhancement/restoration was completed through the reintroduction of hydrology that had been previously diverted around the project area. It is comprised mostly of pine/cypress flatwoods and hardwood drainages.

Strum Bay Mitigation Area (USACE File Number 200501852): This project specific mitigation was originally developed to mitigate impacted associated with the DMPPRC. Subsequent studies realized a much larger restoration/enhancement was obtained by re-directing hydrology back into the Strum Bay wetland system. This project has now identified enhancement and restoration of wetland hydrology to approximately 730 acres. This portion of the Strum Bay wetland system is located upstream from the Pond 4 Mitigation Bank, thus creating additional benefits to water quality and habitat to the entire Strum Bay wetland system and Pond 4 Mitigation Bank.

Summary: These effects, when combined with other projects in the ROI, do have the potential to result in adverse cumulative impacts; however, it is expected that other projects in the ROI will be implemented as follows: projects will use erosion control measures, silt fencing, and other Best Management Practices; sufficient storm water management structures will be constructed as part of new construction; erosion and sedimentation control plans will be filed in accordance with Georgia's Sedimentation Pollution Control Act; and all projects will be conducted in accordance/in compliance with federal, state, and local laws. This includes obtaining and adhering to appropriate wetland permits, including compliance with compensatory wetland mitigation requirements outlined in the wetland permit(s).

2. Water Quality: Water quality is affected by changes to the environment (referred to as stressors) that adversely affect aquatic life or impair human uses of a water body. Point sources are municipal and industrial wastewater discharge. Non-point sources consist of sediment, litter, bacteria, pesticides, fertilizers, metals, oils, grease, and a variety of other pollutants that are washed from rural and urban lands by storm water. Expected growth in population and employment in the basin will mean more potential stress from storm water runoff as well as non-point source loading.

Wetland Loss: The impacts to wetlands discussed above would be expected to have an adverse impact on water quality due to the loss of associated aquatic functions (flood water retention, filtration, contaminate removal, sediment retention, etc.). The mitigation for these impacts would help to offset these impacts to water quality.

Point Source Discharges: Impacts from municipal wastewater, agricultural, and industrial discharges were greater prior to the 1970's. Due to increased regulation, these discharges have been reduced but continue to introduce pollutants into the system, which lower water quality when considered cumulatively. Georgia's "2004 303(d) List" for Bryan, Evans, Liberty, Long, and Tattnall counties have 3 waterways listed as impaired or partially impaired; they are listed in the table below with the causes of impairment.

Table 6.

Waterway	Cause of Impairment
Canoochee River	Trophic-weighted residue value (mercury in fish tissue)

Peacock Creek	Low dissolved oxygen and fecal coliform bacteria
Taylor's Creek	Low dissolved oxygen

Non-point Source Discharges: Residential, commercial and industrial development results in an increase in impervious surfaces (roof tops, paved roads, parking lots, etc.), which affects storm water discharges. Development results in an increase in non-point source contaminant loading through associated increases in urban landscaping (pesticides and fertilizers), increased traffic (oil, grease and metals), and other associated activities. There would be an anticipated incremental increase in adverse impacts to water quality as impervious surfaces increase. The following table is a summary of anticipated population growth-induced increases in impervious surfaces in the Altamaha watershed. The amount of impervious surface coverage is increasingly recognized as a valuable predictor of overall water quality within a watershed. In general, as population increases, so does impervious surface. As impervious surface area increases, water quality decreases. Table 4.1 shows population and impervious surface area growth over time for the Lower Ogeechee watershed; Table 4.2 shows population and impervious surface area growth over time for the Canoochee watershed; Table 4.3 shows population and impervious surface area growth over time for the Little Ogeechee watershed; Table 4.4 shows population and impervious surface area growth over time for the Altamaha watershed.

The impervious surface data was generated by the USEPA and provided to the Corps via a table titled "Total Impervious Area Calculations by 12-Digit HUC Watershed (based upon National Land Cover Data, 1993). Using simple linear regression analysis, the Corps utilized county population projection data to estimate percent increase in impervious surface, by county. The data contained in Tables 4.1 thru 4.4 indicates that as the population of each county continues to increase, there will be an associated increase in impervious surfaces. All counties in the study area would be anticipated to experience an increase of less than one percent impervious surface by the year 2050. However, each county is responsible for regulating non-point source storm water discharges pursuant to Section 402 of the CWA. These county storm water management programs should help to minimize the anticipated adverse impacts to water quality.

Table 7 Projected Population Growths and Associated Approximate Impervious Surface Increases Lower Ogeechee - HUC 03060202

County		Year						
		2007	2008	2010	2020	2030	2040	2050
Bryan	Population / square mile	66	69	70	88	106	124	142
	% impervious Surface							
	Coverage	2.33	2.37	2.39	2.68	2.97	3.26	3.55
Bulloch	Population / square mile	96	98	101	120	139	157	176
	% impervious Surface							
	Coverage	2.81	2.84	2.89	3.20	3.50	3.79	4.09
Chatham	Population / square mile	385	389	386	410	434	457	481
	% impervious Surface							
	Coverage	7.33	7.39	7.35	7.71	8.07	8.42	8.78
Effingham	Population / square mile	105	108	111	142	173	204	234
	% impervious Surface							
	Coverage	2.95	3.00	3.05	3.55	4.04	4.53	5.00
Emanuel	Population / square mile	32	33	33	34	36	37	38
	% impervious Surface							
	Coverage	1.77	1.79	1.79	1.81	1.84	1.85	1.87
Jenkins	Population / square mile	24	24	25	25	25	25	26
	% impervious Surface							
	Coverage	1.64	1.64	1.66	1.66	1.66	1.66	1.68
Screven	Population / square mile	23	23	24	25	26	27	28
	% impervious Surface							
	Coverage	1.63	1.63	1.64	1.66	1.68	1.69	1.71
Watershed Average								
Lower Ogeechee	Population / square mile	104	106	107	121	134	147	161
	% impervious Surface							
	Coverage	2.92	2.95	2.97	3.18	3.39	3.60	3.81

Table 8 Projected Population Growths and Associated Approximate Impervious Surface Increases
Canoochee - HUC 03060203

County		Year						
		2007	2008	2010	2020	2030	2040	2050
Bryan	Population / square mile	66	69	70	88	106	124	142
	% impervious Surface							
	Coverage	2.33	2.37	2.39	2.68	2.97	3.26	3.55
Bulloch	Population / square mile	96	98	101	120	139	157	176
	% impervious Surface							
	Coverage	2.81	2.84	2.89	3.20	3.50	3.79	4.09
Candler	Population / square mile	42	43	44	50	56	62	67
	% impervious Surface							
	Coverage	1.94	1.95	1.97	2.07	2.16	2.26	2.34
Emanuel	Population / square mile	32	33	33	34	36	37	38
	% impervious Surface							
	Coverage	1.77	1.79	1.79	1.81	1.84	1.85	1.87
Evans	Population / square mile	61	62	65	74	84	93	102
	% impervious Surface							
	Coverage	2.24	2.26	2.31	2.46	2.62	2.76	2.91
Jenkins	Population / square mile	24	24	25	25	25	25	26
	% impervious Surface							
	Coverage	1.64	1.64	1.66	1.66	1.66	1.66	1.68
Liberty	Population / square mile	100	97	105	109	114	119	124
	% impervious Surface							
	Coverage	2.87	2.83	2.95	3.02	3.10	3.18	3.26
Long	Population / square mile	28	28	31	38	46	53	60
	% impervious Surface							
	Coverage	1.71	1.71	1.76	1.87	2.00	2.11	2.23
Tattnall	Population / square mile	47	48	50	57	63	70	76
	% impervious Surface							
	Coverage	2.02	2.03	2.07	2.18	2.28	2.39	2.49
Watershed Average								
Canoochee	Population / square mile	55	56	58	66	74	82	90
	% impervious Surface							
	Coverage	2.15	2.16	2.20	2.33	2.46	2.58	2.71

Table 9 Projected Population Growths and Associated Approximate Impervious Surface Increases Little Ogeechee - HUC 03060204

County		Year						
		2007	2008	2010	2020	2030	2040	2050
Bryan	Population / square mile	66	69	70	88	106	124	142
	% impervious Surface							
	Coverage	2.33	2.37	2.39	2.68	2.97	3.26	3.55
Chatham	Population / square mile	385	389	386	410	434	457	481
	% impervious Surface							
	Coverage	7.33	7.39	7.35	7.71	8.07	8.42	8.78
Effingham	Population / square mile	105	108	111	142	173	204	234
	% impervious Surface							
	Coverage	2.95	3.00	3.05	3.55	4.04	4.53	5.00
Liberty	Population / square mile	100	97	105	109	114	119	124
	% impervious Surface							
	Coverage	2.87	2.83	2.95	3.02	3.10	3.18	3.26
Long	Population / square mile	28	28	31	38	46	53	60
	% impervious Surface							
	Coverage	1.71	1.71	1.76	1.87	2.00	2.11	2.23
McIntosh	Population / square mile	20	20	21	24	26	29	32
	% impervious Surface							
	Coverage	1.58	1.58	1.59	1.64	1.68	1.72	1.77
Watershed Average								
Ogeechee Coastal	Population / square mile	117	119	121	135	150	164	179
	% impervious Surface							
	Coverage	3.13	3.15	3.18	3.41	3.64	3.87	4.10

Table 10 Projected Population Growths and Associated Approximate Impervious Surface Increases
Altamaha - HUC 03070106

Appling	Population / square mile	35	35	36	38	41	43	46
	% impervious Surface Coverage	1.82	1.82	1.84	1.87	1.92	1.95	2.00
Evans	Population / square mile	61	62	65	74	84	93	102
	% impervious Surface Coverage	2.24	2.26	2.31	2.46	2.62	2.76	2.91
Glynn	Population / square mile	128	130	129	141	152	164	175
	% impervious Surface Coverage	3.32	3.36	3.34	3.53	3.71	3.90	4.07
Jeff Davis	Population / square mile	40	40	40	42	44	47	49
	% impervious Surface Coverage	1.90	1.90	1.90	1.94	1.97	2.02	2.05
Long	Population / square mile	28	28	31	38	46	53	60
	% impervious Surface Coverage	1.71	1.71	1.76	1.87	2.00	2.11	2.23
McIntosh	Population / square mile	20	20	21	24	26	29	32
	% impervious Surface Coverage	1.58	1.58	1.59	1.64	1.68	1.72	1.77
Montgomery	Population / square mile	36	36	38	42	45	49	53
	% impervious Surface Coverage	1.84	1.84	1.87	1.94	1.98	2.05	2.11
Tattnall	Population / square mile	47	48	50	57	63	70	76
	% impervious Surface Coverage	2.02	2.03	2.07	2.18	2.28	2.39	2.49
Toombs	Population / square mile	75	76	76	81	87	92	97
	% impervious Surface Coverage	2.47	2.49	2.49	2.57	2.67	2.75	2.83
Wayne	Population / square mile	45	45	46	52	58	63	69
	% impervious Surface Coverage	1.98	1.98	2.00	2.10	2.20	2.28	2.37
Watershed Averages								
Altamaha	Population / square mile	52	52	53	59	65	70	76
	% impervious Surface Coverage	2.09	2.10	2.12	2.21	2.30	2.39	2.48

Summary: This effect, when combined with other projects in the geographical area of influence, does have the potential to result in adverse cumulative impacts; however, it is expected that future projects would be implemented as follows: projects will use erosion control measures, silt fencing, and other BMPs; sufficient storm water management structures will be constructed as part of new construction; erosion and sedimentation control plans will be filed in accordance with Georgia's Sedimentation Pollution Control Act; and all projects will be undertaken in accordance with federal, state, and local laws.

Fort Stewart's role in general and project-specific oversight to ensure compliance with environmental legislation and the overall health of the local ecosystem have certainly played a role in mitigating adverse impacts to water quality. Also, the use of this large (~ 280,000 acres) area of land for military training has and will continue to ensure that the vast majority of the Installation remains managed wilderness. This allows natural processes to operate in support of water quality to a degree not seen in many surrounding areas which have experienced a great deal of development, and is the primary contributor to good water quality relative to those areas. Also, it must be noted that many projects related to military training (ex: firing ranges) do not feature impervious surfaces to the same degree as many civilian and private projects, and will not experience human activity and traffic of the same frequency and intensity, which might otherwise worsen local water quality. Furthermore, through the oversight of Environmental Compliance Officers, Army units self-monitor their training activities to avoid and minimize potentially harmful activities. A 1999 water quality survey performed by Fort Stewart determined that the quality of water leaving Fort Stewart's geographic boundaries was of equal or better quality than that which entered the Installation.

In view of the above, the Corps determined that the proposed project, with proposed special permit conditions, would have minimal impacts on water quality when considered alone or in concert with the other past, present and reasonably foreseeable future projects in the basin.

3. Aquatic Species: Permitted impacts to wetlands and water quality as discussed above have affected fish and other aquatic species such as mussels and aquatic insects.

The proposed projects would not result in a direct adverse impact to any stream or river, or to aquatic species in the waterways. Rather, the project would result in an unavoidable impact to 43.6 acres of wetland, and a loss of the aquatic habitat function provided by these wetlands. However, this project-related wetland loss would be minor when considered cumulatively with

all other past and planned wetland losses discussed above. In addition, the applicant's proposed wetland mitigation plan would help to offset the aquatic habitat function loss that would result from this project. Furthermore, Fort Stewart Fish & Wildlife monitors and maintains the quality of Fort Stewart aquatic habitats as part of their fisheries program.

Overall, the proposed projects will not have a significant impact on Fort Stewart aquatic habitats and species.

4. Compensatory Mitigation: As defined in the NEPA regulations, compensatory mitigation is "*compensation for the impact by replacing or providing substitute resources or environments*" (40 CFR Part 1508.20). The Installation utilized the Compensatory Mitigation Rule (33 CFR Part 332) when developing its mitigation plan for the proposed FY11 Multipurpose Machine Gun Range, FY11 Infantry Platoon Battle Course, FY13 Qualification Training Range, and the FY13 Digital Multipurpose Training Range. For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs). Similar to the process outlined in the Compensatory Mitigation Rule, the Installation's standard procurement processes conducts market research in accordance with the Federal Acquisition Regulation. This research requirement as it relates to contracting of off-post wetland credit purchases includes evaluating the current market and availability of primary and secondary service area mitigation credits. This process will also be implemented when seeking mitigation options for ranges beyond FY11.

Proposed project: The proposed project supporting military training will adversely impact 43.6 acres of Jurisdictional Wetland. To mitigate for these impacts the applicant would purchase 336.79 mitigation credits from a Corps approved mitigation bank that services the project area. Additionally, some small projects will be mitigated through debits from the Installation's on-post wetland mitigation bank. As such, any adverse impacts to wetlands and other waters of the U.S. caused by this project would be offset by the proposed mitigation.

Summary: The main public detriment that would result from this project would be the loss of 43.6 acres of jurisdictional wetlands. Many of the wetland functions and values important to the public, such as flood attenuation, sediment retention, fish and wildlife habitat, and others, would be replaced by the applicant's mitigation plan. Additionally, Fort Stewart's past mitigation efforts (approximately 3,230 acres) have adequately offset impacts within the boundaries Fort Stewart. Mitigation for the current projects will be offset through additional mitigation efforts, including the use of off-site Corps approved wetland mitigation banks. The mitigation plan

would also provide adequate compensation for the impacted wetlands through the implementation of wetland creation, enhancement and preservation. The proposed projects would not impact federal or state protected species or critical habitat. Cultural resources have been considered and it has been determined that they would not be impacted. Overall, the public benefits of the proposed project would outweigh the public detriments.

In view of the above, the Corps has determined that the proposed project, with proposed special permit conditions, would not have a significant impact on wetlands and/or other waters of the U.S. when considered alone or in concert with the other past, present and reasonably foreseeable future projects in the Fort Stewart watersheds.

F. SECONDARY/INDIRECT IMPACTS: See Section E above and the RGCEIS, prepared by Fort Stewart.

G. IRREVERSIBLE AND IRRETRIEVABLE RESOURCE COMMITMENTS: Authorization of the applicant's preferred alternative, or any other build alternative, could result in an irreversible and irretrievable commitment of a range of natural, physical, human and fiscal resources. The fossil fuels, labor and construction materials that would be expended, if the project is constructed, are generally not considered irretrievable resources. In addition, these resources are not in short supply and their use would not have an adverse effect upon their continued availability.

H. EFFECT ON FEDERAL PROJECTS: We have determined the proposed activity would not have an adverse effect on any Federal Project (33 CFR 320.4(g)).

PART V - PERMIT ACTION ALTERNATIVES

A. TO ISSUE THE PERMIT IN ACCORDANCE WITH THE PLANS SUBMITTED BY THE APPLICANT: This course of action by itself would be inappropriate because it does not include provision for special conditions (See D. below).

B. TO DENY THE REQUEST FOR A PERMIT: Denial of the permit would not be an appropriate course of action. The proposed activity would not have significant adverse effects on navigation, the environment or other public interest factors.

C. TO ISSUE THE PERMIT AFTER SUBMITTAL OF MODIFIED PLANS BY THE

APPLICANT WITH SPECIAL CONDITIONS: This course of action would not be warranted. Our review of the applicant's plans and alternatives showed the applicant's proposed activity to be the most practicable way to accomplish the applicant's overall purpose.

D. TO ISSUE THE PERMIT IN ACCORDANCE WITH THE PLANS SUBMITTED BY THE APPLICANT WITH SPECIAL CONDITIONS: This would be the appropriate course of action to follow. In order to protect the public interest the following special conditions would be placed on any permit issued:

1. All dredged or borrowed material used as fill on this project will be from clean, uncontaminated sources and free from cultural resources.
2. That no construction activity or stockpiling will occur in waters of the United States, including wetland areas, outside of the areas authorized for filling under this permit.
3. Prior to the commencement of construction activities for this project, the limits of the proposed fill areas in jurisdictional waters shall be clearly flagged and staked by you and/or your contractors. All construction personnel shall be shown the location(s) of all wetland and/or stream areas outside of the construction area to prevent encroachment from heavy equipment into these areas.
4. Borrow site or sites for stockpiling fill dirt shall be prohibited within 200 feet of streambanks, 50 feet of wetlands and open waters or elsewhere runoff from the site would increase sedimentation in waters of the United States unless specifically authorized by this permit. Normal grading activities such as cutting and filling within 200 feet of streams or 50 feet of wetlands/open waters are authorized.
5. Construction debris, liquid concrete, old riprap, old support materials, or other litter shall not be placed in streams or in areas where migration into streams and/or wetlands could reasonably be expected.
6. Staging areas and equipment maintenance areas will be located at least 200 feet from streambanks to minimize the potential for wash water, petroleum products, or other contaminants from construction equipment entering the streams.
7. The permittee shall ensure that the project's master drainage plan is designed and

implemented to avoid inadvertent drainage of wetlands and inadvertent water diversion resulting in a reduction of hydrology in wetlands. The permittee shall also ensure that secondary road ditches and/or small after-project drainage ditches do not inadvertently impact wetlands or waters of the US.

8. The permittee shall minimize bank erosion and sedimentation in construction areas by utilizing Best Management Practices for stream corridors, installing and maintaining significant erosion and sediment control measures, and providing daily reviews of construction and stream protection methods. Check dams and riprap placed in streams and wetlands as erosion control measures are considered a fill and not authorized under this permit unless they were specifically authorized by this permit.

9. All work conducted under this permit shall be located, outlined, designed, constructed and operated in accordance with the minimal requirements as contained in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. Utilization of plans and specifications as contained in "Manual for Erosion and Sediment Control, (Latest Edition)," published by the Georgia Soil and Water Conservation Commission or their equivalent will aid in achieving compliance with the aforementioned minimal requirements.

10. You shall obtain and comply with all appropriate Federal, state, and local authorizations required for this type of activity. A stream buffer variance may be required. Variances are issued by the Director of the Georgia Environmental Protection Division (EPD), as defined in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. It is our understanding that you may obtain information concerning variances at the Georgia EPD's web site at www.gaepd.org or by contacting the Watershed Protection Branch at (404) 675-6240.

11. If you or your contractors discover any federally listed threatened or endangered species and/or their habitat while accomplishing the activities authorized by this permit, you must immediately STOP work in the area and notify the issuing office of what you have found. We will initiate the Federal and state coordination required to determine if the species and/or habitat warrant further consultation with the USFWS.

12. Prior to the commencement of construction activities for this activity, the permittee shall insure that this project complies with all applicable rules, requirements, and/or regulations of the FEMA and/or the Georgia Floodplain Management Office with regard to construction activities in designated floodplains and/or floodways prior to commencement of work activity, to

include revisions to the National Flood Insurance Program maps if required.

13. Prior to the commencement of any work in jurisdictional waters of the United States for this activity, you will purchase wetland mitigation credits from an approved wetland mitigation bank. You or the mitigation bank sponsor must provide this office with documentation of this purchase before any work may commence. The notice should reference the USACE file number assigned to this project.

14. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the NRHP.

15. The permittee, US Army Fort Stewart, is the lead federal agency for this proposed action. The permittee shall meet all lead federal agency responsibilities pursuant to Section 7 of the Endangered Species Act, prior to any work occurring in waters of the US subject to the jurisdiction of the USACE.

16. The permittee, US Army Fort Stewart, is the lead federal agency for this proposed action. Fort Stewart shall meet all lead federal agency responsibilities pursuant to Section 106 of the National Historic Preservation Act, prior to any work occurring in waters of the US subject to the jurisdiction of the USACE.

17. The site design for this project has not been finalized. Authorized wetland impacts are based on a standard range design. Prior to conducting any work in wetlands on this project site, the permittee shall submit final site development plans to the USACE for review and approval. No work in wetlands can occur until the USACE has reviewed and approved the final plan in writing; this concurrence letter needs to document that the 404(b)(1) process has been adequately demonstrated. It is anticipated that once final design is completed, there will be a minor reduction in the amount of wetland area that will be impacted by the project. This anticipated change in the footprint of authorized wetland impact is authorized under this permit and modification of the permit will not be required for this change in site design.

18. If a conditioned Water Quality Certification has been issued for your project, you must comply with conditions specified in the certification as Special Conditions to this permit.

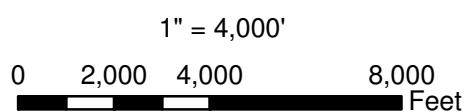
PART VI – COURSE OF ACTION FIGURES



Figure Redacted



VICINITY MAP - PREFERRED COA



PROJECT: DMPTR - DIGITAL
MULTIPURPOSE TRAINING RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

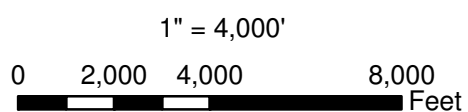
FIGURE: 1 OF 4

DATE: NOVEMBER 2009

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VICINITY MAP - CONSIDERED COAS



PROJECT: DMPTR - DIGITAL
MULTIPURPOSE TRAINING RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

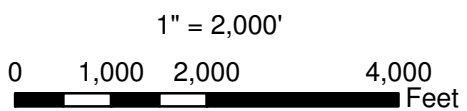
FIGURE: 2 OF 4

DATE: NOVEMBER 2009

Figure Redacted



LOCATION MAP - PREFERRED COA



PROJECT: DMPTR - DIGITAL
MULTIPURPOSE TRAINING RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

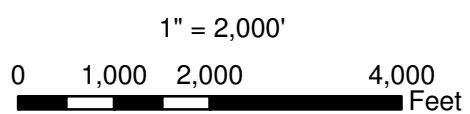
FIGURE: 3 OF 4

DATE: NOVEMBER 2009

Figure Redacted



LOCATION MAP - COA 2



PROJECT: DMPTR - DIGITAL
MULTIPURPOSE TRAINING RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

FIGURE: 4 OF 4

DATE: NOVEMBER 2009

PART VII – PERMIT FIGURES

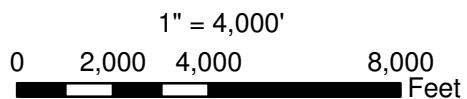
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PURPOSE: CONSTRUCT, OPERATE,
AND MAINTAIN A STANDARD DIGITAL
MULTIPURPOSE TRAINING RANGE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

PROJECT VICINITY MAP



APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: STRUM BAY

COUNTY: LIBERTY

FIGURE: 1 OF 6

DATE: NOVEMBER 2009

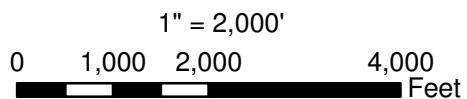
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PURPOSE: CONSTRUCT, OPERATE,
AND MAINTAIN A STANDARD DIGITAL
MULTIPURPOSE TRAINING RANGE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

PROJECT LOCATION MAP



APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: STRUM BAY

COUNTY: LIBERTY

FIGURE: 2 OF 6

DATE: NOVEMBER 2009



— Figure Redacted

PURPOSE: CONSTRUCT, OPERATE, AND MAINTAIN A
STANDARD DIGITAL MULTIPURPOSE TRAINING
RANGE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

EXISTING CONDITIONS

SCALE: 1" = 1,500'

0 750 1,500 3,000 Feet

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: STRUM BAY

COUNTY: LIBERTY

FIGURE: 3 OF 6

DATE: NOVEMBER 2009



Figure Redacted

PURPOSE: CONSTRUCT, OPERATE, AND MAINTAIN A
STANDARD DIGITAL MULTIPURPOSE TRAINING
RANGE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

PROPOSED CONDITIONS

SCALE: 1" = 1,500'

0 750 1,500 3,000 Feet

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: STRUM BAY

COUNTY: LIBERTY

FIGURE: 4 OF 6

DATE: NOVEMBER 2009

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PURPOSE: CONSTRUCT, OPERATE, AND MAINTAIN A STANDARD DIGITAL MULTIPURPOSE TRAINING RANGE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

CROSS-SECTION

NOT TO SCALE

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: STRUM BAY

COUNTY: LIBERTY

FIGURE: 5 OF 6 **DATE:** NOVEMBER 2009

Figure Redacted

CASE DOCUMENT FOR: INFANTRY PLATOON BATTLE COURSE
APPLICATION NUMBER 200900884
FOR A DEPARTMENT OF THE ARMY PERMIT
BY
FORT STEWART ARMY INSTALLATION, SAVANNAH, GEORGIA

PART I - INTRODUCTION

A. NAME AND ADDRESS OF APPLICANT:

U.S. Army, Fort Stewart Army Installation
Directorate of Public Works
1550 Frank Cochran Drive, Bldg. 1137
Fort Stewart, Georgia 31414

B. APPLICATION NUMBER: 200900884

C. LOCATION OF PROPOSED ACTIVITY: The site is located at Fort Stewart, in Bryan County, Georgia. The site is located within the C-1 Training Area (in the vicinity of latitude 32° 4' 35" north and longitude 81° 33' 20" west). A location map is provided in Appendix A to this document.

D. PROJECT DESCRIPTION: The Infantry Platoon Battle Course (IPBC) is a small caliber range used to support infantry platoon live-fire collective training to test infantry platoons (mounted or dismounted) on the skills necessary to conduct tactical movement techniques, and detect, identify, engage, and defeat stationary and moving infantry and armor targets in a tactical array. In addition to live fire, this range is used to train on sub-caliber and/or laser devices and can support the live-fire collective training needs of active and reserve component infantry platoons.

The IPBC includes eight mortar simulation device emplacements, six stationary armor targets (SATs), one moving armor target (MAT), 43 stationary infantry targets (SITs), 14 moving infantry targets (MITs), one trench obstacle, nine machine-gun bunkers (with sound effects simulator), two landing zones, one assault/defend house, two 800-square-foot buildings, an air-vault latrine facility, ammo breakdown area, range tower, enclosed bleachers, and a covered mess facility. The IPBC footprint totals 1000 acres and would undergo selective tree removal (no clear-cut) to enhance training realism and for target placement. Landing and drop zone areas

would be completely cleared.

The applicant has completed the 90% site design for the above described range project. The standard site layout for this type of range would require the filling and/or mechanized clearing of all 5.39 acres of bottomland hardwood wetlands on the 71-acre project site. The applicant will likely be able to avoid some of the wetlands on the project site as final site design is completed for the project. However, for the purposes of this permit evaluation, the US Army Corps of Engineers (USACE) will assume that all 5.39 acres of wetlands on the proposed project site would be impacted. In addition, the applicant's proposed wetland mitigation plan is to purchase 40.35 mitigation credits to offset unavoidable impact to 5.39 acres of wetlands.

E. BASIC PURPOSE AND NEED: The basic purpose of the proposed project is to provide the Soldiers of Fort Stewart, Reserve and National Guard units with critical training needs for both active and reserve component units that train on the Installation. This range is an essential element of infantry platoon training and readiness requirements prior to deployment into a theater of operations. There is not an IPBC at Fort Stewart to support the live-fire training of infantry platoons assigned to active component units stationed there or those units that habitually train on the Installation.

F. APPLICANT'S SUPPLEMENTAL INFORMATION: The following information is part of the administrative record for the project.

1. Project Narrative
2. Project Purpose and Need
3. Description of Resources Occurring within the Project Area, Potential Impacts, and Mitigation
4. Vicinity Map
5. Additional Studies and Response to Comments:

G. PROPOSED WORK SUBJECT TO THE JURISDICTION OF THE US ARMY CORPS OF ENGINEERS: The applicant proposes to perform work in, or affecting waters of the United States.

H APPLICABLE STATUTORY AUTHORITY: The applicant is making application pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344).

PART II - COORDINATION

A. JOINT PUBLIC NOTICE (JPN): On April 21, 2010, the United States Army Corps of Engineers Savannah District (USACE) issued a JPN on the proposed work. Copies of the notice were provided to federal, state, and local agencies and the public. The notice was also posted on USACE public web page.

B. RESPONSE TO JOINT PUBLIC NOTICE: A summary of the comments received in response to the Joint Public Notice is presented in Table 1 below.

Table 1. Summary of Comments

COMMENTOR	OBJECT	3(b) Y/N	NO OBJECT	NO OBJECT W/CONDITION	DATE
Federal Agencies					
1. National Marine Fisheries Services			X		05-24-10
2. US Environmental Protection Agency (EIS comments)				X	04-21-10
3. US Fish and Wildlife Service					*
State of Georgia					
4. State Clearing House					*
5. Coastal Resources Division, Federal Consistency					*
6. Environmental Protection Division					*
Other					
7. Southern Environmental Law Center - Ogeechee River Keeper				X	05-21-10

* No date indicates no comment received.

C. DISCUSSION OF RESPONSES:

1. National Marine Fisheries Service (NMFS): By letter dated May 24, 2010, the NMFS stated “Based on the information in the public notice, the proposed project would not occur in the vicinity of essential fish habitat designated by the South Atlantic Fishery Management Council or NMFS. Present staffing levels preclude further analysis of the proposed activities and no further action is planned. This position is neither supportive of nor in opposition to your authorization of the proposed work.”
2. Georgia State Clearinghouse: By memorandum dated June 8, 2010, the Georgia State Clearinghouse stated that the request has been found to be consistent with state goals, policies, plans, objectives, and programs, with which the state is concerned.
3. Environmental Protection Agency (EPA): There were no comments received pursuant the USACE Joint Public Notice dated April 21, 2010, from the EPA. However, Fort Stewart did receive comments and questions from the EPA Region 4, pursuant to the Draft Environmental Impact Statement (EIS) for Training Range and Garrison Support Facilities Construction and Operation at Fort Stewart, Georgia. The following are EPA comments relevant to the Section 404 permit notifications:

a. Issue 1: EPA is currently reviewing a joint public notice dated April 21, 2010, for four individual permits for four projects (DMPTR, IPBC, MPMGR and QTR) with a total of 185.9 acres of wetland impacts. This is a substantial level of wetland impacts, particularly in relation to recently permitted impacts throughout Georgia.

(1) Applicants Response: Fort Stewart avoids and minimizes wetlands impacts when possible. The implementation of the actions proposed in the preferred alternative (Alternative B Sitings) has the potential to negatively impact up to 0.2% of the Installation’s nearly 91,000 acres of wetlands. More importantly, of the “up to 0.2% of the Installation’s wetlands being impacted,” most of those impacts are not the result of adding fill to the wetlands, but rather vegetative maintenance for line-of-sight and grubbing/grading for target placement. As stated earlier in this reply, the Installation anticipates wetland impacts will be much less than projected through further avoidance and minimization incorporated during the design phases of each project after the site is selected. It is important to note, that despite the large amount of military training activity that occurs on Fort Stewart, because of the Installation’s proactive efforts to avoid,

enhance, and mitigate wetlands, its wetlands remain of a high quality, retaining and transmitting large amounts of fresh water and providing habitat for countless local species. Proactive environmental stewardship programs also help to keep our wetlands pristine. As discussed in opening paragraphs in Chapter 3 of the DEIS, Fort Stewart's Integrated Training Area Management (ITAM) program conducts land rehabilitation through the construction of low water crossings and Soldier training related to sustainability of Fort Stewart lands.

Much of the avoidance and minimization takes place before actual site selection. Training ranges of this kind have fairly specific requirements and it is not always possible to build them without impacting every wetland in the footprint. Site designers may alter certain aspects of a proposed range in response to environmental concerns during various stages of the design process, typically reviewed at the 10%, 35%, 60%, 90%, and 100% stages of completion, if they can do so while still meeting the operational and training requirements of the range. For example, the currently on-going design process reduced the wetland impacts from the IPBC to a third of what they were at the time of writing the DEIS. Impacts from the MPMGR have also been slightly reduced. Several proposed range projects were sited without wetland impacts of any kind. It is hoped that impacts from the QTR and DMPTR may be reduced, but as they are not yet in the design process this cannot be precisely determined.

It is also important to note that not all of the 185.9 acres (now 179.03) of wetlands will actually be cleared, grubbed, and/or filled. Rather, that is a maximum projected "up to" amount. The actual number of acres impacted will likely be reduced further at each design level for target placement, etc.). Therefore, although the "permitted impacts" of this project may seem large in relation to other recently permitted impacts in Georgia, they do not represent substantial impacts to Fort Stewart wetlands resources.

(2) USACE Position: The combined wetland impact associated with the four proposed range projects has been reduced from 185.9 acres to 179.03 acres. In addition, as these projects approach final design, combined wetland impacts are expected to be reduced further. With regard to the amount of proposed wetland impact for these four projects relative to projects recently permitted by the Savannah District, there have been residential, commercial and reservoir projects authorized within the past five years with impacts in excess of 100 acres.

Based on the extensive experience of the USACE in review of permit applications for project located in the lower coastal plain of Georgia, most sites are typically comprised by approximately thirty permit wetlands. Fort Stewart is typical of site in the lower coastal plain and is also approximately thirty percent wetlands. Fort Stewart is the only military base with large range construction in Coastal Georgia. Proposed wetland impacts associated with the size of this proposed range are comparable to the wetland impacts associated with past range development on Fort Stewart.

a. Issue 2: EPA is particularly concerned that all impacts have been characterized as wetland impacts when two of the four projects show the potential for streams impacts on the 7.5-minute USGS topo quad maps. EPA notes that while the Fort has had a significant cumulative impact to streams from past projects, these impacts have not been mitigated.

(1) Applicants Response: The footprints of the MPMGR and IPBC on the 7.5-minute USGS topographic quads show “blue line” streams in the areas, however, a site visit by Fort Stewart and the Georgia Environmental Protection Division (GA EPD) on January 20, 2010, found no streams. The Savannah District also did not identify any streams within the range footprints. This information was added to Section 4.3.1, of the FEIS.

Over the years, Fort Stewart has worked diligently to mitigate impacts – direct and indirect, as well as cumulative – to the Installation’s streams, as well as wetlands. During the development of the Installation’s wetland bank, for example, thousands of feet of Canoochee Creek and Strum Bay were restored without being credited to the Installation’s mitigation bank. The Installation takes pride in that fact and welcomes working with ORK and other local environmental stakeholders on future projects.

(2) USACE Position: The USACE has completed an expanded preliminary jurisdictional determination for the project site. This determination verified there are no jurisdictional streams located on the project site.

a. Issue 3: The FEIS should provide more discussion regarding the quality of the wetlands impacted. The DEIS mentions they're freshwater wetlands and that the Army has acquired mitigation credits to restore a historically but degraded hardwood wetland system. It is unclear what type of wetlands ecosystems are being impacted by the ranges and garrison proposed projects.

(1) Applicants Response: Surveys of the proposed range and garrison sites by Fort Stewart determined these ecosystems were predominantly broadleaf hardwood palustrine wetlands consisting of vegetative communities typical of wetlands in the Coastal Plain: pond pine (*Pinus serotina*), pond cypress (*Taxodium ascendens*), water oak (*Quercus nigra*), water tupelo (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), green ash (*Fraxinus pennsylvanica*), American hornbeam (*Carpinus caroliniana*), Highbush blueberry (*Vaccinium corymbosum*), fetterbush lyonia (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*) among many others including varied herbs and grasses. These plants occur with varying frequency depending on the landform and hydrology of particular areas. Animal communities are also supported by these areas – wading birds such as the Great Egret (*Casmerodius albus*), the Snowy Egret (*Egretta thula*), and the Great Blue Heron (*Ardea herodias*), amphibians such as the Bullfrog (*Rana catesbeiana*) and Wood Frog (*Rana sylvatica*), and mammals such as the Whitetail Deer (*Odocoileus virginiana*) were all observed during the surveys of the range project sites. Soil types are hydric sand-loam mixtures of the Ellabelle, Bibb, Pelham, and Leefield types. Text reflecting this information was incorporated into Section 6.4.1 of the FEIS..

(2) USACE Position: The description of the wetlands proposed to be impacted, which was submitted by the applicant and summarized above, is sufficient for the USACE to base an assessment of the wetland quality. In addition, the USACE has made multiple visits to Fort Stewart and is very familiar with the quality of wetlands located within the proposed project site(s). The USACE used this information and its knowledge of wetland habitats on Fort Stewart in its assessment of proposed wetland impacts and the adequacy of the applicant's proposed mitigation plan.

a. Issue 4: EPA is unable to fully evaluate wetlands impacts, which is an area of CWA-designated responsibility for the Agency, in the DEIS because expanded CWA 404(b)(1) analyses have not been prepared for three ranges: FY 13 Modified Record Fire Range, FY 13 10/25 Meter Zero Range, and FY 14 Convoy Live Fire Range. This is a concern. EPA would like to review and comment on these analyses before they appear in the FEIS. Please coordinate with Bob Lord, Region 4's Wetlands Program to discuss further.

(1) Applicants Response: As we mentioned in Section 4.3.2.2. of the DEIS, the

Installation has not prepared §404(b)(1) analyses for the FY13 MRFR, FY13 10/25 Meter Zero Range, and FY14 CLFR because some or all impacts to wetlands will likely be avoided during the design phase of these projects. The wetlands located on these sites are less than 5 acres each. If, however, wetlands cannot be avoided, the Installation will prepare §404(b)(1) analyses for these projects and request a §404(b) permit at that time.

(2) USACE Position: Wetland impacts pursuant to the construction of the FY 13 Modified Record Fire Range, FY 13 10/25 Meter Zero Range, and FY 14 Convoy Live Fire Range have not been determined by Fort Stewart. When these proposed projects are sited and designs are complete, and if there are any proposed wetland impacts associated with them, Fort Stewart will apply for a Section 404 permit with the USACE. Any proposed wetland impacts will be evaluated at that time and coordinated through the USACE permit process. The USACE is preparing an analysis of the proposed IPBC, MPMGR, DMPTR and QTR pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for the IPBC, MPMGR, DMPTR and QTR projects.

a. Issue 5: The DEIS states that the Fort has a regional permit for low water crossings, issued in 2001 and renewed in 2006 for 5 years, which allows for a maximum of 15 acres of cumulative wetlands impacts from low-water crossings. Approximately 5 acres of wetlands have been impacted using this permit. The FEIS should discuss the application of the Fort's regional permit for low water crossings, which allows for a maximum of 15 acres of cumulative wetlands impacts from low-water crossings, how the cumulative wetlands impacts are defined, and the water quality impacts and other aquatic resources impacts associated with this permit.

(1) Applicants Response: Low water crossings are not a part of the proposed action and there are no new low water crossings anticipated in the foreseeable future. As discussed in Section 3.4.4.2, only routine maintenance and repair of existing low water crossings in the range and training areas will be conducted.

(2) USACE Position: As part of this document, the USACE has prepared a cumulative impact assessment of all known past, presently proposed, and reasonably foreseeable future impacts to aquatic resources. This assessment takes into consideration

impacts associated with low water crossings.

a. Issue 6: EPA is concerned that the credit calculations using the Savannah District Standard Operating Procedure (SOP) do not fully compensate for the impacts. The Savannah District has frequently indicated to EPA that the SOP is not applicable to large impacts, such as those over 10 acres. EPA agrees and has proposed a scaling factor to address the cumulative impacts of large projects such as the factor used in the Charleston District SOP. This is the approach used by the Georgia Department of Transportation for its projects that exceed the 10 acre threshold. For very large projects this scaling factor could be capped at an appropriate level. EPA has suggested 3.0 acres, which is equal to the next largest factor used in the SOP. Application of the SOP without a scaling factor for large impacts, particularly the 108.1 acres for the MPMGR is not appropriate, even according to past finding from the Savannah District.

(1) Applicants Response: While a scaling factor may be appropriate to use in many large scale projects where a great deal of fill is being introduced into the wetland system and where the projects require large amounts of impermeable surfaces, neither of these considerations constitute significant components of any of the projects under consideration in the DEIS. Of this filled acreage only a small amount will include the introduction of impermeable surfaces. The only impermeable surfaces will consist of the range operations area and cover only 2% of each project footprint. As noted in Answer #1 above, while maximum projected “up to” amounts have been provided, most of those impacts are not the result of adding fill to the wetlands, but rather vegetative maintenance for line-of-sight and grubbing/grading for target placement.

As a result, it is the Installation’s position that use of any scaling factor is not necessary to compensate for the cumulative impacts associated with these types of projects and applying a scaling factor, as called for in the Charleston District’s SOP, to these types of projects would appear to be arbitrary and capricious as it would not appear to be based on any sound engineering or hydrologic rational but would appear to be more punitive than compensatory in nature.

Moreover, the Installation always takes into account secondary wetland impacts. In reference to the MPMGR, which is the project that contains the majority of the 179.03 acres of wetlands to be potentially impacted, the Installation has evaluated potential secondary cumulative impacts. In our planning process, as noted above, the Installation

took a “worst case scenario” approach when determining how to compensate for the quantity of wetlands loss. The Installation is planning to off-set secondary cumulative wetland effects from this range and has obtained an additional 287 mitigation credits from the Wilkinson-Oconee Bank. The Installation did account for the lost functions and values impacted by the project with respect to direct and indirect impacts.

As noted in Sections 3.4.5 and 4.3.2, the Savannah District is a cooperating agency to this EIS, and was consulted with regard to the factors noted above. Additionally, Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Having reviewed these documents and the associated 404(b)(1), the Savannah District did not suggest a need to utilize a scaling factor.

(2) USACE Position: The present total proposed wetland impact for the four proposed ranges is 179.03 acres. As discussed by the applicant above, not all of these proposed impacts are for fill, but a certain percentage would involve mechanized land clearing impacts. Clearing wetlands of vegetation and maintaining them in scrub/shrub vegetation results in a change in function, but not a total loss in function. The mitigation credits proposed by Fort Stewart are assuming a total loss in function. The proposed mitigation plan is to purchase 1,391 credits to compensate for a total of 179 acres of wetland impact. This is credit to impact ratio of 7.8:1. On average, three credits are generated for each acre of wetland restoration at the Wilkinson/Oconee Mitigation Bank, where credits will be purchased for the FY11 ranges. Therefore, the effective mitigation ratio for the FY11 Multipurpose Machine Gun Range and FY11 Infantry Platoon Battle Course projects would be approximately 2.6:1 of wetland restoration. The Applicant has not ruled out other acceptable compensatory mitigation alternatives to mitigate wetlands impact (provided through mitigation banks or in-lieu fee programs) for the FY13 Digital Multipurpose Training Range and the FY13 Qualification Training Range. Therefore, it is the position of the USACE that the mitigation proposed for this IPBC project would meet the requirements of the new mitigation rule.

a. Issue 7: The DEIS indicates that approximately one-third of the Fort's lands are wetlands. It also states some of the remaining 160 credits contained in the Fort's on-site mitigation bank will be used for the Garrison construction projects. Additionally, the Army has previously purchased credits from an established off-Fort wetland mitigation bank in accordance with the Compensatory Mitigation Rule (33 CFR Part 332) to cover

the proposed range projects. The Fort canvassed the available mitigation banks nearly one year ago, which may not reflect the current banks and credit availability. Given the opportunity, EPA would have discouraged the use of the Wilkinson - Oconee Mitigation Bank since it is out of the watershed, out of the ecoregion, and likely does not fully compensate for the functions lost at the project sites. EPA is also concerned, despite the rationale provided in the DEIS, that the Fort is not fully debiting its own mitigation bank before going to off-site alternatives. The Fort's mitigation bank is within the same watershed and ecoregion and thus more likely to replace the lost wetland functions. There appears to be ample time to expand this bank to accommodate the future needs presented as a reason for not fully using it for these projects. Typically, EPA discourages applicants from purchasing mitigation credits until the Section 404 permit has been issued, because this precludes other, possibly preferable, mitigation actions.

(1) Applicants Response: Although the Fort Stewart mitigation bank has sufficient credits to offset impacts from the two Garrison support construction projects, the Army has determined it is not sufficient to cover the unavoidable negative impacts to wetlands from the FY11-14 training range construction projects, for which the Installation must purchase credits from an off-site wetlands mitigation bank. The remaining acres within the Installation wetland bank allows Commanders to respond to emergency range training requirements, which surface from “In Theater” conditions and scenarios, or award Congressional Garrison or training additions that must be executed by Fort Stewart within one year or less. If Commanders did not have this flexibility, Installation projects with unavoidable wetland impacts would be cancelled or held up in significant delays awaiting Congressional funding to purchase “off-Post” wetland credits.

As discussed in Chapter 6 of the DEIS, despite the physical distance between the Wilkinson - Oconee Bank (WOB) restoration area and Fort Stewart, looking at the choice from a more holistic watershed perspective shows that the two locations are rooted in an interconnected complex of wetlands and open water bodies. The WOB wetlands were determined to be an ecologically acceptable replacement for the small portion of Fort Stewart wetlands impacts due to the proposed action. Hydrologic and habitat wetland functions will remain unimpaired.

At the time the credits were purchased, there were no other readily available mitigation banks open in the primary service area with the quantity and quality of credits needed to cover the Installation's projected needs. The Federal appropriations process did not

provide the Installation with the flexibility to wait until Section 404 permits were issued to initiate the required solicitation process to purchase the credits without putting the funding for the specific FY 2011 range projects in jeopardy. As part of the Installation's standard procurement processes, market research is conducted in accordance with the Federal Acquisition Regulation. This research requirement as it relates to contracting of off-post wetland credit purchases includes evaluating the current market and availability of primary service area mitigation credits. This process will also be implemented when seeking mitigation options for ranges beyond FY11.

For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs). For instance, the Installation is actively seeking opportunities to incorporate off-site compensatory mitigation projects into its private lands conservation initiatives in partnership with the Georgia Land Trust and will continue to do so to further provide compensatory mitigation within the primary service area and watershed. Under the Savannah District's SOP, the Wilkinson-Oconee Bank (WOB) is grandfathered as a pre-existing bank created prior to the Compensatory Mitigation Final Rule (please refer to Answer 9 below). As such, the WOB is an acceptable mitigation alternative that is in full compliance with the policy and purpose of mitigation required by the CWA, the Savannah District SOP, and the Compensatory Mitigation Final Rule. The information contained in this answer has been added to Section 6.4.1.1 of the FEIS.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. At the time of the pre-application meeting, the USACE agreed to allow the applicant to purchase credits from the secondary mitigation zone of the Wilkinson-Oconee Bank, which was the only bank with available credits. The agreement was made with the applicant in order to allow them time to procure funds necessary to provide mitigation when needed. The on-base Pond Four Mitigation Bank will be used to mitigate smaller on-post projects in the future that would likely be on a short time-line for planning, permitting and construction. The Army procurement process takes too long to allow for the purchase of mitigation credits for these small, short, time-line projects. Therefore, the USACE agrees with the applicant to save Pond Four credits for these future small projects.

a. Issue 8: EPA disagrees with the statement that applying for a CWA Section 404

permit is a minimization of wetlands impacts. The DEIS states "While the Army strives to avoid negative impacts to wetlands when it sites new range and training facilities on Fort Stewart, if impacts to regulated wetlands cannot be avoided, the Army minimizes those impacts by applying for a Section 404 permit as required by the Clean Water Act. CWA 404 requires a permit for any dredge and fill impacts to jurisdictional waters, including wetlands. The CWA is a regulatory requirement, not a mitigation option. The FEIS should clarify this misrepresentation of CWA Section 404 permit program as a form of mitigation.

(1) Applicants Response: The information in the text and tables, located in Section 6.4.3, of the FEIS has been edited to identify more accurately and clearly the differences between what is a required measure, such as a regulatory permit, and what is a mitigation option.

(2) USACE Position: The applicant made the suggested correction.

a. Issue 9: The DEIS discusses wetlands compensatory mitigation in context of NEPA-required mitigation when it should also discuss how the proposed mitigation meets the requirements of the Compensatory Mitigation for Losses of Aquatic Resources Final Rule. NEPA requires that to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with environmental impact analyses and related surveys and studies required by the Fish and Wildlife Coordination Act, the National Historic Preservation Act of 1966, the Endangered Species Act of 1973, and other environmental review laws and executive orders. The Compensatory Mitigation for Losses of Aquatic Resources Final Rule is considered to be a relevant "other environmental review law" as it is one of the CWA Section 404 implementing regulations. The FEIS should discuss and apply the Final Rule in its wetlands mitigation discussion.

(1) Applicants Response: The Installation utilized the Compensatory Mitigation Rule (33 CFR Part 332) when developing its mitigation plan for the proposed FY11 MPMGR, FY11 IPBC, FY13 QTR, and the FY13 DMPTR. Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Section 6.4.1.1 of the FEIS has been revised to clearly explain that a mitigation decision has not yet been made for the FY13 QTR and the FY13 DMPTR. For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable

compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs). Similar to the process outlined in the Compensatory Mitigation Rule, the Installation's standard procurement processes conducts market research in accordance with the Federal Acquisition Regulation. This research requirement as it relates to contracting of off-post wetland credit purchases includes evaluating the current market and availability of primary and secondary service area mitigation credits. This process will also be implemented when seeking mitigation options for ranges beyond FY11.

According to 33 CFR 332, *Compensatory Mitigation for Losses of Aquatic Resources*, mitigation bank credits may be used if the project is in the service area of a mitigation bank. Section 332.3 (b)(2) has a description of why mitigation bank credits are acceptable in compensating for wetland impacts:

“Since an approved instrument (including an approved mitigation plan and appropriate real estate and financial assurances) for a mitigation bank is required to be in place before its credits can begin to be used to compensate for authorized impacts, use of a mitigation bank can help reduce risk and uncertainty, as well as temporal loss of resource functions and services. Mitigation bank credits are not released for debiting until specific milestones associated with the mitigation bank site's protection and development are achieved, thus use of mitigation bank credits can also help reduce risk that mitigation will not be fully successful. Mitigation banks typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation. Also, development of a mitigation bank requires site identification in advance, project-specific planning, and significant investment of financial resources that is often not practicable for many in-lieu fee programs. For these reasons, the district engineer should give preference to the use of mitigation bank credits when these considerations are applicable.” Fort Stewart followed these requirements during the development of its mitigation plan.

(2) USACE Position: See USACE Position on USEPA issue 7 above.

a. Issue 10: While EPA does not expect the precise replication of all wetlands adversely impacted by the proposed action, the FEIS should explain how the proposed mitigation will adequately compensate for lost wetland functions and values such that it results in no net loss of wetland functions and values. This discussion is absent from the DEIS. Furthermore, since the U.S. Army Corp of Engineers (USACOE) cannot issue a

CWA 404 permit if there is a less damaging practicable alternative, the FEIS should discuss compliance with this provision.

(1) Applicants Response: The wetlands in the Wilkinson-Oconee Bank (WOB) are “in-kind” to the wetlands on Fort Stewart. Consistent with the fact that both areas are on Georgia’s Coastal Plain, wetlands within the WOB are very similar to those slated for impact by the proposed Fort Stewart range projects. Surveys of the proposed range sites by Fort Stewart determined that dominant vegetation communities consist of plants typical of wetlands in the Coastal Plain: mixtures of pond and bald cypress (*Taxodium ascendens* and *distichum*, respectively), water oak (*Quercus nigra*), water tupelo (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), green ash (*Fraxinus pennsylvanica*), privet (*Ligustrum sinense*), American hornbeam/ironwood (*Carpinus caroliniana*), highbush blueberry (*Vaccinium corymbosum*), fetterbush lyonia (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*) among many others including varied herbs and grasses. These plants occur with varying frequency depending on the landform and hydrology of particular areas, and essentially identical communities with similar distribution are found in the Wilkinson-Oconee’s Mitigation Bank. Animal communities also supported by these areas are: wading birds, such as the Great Egret (*Casmerodius albus*), the Snowy Egret (*Egretta thula*), and the Great Blue Heron (*Ardea Herodias*); amphibians, such as the Bullfrog (*Rana catesbeiana*) and Wood Frog (*Rana sylvatica*); and mammals, such as the Whitetail Deer (*Odocoileus virginiana*) were all observed during the surveys of the range project sites, and have been similarly reported in the Wilkinson-Oconee area. The American alligator (*Alligator mississippiensis*) is common throughout Fort Stewart and has also been observed at Wilkinson-Oconee. The locally endangered Wood Stork *Mycteria Americana* can also be found at both locations (though they are not expected to be impacted by the proposed projects).

Soil types were also consistent between the two areas. The Ellabelle, Bibb, Pelham, and Leefield types predominated in the proposed project areas. Analyses of the Natural Resources Conservation Service profiles show these to be comparable to the Chewacla, Chastain and Congaree soils which cover the Wilkinson-Oconee area. All are characterized by loamy surface layers and clayey or loamy subsoils, and all soils are on the National Hydric Soils list.

Although the area of the Coastal Plain in which the Wilkinson-Oconee area is situated

features more relief than that of Fort Stewart, the specific area of the restoration situated as it is in the Oconee River floodplain, is flatter than the surrounding general topography, resulting in a similar hydrologic profile to Fort Stewart. The bottomland hardwood wetland systems found at both locations share the typical functions of holding temporary storage surface water, maintenance of characteristic subsurface hydrology, removal and sequestration of elements, retention of particulates, export of organic carbon, maintenance of characteristic plant community, and habitat for wildlife. Based on this comparison, despite the distance between the two areas, wetlands on Fort Stewart and at the Wilkinson-Oconee restoration area are very similar and, therefore, their use for mitigation fully supports the requirement for “no net loss”. Text reflecting this information was incorporated into Section 6.4.1.1 of the FEIS.

(2) USACE Position: As discussed above, the mitigation proposed by the applicant would comply with the new mitigation rule. The USACE is preparing an analysis of the proposed project pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for this proposed project. This analysis would also confirm that the final proposed site development plan for this range, as well as the other three ranges being reviewed, was the least environmentally damaging practicable alternative that would meet the basic project purpose.

a. Issue 11: The DEIS states that the USACOE documents approximately 1,467,774 acres of wetlands impacted within 20 Georgia counties and by deducting 1,982.87 acres of wetlands impacts since 1990 there are at least 1,465,791.13 acres of wetlands remaining. According to the DEIS, this amounts to a loss of 0.14% of wetlands since 1990 - an insignificant amount." It is unclear if the USACOE document referenced in the DEIS is referring to the 1,467,774 acres of wetlands as being impacted in the 20 Georgia counties or existing (un-impacted) wetlands in these counties. This paragraph needs to be clarified in the FEIS.

(1) Applicants Response: There are 1,467,774 existing acres of existing wetlands within the 20 Georgia counties referenced, of which 1,465,791.13 acres of wetlands are un-impacted. This is how the Installation calculated a loss of 0.14% of wetlands since 1990 and the determination of “insignificant” derived. Text clarifying this information was incorporated into Section 5.3.3.2 of the FEIS.

(2) USACE Position: Fort Stewart corrected the FEIS, and clarified the information that EPA questioned.

3. US Fish and Wildlife Service (USFWS): No comments received. The US Army, Fort Stewart is the lead federal agency for this proposed action and has completed consultation with the USFWS. The Final Biological Opinion can be found in Appendix B of the FEIS.
4. Georgia State Clearinghouse: By memorandum dated June 8, 2010, the Georgia State Clearinghouse stated that the request has been found to be consistent with state goals, policies, plans, objectives, and programs, with which the state is concerned.
5. Georgia Department of Natural Resources, Coastal Resource Division (Georgia CRD): No comments were received from Georgia CRD. However, this office must certify that the project is consistent with the Georgia Coastal Management Program prior to the USACE completing its review of the subject application.
6. Georgia Department of Natural Resources, Environmental Protection Division (Georgia EPD):
7. Southern Environmental Law Center (SELC): By letter dated May 21, 2010, the SELC provided the following comments on behalf of the Ogeechee Riverkeeper, Inc. (ORK):

a. Issue 1: The applicant's alternatives analysis in the DEIS includes alternative COA 3 which is a "heavily utilized" existing multipurpose range complex (MPRC) (*Fort Stewart note: the range proposed for construction is actually a Digital Multi-Purpose Training Range, or DMPTR*). DEIS, Appendix D at 10. This, of course, begs the question as to why the Applicant is including as an alternative a site that could never be used even if it determined that the site would have fewer environmental impacts. Alternative COA 3 is not a practicable alternative at all.

(1) Applicants Response: Transforming the existing MPRC was an option legitimately considered as a practical alternative but rejected due to current and expected military operations and training demands. Transforming the existing MPRC and other operational ranges will remain a consideration on future range projects as the types of

military training and weapon systems evolve over time and possibly render older ranges obsolete. An example of this is the COA 1 for the DMPTR, which involves the transformation of another existing range, Red Cloud Foxtrot. In siting the DPMTR over top of an existing range, we are attempting to minimize and avoid the wetland impacts that would be associated with constructing the DPMTR elsewhere on Fort Stewart.

(2) USACE Position: Given the amount of development on the base as a whole, the re-use of an existing range should be considered as a potential alternative. The elimination of alternatives as not being practicable is a standard part of the Section 404(b)(1) Guidelines.

b. Issue 2: The other alternative which the Applicant examined yielded wetlands impacts of 240 acres. It is difficult to accept that there were no other practicable alternatives at Fort Stewart for this proposed range. Two-hundred forty acres is more than the combined wetlands impacts of all four of the proposed ranges.

(1) Applicants Response: Based on the Installation's location in a relatively flat coastal plain and the location of pre-existing military training ranges and facilities on high ground, impacts to 240 acres of wetlands to build a new 995 acre range is not beyond the realm of reasonable consideration as a viable alternative. The fact that wetland impacts in the preferred alternative are less than five percent of the overall range size demonstrates the Installation's efforts to avoid and minimize wetland impacts associated with the siting of new military ranges and training facilities. Army Installations, including Fort Stewart, must maintain their training lands to fully sustain mission requirements for national security. The way the Army does this is through its master planning process. It is important to note that the Installation's planning efforts to minimize wetland impacts begins with attempts to select a site with the least amount of wetlands. At this point in the planning process, the range design is limited to placement on site of a footprint of the proposed range. This footprint shows the maximum number of wetland impacts and that is why we state "up to" so many acres; however, once a final site is selected, further attempts are made to avoid and minimize negative impacts to wetlands inside the range footprint through the range design process.

The final range design cannot be prepared prior to a site being selected. Also, despite Fort Stewart's large size, much of its lands are already committed to other training, recreational, and environmental activities. Maneuver and dismounted maneuver training

areas occupy large portions of the Installation, where the integration of large firing ranges is not suitable. The west side of the Installation is devoted to maneuver training and, in its entirety, is necessary to meet Brigade mission training requirements. Maneuver training is necessary in upland areas to reduce wetland impacts resulting from heavy wheeled and tracked military vehicles, as well as to avoid vehicles from getting stuck in wet areas. The southeast side of the Installation is devoted to dismounted maneuver training (i.e. training on foot) and also contains a wooded recreational area for campers. More than 100,000 acres are devoted to the restoration and management of environmentally sensitive areas, such as habitat for threatened and endangered species (including the red-cockaded woodpecker (RCW) and gopher tortoise) and wetlands.

During the planning process for the FY13 DMPTR, which Fort Stewart initiated in 2006, the Installation developed a total of eight siting alternatives. This process allowed both operational and environmental aspects, including impacts to wetlands, to be thoroughly analyzed in a collective manner by members of the Installation's Environmental Division, Range Control Division, and Master Planning Division. As the analysis progressed, these siting alternatives were ranked using screening criteria, as discussed in Chapter 2, *Description of the Proposed Action and Alternatives*, of the FEIS. Minimization of environmental impacts, including wetlands, was a factor in which alternatives were considered viable and which were not. One DMPTR discounted alternative, not discussed in the FEIS, contained 673 acres of wetlands impact. Another site, also not considered any further, contained 313 acres of wetland impact and would have resulted in the elimination of 683 acres of RCW habitat (compared to an RCW habitat loss of 22.4 acres and 31 acres as a result of Alternatives B and C, respectively). Even though these eliminated sites were operationally viable, they were removed from consideration after environmental impacts were determined to be significant.

(2) USACE Position: There are variety of safety, noise, and other constraints that limit where a live fire range could be located on Fort Stewart. The Army is the "expert" for siting ranges and conducted an intensive alternatives analysis for locating this, and the other three range projects; to avoid wetland impacts, while meeting other site constraints. The Section 404(b)(1) analysis to be prepared for this action will fully address this issue.

c. Issue 3: Multi Purpose Machine Gun Range (MPMGR). As an alternative for this range, the Applicant proposed course of action (COA) 5 which would have yielded wetlands impacts of less than 9 acres had it been chosen as the preferred alternative.

However, the Applicant eliminated this alternative because it emerged as the preferred alternative for DMPTR. As such, COA 5 should not be discussed as a viable alternative for the MPMGR.

(1) Applicants Response: As a large military training and deployment complex, Fort Stewart must examine and analyze the cumulative effects of all its proposed ranges within its training platform as constrained by the Installation borders, adjacent and associated training facilities, and surface danger zones relative to one another. This analysis is in addition to examining other resources, such as wetlands, to optimize training while minimizing the overall impact to our environment. The decisions made on the siting of each range and what are practical alternatives are inherently intertwined and interdependent. This may not have been reflected well in Section 404 permit applications, but is more fully explained in Section 6.4.1.1 of the FEIS. The possibility remains that the MPMGR could be selected to occupy that site currently under consideration for the DMPTR if the DMPTR is ultimately selected to occupy another site.

Also, many other impacts, in addition to wetland impacts, are examined and analyzed in the siting of new ranges and training facilities, including other environmental factors (such as threatened and endangered species) and non-environmental factors (such as the impact the site has on the ability to conduct timely and realistic military training based on current threats to our nation's armed forces when engaged in combat or peace keeping operations overseas). Both the MPMGR and DMPTR were approved for funding, and as has been noted, COA 2 for the DMPTR would have carried a level of wetland impact even greater than the current impacts from both the MPMGR and the DMPTR. Given the many constraints (see Appendix D for siting criteria) at play in siting both ranges, the preferred COAs for the two ranges were seen as a necessary compromise for ensuring all needed ranges are built and military training requirements met.

(2) USACE Position: See discussion for SELC issue 2 above.

d. Issue 4: Notwithstanding the above, the Applicant needs to more adequately explain why it did not select COA 5 as the preferred alternative for MPMGR considering it would have reduced the wetlands impacts from 116.7 acres down to 9 acres.

(1) Applicants Response: Unfortunately, it would not be possible to ignore the fact that the site was already selected as the preferred site for the DMPTR, as suggested. Two

independently proposed ranges cannot have the same preferred site. The Installation agrees that nine acres of impact for a 250-acre range is far more desirable than 116.7 acres of wetland impacts (which we now have down to 103.3 acres); however, wetlands impacts for this specific range were only one factor examined and analyzed in selecting this site as the preferred alternative. Selection of this site as the preferred alternative helps the Installation's ability to avoid and minimize the overall and cumulative impacts to all wetlands associated with planned or reasonably anticipated range construction, as reflected in Sections 4.3.2, 5.3.3.2, and 6.4.1 of the FEIS.

(2) USACE Position: See discussion for SELC issue 2 above.

e. Issue 5: Qualification Training Range (QTR). For this proposed range, the Applicant discusses but then rules out COA 3, which would have less wetlands impacts than the Preferred Alternative B. The Applicant rules out this alternative site because it is the proposed location for a future Modified Record Fire (MRF) range, which is not before the Corps at this time. Again, given the significant size of Fort Stewart, alternatives for one range should not be eliminated for future potential ranges, or, such a site should never be discussed as an alternative. The Applicant is required under the Section 404(b)(1) guidelines to identify "practicable alternatives," not alternatives that could never be chosen regardless of how favorable they might be from an environmental standpoint.

(1) Applicants Response: Again, as a large military training and deployment complex, Fort Stewart must examine and analyze the cumulative effects of all its proposed ranges within its training platform as constrained by the Installation borders, adjacent and associated training facilities, and surface danger zones relative to one another. This analysis is in addition to examining other resources, such as wetlands, to optimize training while minimizing the overall impact to our environment. The decisions made on the siting of each range and what are practical alternatives are inherently intertwined and interdependent. This may not have been reflected well in Section 404 permit applications; but is more fully explained in the FEIS. One reason the COA 3 was deemed unsuitable was the fact the site is currently an operational range that is projected for reuse or transformation as a future MRF range. While Fort Stewart has a large land mass, much of its land mass is not environmentally or operationally suitable for range construction or for a number of considerations. Although significant, wetland impacts are only one of several significant factors considered when examining the suitability for

siting of a range. The remaining lands that are suitable for future range construction are limited because the best locations are currently being used to capacity as military ranges or training areas. The Installation contains many sensitive resources, such as wetlands and protected species habitat, which limit the locations suitable for constructing new military training ranges that are capable of maximizing military training while minimizing environmental impacts. Because of the operational impacts examined and analyzed when siting ranges, and because the Installation was able to minimize impacts and mitigate those that did occur, the decision was made to retain the COA 3 site for a future project. The alternative was practicable but was not chosen in this instance.

(2) USACE Position: See discussion for SELC issue 2 above.

f. Issue 6: Inadequate Mitigation. Ogeechee Riverkeeper (ORK) is concerned with several flaws in the Application's proposed mitigation measures. Considering the Project's significant destruction and alteration of wetlands, it is imperative that the value and functions of wetlands on Fort Stewart are mitigated. ORK shares the concerns expressed by the Environmental Protection Agency (EPA) in its comments on the Draft Environmental Impact Statement dated May 14, 2010. First, the Applicant's usage of the Savannah District's Standard Operating Procedure (SOP) for calculation of mitigation credits is inconsistent with the district's position that the SOP should not be applied to projects with large wetlands impacts. Given the Project's substantial wetlands impact of 190 acres, we urge the Corps to apply the SOP, but do so with a scaling factor to address the cumulative impact of the Project, an approach that is followed by the Charleston District. The Applicant's use of the SOP without a scaling factor will not successfully and adequately replace the lost functions and values of wetlands impacted by the Project.

(1) Applicants Response: The implementation of the actions proposed in the preferred alternative (Alternative B Sitings) has the potential to negatively impact up to 0.2% of the Installation's nearly 91,000 acres of wetlands. More importantly, of the up to 0.2% of the Installation's wetlands being impacted, most of those impacts are not the result of adding fill to the wetlands, and as stated earlier, the Installation anticipates wetland impacts will be much less than projected through further avoidance and minimization incorporated during the design phases of each project after the site is selected. It is important to note, that despite the large amount of military training activity that occurs on Fort Stewart, because of the Installation's proactive efforts to avoid, enhance and mitigate wetlands, its wetlands remain of a high quality, retaining and

transmitting large amounts of fresh water and providing habitat for countless local species.

While a scaling factor may be appropriate to use in many large scale projects where a great deal of fill is being introduced into the wetland system and where the projects require large amounts of impermeable surfaces, neither of these considerations constitute significant components of any of the projects under consideration in the FEIS. Of this filled acreage only a small amount will include the introduction of impermeable surfaces. The only impermeable surfaces will consist of the range operations area and cover only 2% of each project footprint. As noted above, while maximum projected “up to” amounts have been provided, most of those impacts are not the result of adding fill to the wetlands, but rather vegetative maintenance for line-of-sight and grubbing/grading for target placement. This information is located in Section 4.3.2.2.

As a result, it is the Installation’s position that use of any scaling factor is not necessary to compensate for the cumulative impacts associated with these types of projects and applying a scaling factor, as called for in the Charleston District’s SOP, to these types of projects would appear to be arbitrary and capricious as it would not appear to be based on any sound engineering or hydrologic rational but would appear to be more punitive than compensatory in nature.

Moreover, the Installation always takes into account secondary wetland impacts. In reference to the MPMGR, which is the project that contains the majority of the 190 acres (now 179.03 acres) of wetlands to be potentially impacted, the Installation has evaluated potential secondary / cumulative impacts. In our planning process, as noted above, the Installation took a “worst case scenario” approach when determining how to compensate for the quantity of wetlands loss. The Installation is planning to off-set secondary / cumulative wetland effects from this range and has obtained an additional 287 mitigation credits from the Wilkinson-Oconee Bank. The Installation did account for the lost functions and values impacted by the project with respect to direct and indirect impacts.

As noted in Sections 3.4.5 and 4.3.2 of the FEIS, the Savannah District is a cooperating agency to this EIS, and was consulted with regard to the factors noted above. Additionally, Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Having reviewed these documents and the associated 404(b)(1), the Savannah District did not suggest a need to

utilize a scaling factor.

(2) USACE Position: The USACE does not require the usage of the Savannah District's Standard Operating Procedure (SOP) for calculation of mitigation credits for projects of this size. The USACE does not use any scaling factor in association with the USACE SOP. The present total proposed wetland impact for the four proposed ranges is 179.03 acres. As discussed by the applicant above, not all of these proposed impacts are for fill, but a certain percentage would involve mechanized land clearing impacts. Clearing wetlands of vegetation and maintaining them in scrub/shrub vegetation results in a change in function, but not a total loss in function. The mitigation credits proposed by Fort Stewart are assuming a total loss in function. The proposed mitigation plan is to purchase 1,391 credits to compensate for a total of 179 acres of wetland impact for all four ranges. This is a credit to impact ratio of 7.8:1. On average, three credits are generated for each acre of wetland restoration at the Wilkinson/Oconee Mitigation Bank, where credits will be purchased for the FY11 ranges. Therefore, the effective mitigation ratio for the FY11 Multipurpose Machine Gun Range and FY11 Infantry Platoon Battle Course projects would be approximately 2.6:1 of wetland restoration. The Applicant has not ruled out other acceptable compensatory mitigation alternatives to mitigate wetlands impact (provided through mitigation banks or in-lieu fee programs) for the FY13 Digital Multipurpose Training Range and the FY13 Qualification Training Range. Therefore, it is the position of the USACE that the mitigation proposed for this IPBC project would meet the requirements of the new mitigation rule.

g. Issue 7: Second, the Applicant's choice of the Wilkinson-Oconee Mitigation Bank conflicts with the policy and purpose of mitigation required by the CWA. Under the Corp's regulation, the Applicant's "compensatory mitigation should be located within the same watershed as the impact site" 33 C.F.R. § 332.3. The purpose of this rule is to preserve and maintain water resources within a watershed, and ensure that wetlands lost are compensated by wetlands with similar characteristics, values, and functions. The Application, however, proposes mitigation outside of Fort Stewart and in another watershed at the Wilkinson-Oconee Mitigation Bank. This choice not only conflicts with the Corps' policy but also ignores the available 160 credits contained in Fort Stewart's on-site mitigation bank. ORK believes that the Corps should require the Applicant's use of the on-site mitigation.

(1) Applicants Response: Mitigation credits generated from the on-Post compensatory mitigation bank are not being used because there are insufficient credits available to satisfy requirements associated with the projects and the Installation needs to retain the few credits remaining for potential use to compensate for last minute and unanticipated Congressional add-on projects that occur on the Installation on a not-infrequent basis. Regarding use of mitigation banks, the Compensatory Mitigation for Losses of Aquatic Resources Final Rule states, “In many cases, the environmentally preferable compensatory mitigation may be provided through mitigation banks or in-lieu fee programs because they usually involve consolidating compensatory mitigation projects where ecologically appropriate, consolidating resources, providing financial planning and scientific expertise (which often is not practical for permittee-responsible compensatory mitigation projects), reducing temporal losses of functions, and reducing uncertainty over project success.” The rule then lists types of compensatory mitigation measures in order of preference. The rule states that “[in] general, the required compensatory mitigation should be located within the same watershed as the impact site.” But mitigation bank credits may be used if the project is in the service area of the bank. Section 332.3 (b)(2) has a description of why mitigation bank credits are given in the regulation:

“Since an approved instrument (including an approved mitigation plan and appropriate real estate and financial assurances) for a mitigation bank is required to be in place before its credits can begin to be used to compensate for authorized impacts, use of a mitigation bank can help reduce risk and uncertainty, as well as temporal loss of resource functions and services. Mitigation bank credits are not released for debiting until specific milestones associated with the mitigation bank site's protection and development are achieved, thus use of mitigation bank credits can also help reduce risk that mitigation will not be fully successful. Mitigation banks typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation. Also, development of a mitigation bank requires site identification in advance, project-specific planning, and significant investment of financial resources that is often not practicable for many in-lieu fee programs. For these reasons, the district engineer should give preference to the use of mitigation bank credits when these considerations are applicable.” Fort Stewart followed these requirements during the development of its mitigation plan.

Under the Savannah District's SOP, the Wilkinson-Oconee Bank is "grandfathered" as a pre-existing bank created prior to the Compensatory Mitigation Final Rule. As such, the Wilkinson-Oconee Bank is an acceptable mitigation alternative that is in full compliance with the policy and purpose of mitigation required by the CWA, the Savannah District SOP, and the Compensatory Mitigation Final Rule. Fort Stewart's use of the Wilkinson-Oconee Bank as mitigation for the proposed FY11 range projects was fully coordinated with the Savannah District, which was a cooperating agency on the EIS.

The wetlands in the Wilkinson-Oconee Bank are "in-kind" to the wetlands on Fort Stewart. Consistent with the fact that both areas are on Georgia's Coastal Plain, wetlands within the Wilkinson-Oconee are essentially identical to those slated for impact by the proposed Fort Stewart range projects. Surveys of the proposed range sites by Fort Stewart determined that dominant vegetation communities consist of plants typical of wetlands in the Coastal Plain: mixtures of pond pine (*Pinus serotina*), pond cypress (*Taxodium ascendens*), water oak (*Quercus nigra*), water tupelo (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), green ash (*Fraxinus pennsylvanica*), American hornbeam (*Carpinus caroliniana*), Highbush blueberry (*Vaccinium corymbosum*), fetterbush lyonia (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*) among many others including varied herbs and grasses. These plants occur with varying frequency depending on the landform and hydrology of particular areas, and essentially identical communities with similar distribution are found in the Wilkinson-Oconee's Mitigation Bank. Animal communities also supported by these areas are: wading birds, such as the Great Egret (*Casmerodius albus*), the Snowy Egret (*Egretta thula*), and the Great Blue Heron (*Ardea Herodias*); amphibians, such as the Bullfrog (*Rana catesbeiana*) and Wood Frog (*Rana sylvatica*); and mammals, such as the Whitetail Deer (*Odocoileus virginiana*) were all observed during the surveys of the range project sites, and have been similarly reported in the Wilkinson-Oconee area.

Soil types were also consistent between the two areas. Hydric sand-loam mixtures of the Ellabelle, Bibb, Pelham, and Leefield types predominated in the proposed project areas. Analyses of Natural Resources Conservation Service profiles show these to be comparable to the Chastain and Congaree soils which cover the Wilkinson-Oconee area. All soils are on the National Hydric Soils list. Although the area of the Coastal Plain in which the Wilkinson-Oconee area is situated features more relief than that of Fort Stewart, the specific area of the restoration is flatter than the surrounding general topography, resulting in a similar hydrologic profile to Fort Stewart. The bottomland

hardwood wetland systems found at both locations share the typical functions of holding temporary storage surface water, maintenance of characteristic subsurface hydrology, removal and sequestration of elements, retention of particulates, export of organic carbon, maintenance of characteristic plant community, and habitat for wildlife. Based on this comparison, despite the distance between the two areas, wetlands on Fort Stewart and at the Wilkinson-Oconee restoration area are very similar and, therefore, their use for mitigation fully supports the requirement for “no net loss”. Text reflecting this information was incorporated into Section 6.4.1.1 of the FEIS.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. At the time of the pre-application meeting, the USACE agreed to allow the applicant to purchase credits from the secondary mitigation zone of the Wilkinson-Oconee Bank, which was the only bank with available credits. The agreement was made with the applicant in order to allow them time to procure funds necessary to provide mitigation when needed. The on-base Pond Four Mitigation Bank will be used to mitigate smaller on-post projects in the future that would likely be on a short time line for planning, permitting and construction. The Army procurement process takes too long to allow for the purchase of mitigation credits for these small, short-time-line projects. Therefore, the USACE agrees with the applicant to save Pond Four credits for these future small projects.

h. Issue 8: Before seeking compensatory mitigation in a different watershed, the Applicant should explore the use of existing and new mitigation banks in Ogeechee River Watershed. According to the DEIS's evaluation of mitigation banks in 2009, the Ogeechee River/Margin Bay and Black Creek Banks may now have available credits. DEIS at 6-8. Also, given the significant amount of wetlands within the boundaries of Fort Stewart as well as Fort Stewart's experience in the creation of mitigation banks, the Corps should require the Applicant to take a hard look at a potential onsite mitigation bank that would ensure the compensation of the wetlands' lost values and functions.

(1) Applicants Response: Existing and new mitigation banks within this watershed were not available at the time Fort Stewart was required to begin planning for the required wetlands credit acquisition for its FY 2011 range projects with known and/or anticipated wetlands impacts (see answer to Issue #9, below, for additional details). On-

site wetlands mitigation was not a viable option because, as discussed in Section 5.3.3.2 of the FEIS, although Fort Stewart has an existing mitigation bank and an on-site wetlands restoration project, it is running out of new places where additional on-site mitigation can be conducted. If credits are available in the primary service area in the future, however, then Fort Stewart will work to try and obtain these credits, in accordance with the Compensatory Mitigation Rule For Losses of Aquatic Resources (33 CFR 332) and the Federal Acquisition Regulation. For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs).

After exploring and selecting reasonable site alternatives for the proposed FY11-FY14 range projects, the Installation determined that the last remaining on-site mitigation bank (Pond 4) could not support the wetland mitigation requirements for these facilities and sustain itself for mitigation of proposed and future garrison construction, and other unplanned projects that arise out of mission changes. The remaining acres within the Installation Wetland Bank allows Command to respond to emergency range training requirements which surface from “In Theater” conditions and scenarios, or award Congressional garrison or training additions that must be executed by Fort Stewart within one year or less. If Commanders did not have this flexibility, Installation projects with unavoidable wetland impacts would be cancelled or held up in significant delays awaiting Congressional funding to purchase “off-Post” wetland credits.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. The credits purchased were in the secondary service area of the Wilkinson-Oconee Bank which was the only bank with available credits. The on base Pond Four Mitigation Bank would not have enough acreage needed for these projects. Fort Stewart has conducted an in-depth review of potential wetland mitigation sites on the base and is in the process of developing additional areas connected to the existing Pond Four Mitigation Bank; however, no additional mitigation is available at this time.

h. Issue 9: The Applicant's proposed mitigation plan is based on mitigation credits purchased a year ago from the Wilkinson-Oconee Bank which was the "only bank that provided an offer to the solicitation...." DEIS at 6-8. It is our understanding that Section 404 permit applicants are discouraged from procuring mitigation credits in advance of

receiving a permit so that the Applicant is not limited in its mitigation options, such as the use of new mitigation banks. This reasoning is at play here. It has been a year since the Applicant solicited a mitigation contract and, according to the Applicant's DEIS mitigation bank table 6.1, at least two Ogeechee River Watershed banks may now have credits available.

(1) Applicants Response: The timeline associated with Congressional Budget approval and Federal Appropriation process for military construction requires advance planning to enable construction to be implemented in the timeframe appropriation was made. The timeline for planning and construction of these projects is quite early (two years out or more) and did not allow for a later solicitation. To secure the funds necessary to build a proposed range, Headquarters-Department of the Army (HQDA) requires the Installation to budget for wetland impacts that will be unavoidable at least two years prior to the proposed project's anticipated contract award date. If an Installation fails to provide this to HQDA within the given timeline, the project is not funded. In the past, Fort Stewart has been able to mitigate using its on-Post wetland mitigation bank; however, as mentioned above, the on-Post bank no longer has an adequate amount of credits available to support these ranges while also meeting the requirements of the Installation's "In-Theater" mission requirements. The Installation utilized the Compensatory Mitigation Rule (33 CFR Part 332) when developing its mitigation plan for the proposed FY11 MPMGR, FY11 IPBC, FY13 QTR, and the FY13 DMPTR. Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Section 6.4.1.1 of the FEIS has been revised to clearly explain that a mitigation decision has not yet been made for the FY13 QTR and the FY13 DMPTR.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. The USACE recognized the time restraints associated with the proposed projects and the military's appropriation and allocation of funds needed for potential wetland impacts and agreed to the use of the Wilkinson-Oconee Bank for these projects. Any future projects mitigation requirements would fall within the guidelines and mitigation availability in place at that time.

i. Issue 10: Furthermore, we share EPA's concerns that the Applicant is not

sufficiently mitigating impacts on streams. It is our understanding that Fort Stewart's projects in the past have significantly affected streams that were not mitigated. ORK urges the Corps to ensure that stream impacts are assessed separately from wetlands impacts and that the loss of streams is compensated appropriately. Overall, ORK is concerned that the Applicant's proposed mitigation plan simply does not include adequate compensation for Fort Stewart's wetlands and streams that will be significantly impacted by the Project.

(1) Applicants Response: No streams will be lost as a result of the proposed project. The footprints of the MPMGR and IPBC on the 7.5-minute USGS topographic quads show "blue line" streams in the areas; however, a site visit by Fort Stewart and the Georgia Environmental Protection Division (GA EPD) on January 20, 2010, found no streams. The Savannah District also did not identify any streams within the range footprints. This information was added to Section 4.3.1, of the FEIS.

Over the years, Fort Stewart has worked diligently to mitigate impacts – direct and indirect, as well as cumulative – to the Installation's streams, as well as wetlands. During the development of the Installation's wetland bank, for example, thousands of feet of Canoochee Creek and Strum Bay were restored without being credited to the Installation's mitigation bank. The Installation takes pride in that fact and welcomes working with ORK and other local environmental stakeholders on future projects.

(2) USACE Position: The USACE has completed an expanded preliminary jurisdictional determination for the project site. This determination verified there are no jurisdictional streams located on the project site.

j. Issue 11: Failure to Minimize Impacts to Marine Resources. Section 404(b)(1) guidelines prohibit issuance of a permit where "[t]he proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem." 40 C.F.R. § 230.12(a)(3)(iii) (emphasis added). None of the information that we have reviewed demonstrates that the Applicant has tried to adequately minimize the impacts of the Project. The Applicant repeatedly contends that because it is utilizing existing range footprints the Project will "avoid and minimize impacts to more pristine and un-fragmented wetlands systems" on Fort Stewart. See e.g. Public Notice at 3. While ORK appreciates the Applicant's utilization of existing ranges for the Project, this reuse

of range areas does not ensure minimization of harm to aquatic ecosystems or satisfy the regulation's mandate that the Project includes "all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem." 40 C.F.R. § 230. 12(a)(3)(iii).

(1) Applicants Response: In addition to avoiding and minimizing impacts to more pristine and un-fragmented wetlands systems, as noted in the comment, Fort Stewart consistently seeks to minimize and avoid wetland impacts at each stage of the design process. It is also important to note that the proposed ranges would be constructed on existing ranges that are operational and already cleared of vegetation. First, much of the avoidance and minimization process takes place before actual site selection. (See response to Issue #2.) Training ranges of this kind have fairly specific requirements and it is not always possible to build them without impacting every wetland in the footprint; however, site designers may alter certain aspects in response to environmental concerns during various stages of the design process (10%, 35%, 60%, 90%, and 100% stages of design completion). This is easiest if they can do so while still meeting the operational and training requirements of the range. For example, the currently on-going design process reduced the wetland impacts from the IPBC to a third of what they were at the time of writing the DEIS. Impacts from the MPMGR were also slightly reduced during that time and several proposed range projects were sited without wetland impacts of any kind. It is hoped that impacts from the QTR and DMPTR may be reduced, but as they are not yet in the design process, this cannot be precisely determined.

To ensure compliance with the Georgia (GA) Erosion and Sedimentation Control Act (ESCA) and the CWA on existing and future training ranges, Fort Stewart mandates full utilization of Timber Harvest best management practices (BMPs), National Pollutant Discharge Elimination System (NPDES) permit requirements, site-specific Erosion and Sedimentation Pollution Control Plans (ESPCPs), and pre- and post-construction BMPs to reduce the potential adverse impacts to water bodies, such as streams. The projects discussed in the JPN and FEIS have not undergone complete design. During this process, however, Fort Stewart stormwater specialists review ESPCPs for compliance with the GA ESCA and the CWA. The Installation also utilizes the Natural Resources Conservation Service (NRCS) to provide technical expertise during preparation of ESPCPs prior to Fort Stewart providing construction approval. Fort Stewart stormwater compliance assessors and NRCS consistently inspect and monitor on-going construction actions. They will also do this during the construction of these proposed projects to ensure adherence to associated ESPCPs. Fort Stewart inspectors also routinely inspect

tank trails, range access roads, range course roads, and dirt roads/trails to see if any damage is occurring (such as hardened tank trails or water crossings need repairs, to prevent sedimentation of adjacent streams).

(2) USACE Position: The USACE is preparing an analysis of the proposed project pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for this proposed project. This analysis will document that all requirements of the Guidelines have been met.

k. Issue 12: The Applicant-specifically, in Appendix D to the DEIS, fails to adequately describe measures intended to minimize impacts besides asserting that the ranges will be placed in existing disturbed areas. The proposed plans for MPMGR and QTR consist of wetlands impacts of 116.7 acres and 26.7 acres, respectively. Contrary to the Applicant's assertion that these proposed impacts are not extensive, the two ranges impact all wetlands within MPMGR and QTR areas. Thus, when all wetlands in each project area are destroyed or altered, the Applicant has failed to demonstrate that it has adequately minimized impacts to the aquatic ecosystem. The Applicant's failure to offer measures to minimize impacts to wetlands and streams violates the Section 404(b)(1) guidelines and the CWA. ORK urges the Corps to require the Applicant to set forth specific measures intended to minimize wetlands impacts on each of the four proposed ranges.

(1) Applicants Response: As noted in previous response, Fort Stewart attempts to avoid and minimize wetland impacts throughout the siting and design process. The most substantial avoidance and minimization occurs during the siting process as part of the site alternatives to carry forward for detailed analysis. Please note that, at the initial siting phase, the amount of wetland acres impacted attributed to each range is simply a total of all wetland acres that *would be located within the range footprint that could potentially be impacted*, and it is likely not *all of the wetlands within the footprint will be impacted by the project because avoiding and minimizing negative impacts wetland are carried forward as a consideration into the actual range design process after the site is selected*. Efforts are made to reduce these impacts as the design progresses and, it is anticipated that, as design proceeds, additional wetlands avoidance and minimization of effect will be achieved. Again as an example, the currently on-going design process for the IPBC

range has reduced the wetland impacts to a third of what they were at the time of writing the DEIS. Design efforts for the MPMGR have produced similar results, as well. Furthermore, little-to-no impervious surfaces will exist on these ranges, so runoff will not increase appreciably. The primary areas of “hardened surfaces” will consist of concrete turning pads, hardened stream crossings, etc., but not hardened roads and/or completely paved areas. The range surfaces will still be permeable, and, after construction, will acquire a covering of grasses and light herbaceous vegetation. Furthermore, wildlife may still traverse the ranges and graze during periods (sometimes weeks or more) the ranges are not in use.

In regard to the general issues of siting ranges and orienting them to avoid wetlands, further mention must be made of the Surface Danger Zone, or SDZ. Every range has an SDZ, an area within which people, property, and wildlife are in danger of being struck by projectiles during live fire exercises. Because of this danger, safety of Fort Stewart personnel, the public, and wildlife is a primary consideration in range siting. As previously noted, an SDZ may cover hundreds or even thousands of acres, and ranges must be sited to ensure areas of habitation, daily operations, traffic, and environmental sensitivity do not fall within them. A further limitation to siting is the fact that Fort Stewart is essentially cut into quarters by two major Georgia highways conveying regular civilian traffic. Injury or loss of human life during live fire exercises due to an improperly placed SDZ would be unacceptable to any party. Therefore, all organizations involved in siting ranges are forced to site ranges and their attendant SDZs very carefully. Efforts are made to ensure SDZs overlap. This maximizes land use and minimizes areas impacted by live fire; in part this is itself an environmental consideration as vegetation and animal populations may suffer losses from carelessly directed live fire.

(2) USACE Position: The USACE is preparing an analysis of the proposed project pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for this proposed project. This analysis will document that all requirements of the Guidelines have been met.

1. Issue 13: Deposition of Munitions. Finally, to our knowledge the Applicant fails to discuss the impact to water quality of any munitions landing in any waters of the United States on the proposed ranges. Under the Section 404(b)(1) guidelines, the Corps

has an independent duty to evaluate water quality impacts before it issues a permit. The deposition of the munitions in such waters will be an indirect impact of the proposed Project.

(1) Applicants Response: The Military Munitions Rule states that used or fired munitions are considered a solid waste only when they are removed from their original landing spot (www.epa.gov/epaoswer/hazwaste/military/index.htm). Therefore, since the proposed ranges will utilize existing impact areas and the munitions will be used for their intended purposes and will be left where they land, the munitions are not considered solid waste. The best practices to minimize the impact of lead on the environment are stormwater and erosion controls, vegetation management, soil amendments, bullet traps, and soil pH modifiers which are utilized.

(2) USACE Position: A certain percentage of the munitions that are used or fired on this range, and the other three ranges under review, would likely land in waters of the United States. The USACE would assume that most of this exploded ordinance would be comprised of lead, copper, zinc and other inert metals. Fragments of inert metal would not dissolve in water or otherwise become bio-available. Therefore, there would be a very low probability of munitions resulting in a more than minimal impact on water quality. The Georgia Environmental Protection Agency is reviewing the proposed project under Section 402 of the Clean Water Act, for compliance with the state's Water Quality Certification program. Prior to the USACE issuing a final permit for this proposal, the Georgia EPD must first issue Water Quality Certification. With issuance of Water Quality Certification, Georgia EPD would confirm that the proposed project would meet all applicable state standards.

PART III - ALTERNATIVES/SECTION 404(b)(1) ANALYSIS

A. ALTERNATIVES:

1. No Action: Under this alternative, Fort Stewart would not construct an IPBC range on the Installation. Without this range complex, the infantry units that are stationed on or habitually train on the Installation would not be able to train critical, collective infantry platoon live-fire tasks. There is no other range on the Installation designed to support the live-fire training of infantry platoon collective tasks. Without the IPBC range, infantry

platoons would not be trained in the unit collective live-fire skills needed prior to moving into platoon and company level collective live-fire training. Without this range infantry platoons would not be able to train to Army collective live-fire tasks standards and would not be considered combat ready.

2. Off-Post Locations: Consideration was given to siting the IPBC in an Off-Post location. Duplicating the infrastructure at a location Off-Post would incur considerable costs beyond the capability of the applicant's budget constraints. The IPBC would at a minimum require a large tract of land in an appropriate shape to co-locate the surface danger zones (SDZ) and associated facilities (see further discussion below). Estimates and surveys have shown to acquire such a track of land would require an Environmental Impact Statement. An Off-Post facility would be difficult to locate and still meet the Proximity requirements, especially given the logistics, cost, and scheduling required. Additionally, there are no other Public Lands available nearby that would be compatible with the IPBC training requirements.
3. On-Post Location: As previously stated, the proposed project is for the construction of an IPBC that does not isolate useful maneuver terrain, cut off impact areas, create a new impact area, or make Unexploded Ordnance (UXO) clearance operations difficult. The IPBC is a small caliber range used to support infantry platoon live-fire collective training to test infantry platoons (mounted or dismounted) on the skills necessary to conduct tactical movement techniques, and detect, identify, engage, and defeat stationary and moving infantry and armor targets in a tactical array. In addition to live fire, this range is used to train on sub-caliber and/or laser devices and can support the live-fire collective training needs of active and reserve component infantry platoons.

The IPBC includes eight mortar simulation device emplacements, six SATs, one MAT, 43 SITs, 14 MITs, one trench obstacle, nine machine-gun bunkers (with sound effects simulator), two landing zones, one assault/defend house, two 800-square-foot buildings, an air-vault latrine facility, ammo breakdown area, range tower, enclosed bleachers, and a covered mess facility. The IPBC footprint totals 1000 acres and would undergo selective tree removal (no clear-cut) to enhance training realism and for target placement. Landing and drop zone areas would be completely cleared.

The applicant identified three potential IPBC sites located within the Fort Stewart reservation. Each of these sites contains the area needed to support the range and accompanying SDZ. The

three sites, which are discussed in more detail below, were identified and evaluated using the following criteria:

1. Allow Anti-Terrorism and Force Protection. The site must be able to accommodate appropriate anti-terrorism measures and standoff distances.
2. Compatibility with Wildfire and Control (Prescribed) Burning Programs. The risk of wildfires is taken into consideration when siting projects. Areas to be avoided are those that are infrequently burned, because of safety concerns and for adherence to protected species habitat management plans include parcels near major highways (State and Interstate) and adjacent communities. Constructing facilities in locations that hinder Fort Stewart's prescribed burn program must be avoided.
3. Minimization of Environmental Impacts. Consideration of environmental impacts when siting projects include the following: avoid or minimize impacts to cultural and natural resources (such as wetlands and protected species); avoid direct impacts to creeks and streams; limit expansion of noise cones into existing residential areas and off-post communities; minimize adverse air quality impacts; and limit new metal contamination in standing timber (ranges).
4. Further Sustainability Goals. The Army incorporates sustainability principals into the planning, development, and upgrade of its facilities. From the outset, site selection and design follow sustainability principals, starting with design "charrettes" to ensure stakeholder collaboration toward optimal design, fiscal constraints, local characteristics and constraints, environmental issues, and consideration of functional adjacencies/relationships and land use compatibility. Site selection is based on functional adjacencies/relationships and land use compatibility. Ensure development near Fort Stewart's Garrison/cantonment (living and working) areas flow well with existing infrastructure, protecting green fields and preserving habitat and natural resources. Minimize negative impacts on the site and on neighboring properties and structures; avoid or mitigate excessive noise, shading on green spaces, additional traffic, obscuring significant views, etc.

The Army Range Requirements Model (ARRM) is an Army-wide planning tool used by Army Headquarters to determine range requirements at each Army Installation. The ARRM provides an automated capability to take doctrinal requirements and accurately

calculate live training throughput capacities and throughput requirements for each Installation. Ranges must be identified in the Installation's ARRM for it to receive Department of the Army (DA) funding. In addition to the four siting criteria listed above, which are applicable to all facilities at Fort Stewart, the MPMGR has been identified in the ARRM and was sited based the following Range-specific criteria:





1. Ability to Meet Training Requirements. There should be sufficient range capacity to ensure each unit meets its training requirements as set forth in the following: Army regulation (AR) 350-1, *Army Training and Leader Development*; Training Circular (TC) 7-9, *Infantry Live-Fire Training*; DA Pamphlet (PAM) 350-38, *Standards in Weapons Training*; TC 25-8, *Training Ranges*; the 3rd Infantry Division's Live Fire Guidance; and the unit's related Mission Essential Task List.
2. Range Design. Based on each proposed range's training purpose, each range must be of sufficient acreage to accommodate the SDZs for use of the specified munitions, as required by DA PAM 385-64, *Ammunition and Explosive Safety Standards*. The SDZ is a temporary safety boundary that surrounds the firing range and associated impact area that provides a buffer to protect personnel from the non-dud producing rounds that may be ricocheted during operation of the range. It includes an ordnance dispersion area, ricochet area, and an added safety buffer zone. This area is closed to all unauthorized personnel during each training exercise on the range. In addition, each range must have an existing impact area sufficient to support live-fire munitions used at Fort Stewart and be configured (e.g., course and targets) in a manner lending itself to achieving offensive and defensive training objectives.
3. Proximity. Range assets must be available for access by all Fort Stewart-stationed units to meet their reoccurring training requirements and to achieve combat readiness status before they deploy. This means sufficient ranges must be available within a geographic distance that allows each unit to get equipment to and from range locations to complete essential tasks in a timely manner. The time and cost of transporting units to a training area must not interfere with the overall training levels for a unit. Each unit has a limited amount of time and cost resources to achieve training requirements. The time and cost of transport cannot be so excessive that it compromises the unit's ability to meet all mission essential tasks and readiness requirements. Quality of life may be affected if troops have to travel too far for training.

The USACE has performed an analysis of the three identified Courses of Action (COAs) and determined that COA 1 is the preferred alternative. The range design in COA 1 results in fewer wetland impact than COA 2 while minimizing operational constraints. A table is shown below for each proposed range, comparing each COA against the operational feasibility criteria is shown below. The overall screening criteria discussed in more detail below.

<i>Summary of Screening Analysis for FY11 IPBC</i>				
Criteria	No-Action	COA 1	COA 2	COA Eliminated
Can the Army standard design in TC 25-8 for this range be accommodated under this course of action within allowable waivers or modifications?	✗	✓	✓	✓
Can the Surface Danger Zone (SDZ) for this range be accommodated without infringing on adjacent training facilities or ranges?	n/a	•	•	⊖
Has the range been sited to maximize use of the Installation's Training Area for future requirements by leaving the maximum amount of suitable contiguous land mass available for future needs?	n/a	•	•	✗
Is the terrain susceptible to wildfires which could cause safety issues to nearby Interstates or State Highways or lengthy shutdowns?	n/a	✓	✓	⊖
Does this course of action avoid and minimize adverse environmental impacts?	✓	•	⊖	⊖
Does this course of action require either electrical power lines or fiber optic cable in excess of 10,000 feet, or for water lines to be constructed?	n/a	•	•	•
Does this course of action require a new duded impact area to be established?	n/a	✓	✓	⊖
Does this course of action minimize construction costs for the range? ¹	✓	⊖	⊖	⊖
Does this course of action meet Force Protection and Anti-Terrorism measures?	n/a	✓	✓	✓
Summary of Course of Action Feasibility	✗	⊖	⊖	✗

¹ For this criterion, that may arise for mitigating potential environmental impacts. It represents only the relative cost of construction for each particular location.

LEGEND:

-  = Not Feasible – Unacceptable limitations
-  = Feasible – Moderate limitations and challenges
-  = Feasible – Minor limitations and challenges
-  = Feasible – No limitations or challenges
- n/a = Not Applicable

The Directorate of Public Works (DPW) Environmental Division, working in conjunction with the Directorate of Plans, Training, Mobilization, and Security (DPTMS) Training Division, the DPW Fish & Wildlife Branch, the DPW Forestry Branch, and the DPW Master Planning Division were able to identify three separate locations on Fort Stewart for the placement of this IPBC. Each of the three sites is discussed in more detail below:

- a. COA 1 is located in the C-1 Training Area (Within Alternative B) and is the preferred site.**

Allow Anti-Terrorism and Force Protection. Appropriate anti-terrorism measures and standoff distances are met by siting IPBC at COA 1.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the IPBC at COA 1 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities.

Minimization of Environmental Impacts. Siting the IPBC on top of an inactive aerial gunnery range reduces new adverse impacts to the environment; approximately 5.39 acres of impact are proposed with COA 1. The target boxes in the proposed footprint were site adapted to reduce wetland and threatened and endangered species impacts. Also, the IPBC footprint will not require site clearing for the entire footprint. Selective tree thinning will add to training realism while leaving a portion of the Red-cockaded woodpecker (RCW) habitat in place. It is probable that the RCW clusters located outside of the battle course's footprint would be impacted within the SDZ. The IPBC footprint will utilize selective tree thinning, not a clear-cut, which will add to training realism while leaving some RCW habitat in place. Impacts may occur to the RCW clusters located outside of the course's footprint within the SDZ, though not to a degree that would restrict the Installation from meeting its RCW recovery goals. RCW habitat protection

berms will be constructed to help reduce adverse impacts. Therefore, consultation with the US Fish and Wildlife Service (USFWS) is underway for this course of action. It is not anticipated that these impacts will restrict the Installation from meeting its RCW recovery goals. Noise contours would not extend beyond the Installation's boundary at this IPBC location. There are no cultural resources known to exist on the site. Environmental impacts were minimized, while meeting operational requirements when siting. Therefore, this site is carried forward as a viable COA, as the Installation's preferred IPBC site.

Further Sustainability Goals. As discussed above, COA 1 was sited to on top of an inactive aerial gunnery to avoid development of an inappropriate site and reduce environmental impacts. COA 1 was selected based on compatibility with the adjacent land use.

Ability to Meet Training Requirements. Fort Stewart considered the location of this proposed range in relation to the rest of the Installation and has determined this site to be the most viable course of action. The site does not isolate useful maneuver terrain, cut off impact areas, or make clearance operations difficult. COA 1 for the IPBC would not result in live fire rounds crossing major roads nor would it result in the SDZ extending beyond the Installation's boundary.

Range Design. The IPBC is a 1,000-acre facility with two helicopter landing zones and several target boxes located throughout the footprint. Weapon firing could occur in a 360 degree radius. The northern training area, particularly C-1, was the best location that could accommodate the tactical array of an IPBC. COA 1 was configured to achieve offensive and defensive objectives. COA 1 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use at Fort Stewart. The course would support mounted and dismounted training. The impact area associated with this battle course is already duded. Since the location of COA 1 is on top of an old aerial gunner range, the possibility of unexploded ordnance exists. However, unexploded ordnance will be characterized and removed prior to range construction.

The preferred IPBC location does not impact existing maneuver areas, nor does it create a new contaminated impact area. The proposed range does not impact existing flight routes and is in close proximity to existing utilities. There are also existing power lines in the area.

Proximity. This location would constrain training within Fort Stewart due to the distance from the garrison to the C-1 TA. Transportation to the range is the largest design constraint of this location. COA 1 would require lengthy transportation to meet annual training requirements and

to achieve combat readiness status before they deploy. The time and cost of transporting units to COA 1 would have a minor impact on the overall training levels for a unit.

Advantages/Disadvantages: Advantages of this site are that it does not isolate useful maneuver terrain, cut off impact areas, create a new impact area, or make UXO clearance operations difficult. UXO presence is assumed (due to its historical use as a range) and it will be characterized and removed prior to new range construction. Construction at this site would not result in live fire rounds crossing State Highways or Interstates, the SDZ extending beyond Fort Stewart's boundary, and it is also within 10,000 feet of existing power lines. Impacts to wetlands would be avoided and minimized as discussed further in Section B of this document.

b. COA 2 is located C-1 TAs within Alternative C.

Allow Anti-Terrorism and Force Protection. Appropriate anti-terrorism measures and standoff distances are met by siting IPBC at COA 2.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the IPBC at COA 2 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities.

Minimization of Environmental Impacts. The difference between COA 1 and COA 2 is the orientation of the IPBC footprint. The orientation of COA 1 better supports movement of the target boxes to minimize wetland and threatened and endangered species habitat impacts. Similar to the environmental impacts discussed with respect to COA 1, siting the IPBC COA 2 on top of an existing range reduces adverse impacts to the environment. The target boxes in the proposed footprint could also be site adapted to reduce wetland and threatened and endangered species impacts. However, there would be much larger wetland impacts with COA 2 (approximately 31.5 acres). While COA 2 would result in greater wetland impacts, the site would avoid impacts to protected species habitat. The COA 2 IPBC site would extend Noise Zone II (87 dB PK15) approximately 375 meters beyond the Installation boundary, creating a new noise receptor area. There are no cultural resources known to exist on the site. In summary, there is a low potential for indirect impacts to nearby cultural resources and can be avoided or minimized. Environmental constraints were minimized where possible while meeting operational requirements when siting COA 2. Therefore, this site is carried forward as a viable COA, as the Installation's second IPBC site.

Further Sustainability Goals. As discussed above, COA 2 was sited to on top of an inactive aerial gunnery to avoid development of an inappropriate site and reduce environmental impacts. COA 2 was selected based on compatibility with the adjacent land use.

Ability to Meet Training Requirements. COA 2 also provides sufficient capacity to support an IPBC. Fort Stewart considered the location of this proposed range in relation to the rest of the Installation and has determined this site to be the most viable course of action. The site does not isolate useful maneuver terrain, cut off impact areas, or make clearance operations difficult.

Range Design. As with COA 1, COA 2 was configured to achieve offensive and defensive objectives. COA 2 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use on Fort Stewart. The course would support mounted and dismounted training. The impact area associated with this battle course is already duded. Since the location of COA 2 is on top of an old aerial gunner range, the possibility of unexploded ordnance exists. However, unexploded ordnance will be characterized and removed prior to range construction. COA 2 does not impact existing maneuver areas, nor does it create a new contaminated impact area. The proposed range does not impact existing flight routes and is in close proximity to existing utilities. There are also existing power lines in the area. COA 2 for the IPBC would not result in live fire rounds crossing major roads nor would it result in the SDZ extending beyond the Installation's boundary.

Proximity. As with COA 1, the COA 2 would constrain training within Fort Stewart due to the distance from the garrison to the C-1 TA. Transportation to the range is the largest design constraint of this location. COA 2 would require lengthy transportation to meet annual training requirements and to achieve combat readiness status before they deploy. Transporting units to COA 2 would have a minor impact on the overall training levels for a unit.

Advantages/Disadvantages: The primary difference between COA 1 and COA2 is the orientation of the IPBC footprint itself. Disadvantages of COA 2 include increased environmental impacts.

c. COA 3 is located in TAs B-14/15 within Alternative C.

Allow Anti-Terrorism and Force Protection. Appropriate anti-terrorism measures and standoff distances are met by siting IPBC at COA 3.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the IPBC at COA 3 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities.

Minimization of Environmental Impacts. Environmental impacts associated with COA 3 are unknown since this alternative was eliminated from further review due to the operational constraints.

Further Sustainability Goals. As discussed above, COA 3 was sited to on top of an inactive aerial gunnery to avoid development of an inappropriate site and reduce environmental impacts. COA 3 was selected based on compatibility with the adjacent land use.

Ability to Meet Training Requirements. COA 3 in TAs B-14/15 would require the closure of a heavily utilized tank trail (FS 42). The SDZ of Red Cloud Hotel Range, when firing, would also interfere with and reduce the full use of the IPBC, which could remove or interfere with this range's use in the training rotation. This alternative was determined unfeasible.

Range Design. COA 3 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use at Fort Stewart. However, COA 3 would require the closure of a heavily utilized tank trail (FS 42) and was determined unfeasible.

Proximity. Transporting units to COA 3 would have a minor impact on the overall training levels for a unit.

Advantages/Disadvantages: COA 3 in TAs B-14/15 would require the closure of a heavily utilized tank trail (FS 42). The SDZ of Red Cloud Hotel Range, when firing, would also interfere with and reduce the full use of the IPBC, which could remove or interfere with this range's use in the training rotation. This alternative was determined unfeasible.

B. AVOIDANCE:

1. Total wetland avoidance on-site is not possible based on the layout and size of range complexes. Also, the layout of adjacent wetland areas made total avoidance impossible. Any further reduction in proposed impacts would not meet the applicant's purpose and

would not be practicable.

2. The applicant has completed the 90% site design for the proposed project. The standard site layout for this type of range would require the filling and/or mechanized clearing of all 5.39 acres of bottomland hardwood wetlands on the 71-acre project site. The applicant will likely be able to avoid some of the wetlands on the project site as final site design is completed for the project. However, for the purposes of this permit evaluation, the USACE will assume that all 5.39 acres of wetlands on the proposed project site would be impacted. As an additional avoidance measure, the USACE would include the following special condition in any draft permit issued for this project:

The site design for this project has not been finalized. Authorized wetland impacts are based on a standard range design. Prior to conducting any work in wetlands on this project site, the permittee shall submit final site development plans to the USACE for review and approval. No work in wetlands can occur until the USACE has reviewed and approved the final plan in writing; this concurrence letter needs to document that the 404(b)(1) process has been adequately demonstrated. It is anticipated that once final design is completed, there will be a minor reduction in the amount of wetland area that will be impacted by the project. This anticipated change in the footprint of authorized wetland impact is authorized under this permit and modification of the permit will not be required for this change in site design.

C. MINIMIZATION ALTERNATIVES:

1. Reducing wetland foot print: As required by Section 404(b) 1 of the CWA, minimization of wetlands was documented within the footprint the project site. The range floor was resited in several locations to document avoidance and to minimize the wetland impact. Overall, the wetland impacts in COA 1 were reduced from 15.9 acres to 5.39 acres, pursuant to the 90 percent design review. All other significant environmental issues (Threatened and Endangered Species [T&ES], CRM, Tribal Issues...etc) will not experience adverse impacts or require environmental mitigation. Again; the preferred COA 1, only impacts wetlands. Even though these wetland impacts will be extensive, they are not significant compared to the potential adverse impacts from habitat loss of the RCW or CRM resources associated with the other COAs. As with other ranges that are currently being planned and sited at Fort Stewart, the IPBC is utilizing an existing

training footprint and SDZ, which will avoid and minimize impacts to more pristine and un-fragmented wetland systems that exist in other low impact training areas. The IPBC is considered a maneuver range which allows the range planners more flexibility to move objective boxes and targets to avoid wetland impacts and other sensitive environmental resources. Efforts to minimize wetland impacts are also referenced in the Range and Garrison Construction Environmental Impact Statement (RGCEIS), Section 2.3.2 FY11 IPBC through the graphical presentation of the standard range design for the IPBC versus the preferred COA.

2. Erosion Control Techniques: The applicant has indicated that best management practices (BMPs) would be utilized while performing any construction activities on the subject property. In addition, the applicant has indicated that activities would be performed in a manner to minimize turbidity and/or erosion. Any permit that would be issued by the USACE would also include the following special condition, "All work conducted under this permit shall be located, outlined, designed, constructed and operated in accordance with the minimal requirements as contained in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. Utilization of plans and specifications as contained in "Manual for Erosion and Sediment Control, (Latest Edition)," published by the Georgia Soil and Water Conservation Commission or their equivalent will aid in achieving compliance with the aforementioned minimal requirements."

D. COMPENSATORY MITIGATION: Using Savannah District's Standard Operating Procedure (SOP), for calculating compensatory mitigation requirements, Fort Stewart determined that at least 40.35 credits are required to compensate for the proposed impacts. In June 2009, Fort Stewart contacted eight off-post mitigation banks. Fort Stewart solicited a contract for the purchase of in-kind mitigation credits for a period of 16 days, starting 28 May 2009, to all mitigation banks that could service Fort Stewart with wetland mitigation credits acceptable by the USACE. The only bank that provided an offer to the solicitation was Wilkinson-Oconee Bank. As described on its website, the Bank consisted of ditched, drained and clear-cut bottomland hardwoods, marginal forested scrub-shrub and herbaceous wetland systems, impaired streams and degraded riparian buffers and is being restored to vast bottomland hardwood wetland system that historically existing. Therefore, aquatic impacts associated with the proposed ranges are commensurate with the secondary service area of Wilkinson-Oconee Bank, which is a USACE approved mitigation bank.

At the time of the required solicitation, other banks within Fort Stewart's primary service area

did not have the appropriate number of credits available to support the Installation's needs to meet Congressional funding timelines for the proposed ranges. The Wilkinson-Oconee Bank has the appropriate number and resource type of credits available for Fort Stewart to completely mitigate unavoidable wetland impacts associated with proposed range construction.

E. CONCLUSIONS: Based on the above, an off-post facility would be difficult to locate and still meet the proximity requirements, especially given the logistics, cost, and scheduling required. Also, duplicating the infrastructure at a location off-post would incur considerable costs beyond the capability of the applicant's budget constraints. The applicant provided an adequate analysis of on-post locations for sighting this range and mitigation, as well as three other proposed new ranges.

F. SECTION 404(b)(1) ANALYSIS: This project must be evaluated for compliance with the Section 404(b)(1) Guidelines (40 CFR Section 230). The goal of the 404(b)(1) Guidelines is "to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredges or fill material." An expanded 404(b)(1) analysis will be conducted prior to making any permit decision.

PART IV - PUBLIC INTEREST REVIEW

A. ENVIRONMENTAL SETTING/EXISTING CONDITIONS: The Department of the Army owns and manages the area in which the proposed IPBC is located. The preferred COA is located with C-1 Training Area.

B. ENVIRONMENTAL IMPACTS: The USACE Regulatory Program considers the full public interest, reflecting the protection and utilization of important resources. Table 3 is a summary of our public interest review for the proposed activity, which assesses the impacts of the proposed permit action on environmental and other public interest factors (33 CFR 320.1(a)(1), 320.4 and 325.3(c)).

Table 3. Summary of Project Impacts

FACTORS	No Effect	Negligible	Undetermined	Beneficial Major/ Minor		Adverse Major/ Minor	
1. Economics/Social	X						
2. Education/Scientific	X						
3. Aesthetics	X						
4. Food-Fiber Production	X						
5. Historical/Architectural/ Archaeological	X						
6. Recreation	X						
7. Land Use	X						
8. Mineral Resources	X						
9. Soil Conservation							X
10. Water Supply Conservation	X						
11. Water Quality		X					
12. Air Quality		X					
13. Noise Levels							X
14. Public Safety		X					
15. Energy Needs							X
16. National Security	X						
17. Navigation	X						
18. Shoreline Erosion Accretion	X						
19. Flood Hazards	X						
20. Flood Plain							X
21. Wetlands							X
22. Refuges	X						
23. Fish	X						
24. Wildlife			X				
25. Food Chain Organisms	X						
26. Shellfish Production	X						
27. Threatened and Endangered Species			X				
28. General Environmental Concerns							X
29. Property Ownership	X						
30. Mineral Needs	X						
31. Other	X						

C. DISCUSSION: We have evaluated the permit application regarding the need for the proposed activities, the practicability of project alternatives, and the beneficial and detrimental effects, including cumulative impacts. Complete descriptions of the 31 public interest factors can be found in the RGCEIS for Fort Stewart. Each public interest factor is referenced to specific sections within the EIS.

1. Economics/Social – The proposed project will have no effect to the local economy or local social environment. (RGCEIS Section 4.11 Social and Economics)
2. Education/Scientific – The proposed project will have no effect to educational or scientific resources. The project footprint is within an Army Installation small arms impact area. (RGCEIS Section 4.11 Social and Economics)
3. Aesthetics – The proposed project will have no effect to aesthetics. The project footprint is within an Army Installation small arms impact area and is off-limits to unauthorized personnel. (RGCEIS Section 4.7 Land Use)
4. Food-Fiber Production – The proposed project will have no effect to food or fiber production. The project site is within an existing small arms impact area. (RGCEIS Section 4.4.3 Forestry Management)
5. Historical/Architectural/Archaeological – The US Army, Fort Stewart is the lead federal agency for this proposed action. Impact analysis for historic properties follow guidelines set forth in Section 106 of the National Historic Preservation Act (NHPA) implementing regulations (36 CFR 800), Fort Stewart's Programmatic Agreement with the Georgia SHPO. Fort Stewart would complete required consultation and make any necessary Section 106 of the NHPA determination, if required, prior to any work occurring in waters of the US subject to the jurisdiction of the USACE on a project site where cultural resources have been identified. (RGCEIS Section 4.5 Cultural Resources)
6. Recreation – The proposed project will have no effect to recreational areas. The footprint is located with a land use designated for range and training lands. (RGCEIS Section 4.7 Land Use)
7. Land Use – The proposed project is compatible to the existing land use category of range and training lands. Therefore, there will be no effect to land use. (RGCEIS Section 4.7 Land

Use)

8. Mineral Resources – The proposed project is located within the confines of an Army Installation that is designated for Soldier training. There are no minerals mined at Fort Stewart. Therefore, there will be no effect to mineral resources at the project site. (RGCEIS Section 4.1 Geology and Soils)
9. Soil Conservation – The project will undergo selective tree removal and grubbing and grading within the target objective boxes and landing zones. However, standard erosion and sedimentation control measures will be implemented to prevent sedimentation from leaving the confines of the project site. Erosion and sedimentation control best management practices (BMPs) will also be implemented throughout the duration of the project and after construction to ensure stormwater leaving the range has been filtered before reaching nearby wetland areas. Furthermore, an erosion and sedimentation control plan will be prepared for this project. A National Pollution Discharge Elimination System (NPDES) permit will be obtained for this project. At a minimum, a Level 1A Erosion and Sedimentation (E&S) Control Certified or Subcontractor Awareness E&S trained individual is required to be on site during any land disturbance activity. Adverse impacts to soil are expected to be minor and temporary in nature until construction is completed. (RGCEIS Section 4.1 Geology and Soils)
10. Water Supply Conservation – The proposed project will not require use of the Installation's water supply. Therefore, water supply will have no effect. (RGCEIS Section 4.3 Water Quality and Resources)
11. Water Quality – During the construction phase of the proposed project, wetland areas will be filled within the range footprint. All necessary permitting and mitigation will be conducted. See number 21, Wetlands, for additional information regarding impacts to wetland areas. Impacts to nearby surface water would likely not be impacted since necessary E&S control measures, as required by the Georgia Environmental Protection Division, will be implemented to prevent sedimentation from leaving the site. Turbidity samples will be taken during and after construction to ensure sedimentation in outfall areas do not increase from what the area currently experiences. Total Maximum Daily Load (TMDL) regulations require maintaining predevelopment time of concentration by strategically routing flows to maintain travel time, improve water quality, and to control the stormwater discharge. Flow calculations will also be conducted during preparations of the E&S control plan to ensure

concentrated stormwater runoff flows from peak rain events will not impact nearby water bodies. The proposed project footprint will be filled during construction activities; therefore, adverse impacts to groundwater are not anticipated.

Fort Stewart is in consultation with the Georgia Environmental Protection Division regarding a water quality certification pursuant to Section 401 of the Clean Water Act. The USACE would include a copy of the 401 water quality certification with any permit issued. In addition, the special condition of any permit issued would require the permittee to adhere to the conditions of the 401 water quality certification. (RGCEIS Section 4.3 Water Quality and Resources)

12. Air Quality – Adverse impacts to air quality is not anticipated. Only minor and temporary amounts of dust generation during timber harvesting and construction are expected; however, no regulatory air quality thresholds would be exceeded. (RGCEIS Section 4.2 Air Quality)
13. Noise Levels – The projected operating environment would generate a Noise Zone II contour that extends less than 1,000 meters beyond the northern boundary. There are small clusters of residential areas within these Noise Zone II contours. The projected operating environment would not generate a Noise Zone III contour that extends beyond the boundary or into the Fort Stewart housing area. (RGCEIS Section 4.6 Noise)
14. Public Safety – During the timber harvest, prescribed industrial safety standards would be followed. No specific aspects of the proposed project would create any unique or extraordinary safety issues. The project location is outside of current explosive safety quantity distance clear zones and the inhabited building distance clear zones. An unexploded ordnance survey will be conducted prior to timber harvesting and construction activities. If necessary, an unexploded ordnance avoidance plan will be prepared. (RGCEIS Section 4.9 Safety)
15. Energy Needs - Within the area of potential effect, there are existing utilities into which new lines from the range can tie in, minimizing the potential ground disturbing activities associated with the establishment of all-new utility systems. This proposed project would also not result in a substantial increase in utility usage. Executive Order 13423 sets as a goal for all federal agencies the improvement of energy efficiency and the “reduc[tion] of greenhouse gas emissions of the agency, through reduction of energy intensity by (i) 3 percent annually through the end of fiscal year 2015, or (ii) 30 percent by the end of fiscal

year 2015, relative to the baseline to the agency's energy use in fiscal year 2003." The U.S. Army Energy Strategy for Installations (U.S. Army Energy Strategy for Installations, 8 July 2005, available at <http://army-energy.hqda.pentagon.mil/docs/strategy.pdf>), also contains strategies to reduce energy waste and improve efficiency. Taking these policies into account, this action does not represent a net incrementally addition to the global climate change problem. (RGCEIS Section 4.8 Infrastructure)

16. National Security – The proposed project will have no effect to national security. The requirement for this range has been validated by the Range and Training Land Program Development Plan prepared for Fort Stewart and the Forces Command Live Fire Training Investment Strategy. This project has been coordinated with the Installation physical security plan, and all physical security measures are included in the project. All required antiterrorism protection measures are included in the project, per DA Pamphlet 190-51 (*Risk Analysis for Army Property*) and Training Manual 5-853-1 (*Security Engineering Project Development*). (RGCEIS Section 4.9 Safety)
17. Navigation – Navigable waters will not be impacted by this project. (RGCEIS Section 4.3 Water Quality and Resources)
18. Shoreline Erosion Accretion - The site is many miles from the coast and the project will not add to shoreline erosion accretion. (RGCEIS Section 4.1 Geology and Soils)
19. Flood Hazards – The site does not present an unusual flood hazard for this area (see below.) (RGCEIS Section 4.3 Water Quality and Resources)
20. Flood Plain – Small portions of the site (roughly conforming to those areas where wetlands intersect the site) are located in the Federal Emergency Management Administration (FEMA) 100 year flood zone, meaning that the flood elevation in those areas has a 1- percent chance of being equaled or exceeded each year. This does not present an unusual flooding hazard for this area, and as the site will be used only for military training, does not present an appreciable hazard to property or human safety. (RGCEIS Section 4.3.1 Surface Water and Floodplains)
21. Wetlands – The project, as currently proposed, would impact 5.39 acres of bottomland hardwood wetlands, either through direct filling or by mechanized landclearing. The applicant has completed the 90% site design for the proposed project. The standard site layout for this type of range would require the filling and/or mechanized clearing of all 5.39

acres of bottomland hardwood wetlands on the 71-acre project site. The applicant will likely be able to avoid some of the wetlands on the project site as final site design is completed for the project. However, for the purposes of this permit evaluation, the US Army Corps of Engineers (USACE) will assume that all 5.39 acres of wetlands on the proposed project site would be impacted. As an additional avoidance measure, the USACE would include the following special condition in any draft permit issued for this project: The site design for this project has not been finalized. Authorized wetland impacts are based on a standard range design. Prior to conducting any work in wetlands on this project site, the permittee shall submit final site development plans to the USACE for review and approval. It is anticipated that once final design is completed, there will be a minor reduction in the amount of wetland area that will be impacted by the project. This anticipated change in the footprint of authorized wetland impact is authorized under this permit and modification of the permit will not be required for this change in site design.

The present total proposed wetland impact for the four proposed ranges is 179.03 acres. As discussed by the applicant above, not all of these proposed impacts are for fill, but a certain percentage would involve mechanized land clearing impacts. Clearing wetlands of vegetation and maintaining them in scrub/shrub vegetation results in a change in function, but not a total loss in function. The mitigation credits proposed by Fort Stewart are assuming a total loss in function. The proposed mitigation plan is to purchase 1,391 credits to compensate for a total of 179 acres of wetland impact. This is credit to impact ratio of 7.8:1. On average, three credits are generated for each acre of wetland restoration at the Wilkinson/Oconee Mitigation Bank, where credits will be purchased. Therefore, the effective mitigation ratio for this project would be approximately 2.6:1 of wetland restoration. Therefore, it is the position of the USACE that the mitigation proposed for this project, as well as the other three proposed range projects, would meet the requirements of the new mitigation rule.

Even with implementation of the applicant's proposed compensatory wetland mitigation plan, the project would result in an overall loss in aquatic function within the watershed and on Fort Stewart. Therefore, the USACE has determined that the project would result in a minor adverse impact to wetlands. (RGCEIS Section 4.3.2 Wetlands)

22. Refuges - The site will not impact any areas specifically devoted to wildlife refuge. (RGCEIS Section 4.4 Biological Resources)

23. Fish – The site will not impact any fish species. The Canoochee and Ogeechee rivers are approximately 15 miles from the proposed project site. (RGCEIS Section 4.4 Biological Resources)
24. Wildlife –The site will impact RCW foraging habitat. Impacts to RCW clusters and foraging habitat will be minimized by constructing protection berms behind the target lines. During the design process, Installation Wildlife Management personnel will work with engineers to incorporate RCW protection berms where possible into the layout of the proposed project. Formal consultation with the USFWS has been conducted for these impacts. (RGCEIS Section 4.4 Biological Resources)
25. Food Chain Organisms – No specific or unique food chain organisms are known or suspected to exist on the site. (RGCEIS Section 4.4 Biological Resources)
26. Shellfish Production – The site is many miles from the coast and the project will not affect local shellfish production. RGCEIS Section 4.4 Biological Resources)
27. Endangered Species – The US Army, Fort Stewart is the lead federal agency for this proposed action. The site will impact RCW foraging habitat. Impacts to RCW clusters and foraging habitat will be minimized by constructing protection berms behind the target lines. During the design process, Installation Wildlife Management personnel will work with engineers to incorporate RCW protection berms where possible into the layout of the proposed project. Formal consultation with the USFWS has been completed for these impacts. Fort Stewart has completed required consultation and the USFWS has made necessary Section 7 of the Endangered Species Act determinations.
28. General Environmental Concerns – The project is expected to incur only the most minimal adverse impact to the local ecosystem. Sites are chosen to include the goal of avoiding and/or minimizing such impacts. Where possible and appropriate, impacts will be mitigated. Fort Stewart is generating an Environmental Impact Statement detailing these impacts.
29. Property Ownership – The property is owned by the United States Army for the primary purpose of military training. (RGCEIS Section 4.7 Land Use)
30. Mineral Needs – No particularly valuable or unique minerals are known or suspected to exist at the site. (RGCEIS Section 4.1 Geology and Soils)

31. Other – No notable environmental aspects not covered by the preceding will be impacted by this project.

D. US ARMY CORPS OF ENGINEERS' WETLAND POLICY: The proposed wetland alteration is necessary to realize the project's purpose and should result in minimal adverse environmental impacts. The benefits of the project would outweigh the minimal detrimental impacts. Therefore, the project is in accordance with USACE Wetland Policy (33 CFR 320.4(b)).

E. TITLE III OF THE CIVIL RIGHTS ACT OF 1964 AND EXECUTIVE ORDER 12898: The proposed action would not directly, or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin, nor would it have a disproportionate effect on minority or low-income communities.

F. CUMULATIVE IMPACTS: The Council on Environmental Quality (CEQ) defines cumulative impacts as the “impact on the environment which results from the incremental impact of the action(s) 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” (40 CFR 1508.7).

Geographic Scope/Region of Influence (ROI): the National Environmental Policy Act (NEPA) requires that the impacts of each proposed project be considered within the appropriate geographical area/region of influence. The geographic area/ROI for purposes of consideration of proposed projects within the boundaries of Fort Stewart are: the Altamaha watershed and United States Geological Service, Georgia Hydrologic Unit Code (HUC) 03070106 encompassing portions of Appling, Evans, Glynn, Jeff Davis, Long, McIntosh, Montgomery, Tattnall, Toombs, and Wayne County; the Lower Ogeechee River watershed HUC 03060202, encompassing portions of Bryan, Bulloch, Chatham, Effingham, Emanuel, Jenkins, and Screven Counties; the Little Ogeechee watershed HUC 03060204, encompassing portions of Bryan, Chatham, Effingham, Liberty, Long and McIntosh Counties; and the Canoochee Creek watershed HUC 03060203, encompassing portions of Bryan, Liberty, Evans, Tattnall, Candler, Emanuel, and Bulloch Counties. The USACE determined that actions taken in the “Fort Stewart Watersheds” would be sufficiently similar in location, topography, watershed impacts, habitat types, etc., to be considered in a cumulative impacts assessment. To properly scope this analysis the USACE has identified target resources for evaluation based on public and agency comments. Target

resources are important resources that could be cumulatively affected by activities in the identified scoping area.

The USACE identified the following target resources because of their scarcity and regional importance: (1) wetlands; (2) water quality; (3) aquatic species, and (4) mitigation. Below we have assessed the cumulative impacts of the proposed project on these target resources. In doing this, we considered the impacts of this project, past projects, as well as all reasonably foreseeable impacts in the Fort Stewart Watersheds consisting of HUC's 03070106, 03060202, 03060204, and 03060203.

The proposed action, in addition to other projects in the geographic areas of consideration (i.e., HUC's 03070106, 03060202, 03060204, and 03060203), have the possibility to result in either negative or positive impacts in a cumulative manner. Cumulative impacts are most likely to occur when a relationship exists between a proposed action, or alternative, and other actions expected to occur in a similar location, time period, and/or involving similar actions, i.e. past, present, and reasonably foreseeable future actions.

There are numerous projects in the watersheds associated with Fort Stewart, which are part of typical urban activities/development. These projects can be categorized generally as construction, maintenance, or demolition. This analysis takes into account the proposed project/action along with the larger projects in the ROI.

1. Wetlands: The following table provides information on all wetland impacts permitted by the Savannah District between January 1, 1990, and July 6, 2005, and the acres of wetland mitigation required for these impacts. This information was generated by the Savannah District Regulatory Analysis and Management System (RAMS) database. There has undoubtedly been some additional loss of wetland during this time period from activities not regulated by the USACE, but no data exist on these losses.

Table 4. Wetland Impacts from January 1, 1990, through July 6, 2005, in the Counties Included in the Fort Stewart Watersheds

County	Acres	Wetland Acres Requested	Wetland Acres Permitted	Wetland Acres Mitigated
Bryan	111509	38.15	41.81	236.29

Bulloch	81797	114.67	119.28	205.28
Chatham	162459	701.13	666.91	4298.24
Effingham	127318	175.13	205.08	633.59
Emanuel	42158	67.78	67.78	269.26
Jenkins	35292	55.74	55.74	230.22
Screven	85270	47.99	57.19	92.08
Liberty	139558	55.74	55.74	230.22
Long	93629	117.9	117.9	1343.68
McIntosh	149942	16.86	16.85	69.64
Appling	39963	34.02	34.02	70.39
Evans	12493	21.28	21.28	34.81
Glynn	134011	210.8	210.13	1496.65
Jeff Davis	23394	2.68	2.68	3.75
Montgomery	14426	8.78	8.78	6.96
Tattnall	33959	31.49	31.49	73.08
Toombs	21718	3.45	3.45	2.43
Wayne	99669	189.6	188.5	1499.45
Candler	17051	4.98	10.48	4.78
Emanuel	42158	67.78	67.78	269.26
TOTALS	1467774	1965.95	1982.87	11070.06

In summary, the USACE can document that in 1990 there were approximately 1,467,774 acres of wetlands in HUC's 03070106, 03060202, 03060204, and 03060203 within Bryan, Bulloch, Chatham, Effingham, Emanuel, Jenkins, Screven, Liberty, Long, McIntosh, Appling, Evans, Glynn, Jeff Davis, Montgomery, Tattnall, Toombs, Wayne, Candler and Emanuel Counties. By deducting 1,982.87 acres of wetland impacts since 1990 (RAMS database), there are at least 1,465,792 acres of wetlands remaining in this area. This amounts to a loss of 0.2 percent of the wetlands in HUC's 03070106, 03060202, 03060204, and 03060203 since 1990. The largest percent loss by county would be Chatham County, where 0.4 % of the wetlands have been impacted since 1990. The USACE can also document that 11,070.06 acres of wetland mitigation were provided to offset the post 1990 wetland impacts in this area.

In addition to the impacts described above, Fort Stewart itself has experienced some wetland impacts associated with various projects since the close of the review period in 2005. Some major restoration projects, employed to mitigate wetland impacts, have also occurred within and after the review period, but have not been integrated into the data described above. The effects of these projects are outlined in the table below.

Table 5. Fort Stewart Wetland Impacts Post-2005

	Wetland	Wetland	Wetland
	Acres	Acres	Acres
County	Requested	Permitted	Mitigated
Bryan	4.23	4.23	0
Liberty	214.77	214.77	3230
Long	0	0	0
Evans	0	0	0
Tattnall	0	0	0
	219	219	3230
TOTALS			

The following is a list of Fort Stewart projects authorized by the USACE within Fort Stewart watersheds outside the review period.

a. Department of the Army Permit 940000880 (modification), issued June 29, 1995, authorized the enhancement of approximately 1,300 acres of wetlands in the A11 training area of Fort Stewart, to mitigate for 2.1 acres of wetlands impacted by the earlier construction (under the same Permit number) of rail pass tracks in an adjacent training area.

b. Department of the Army File Number 200007600 refers to the restoration and enhancement of approximately 1200 acres of wetlands to create Fort Stewart's Canoochee Creek Reservoir (or "Pond 4") Mitigation Bank.

c. Department of the Army Permit 200601665, issued December 6, 2006, authorized impacts to 4.23 acres of wetlands in Bryan County for improvements to the road in Fort Stewart's existing Convoy Live Fire Range. Mitigation consisted of a debit of 12.7 credits from the Installation's on-post wetland mitigation bank.

d. Department of the Army Permit 200501852, issued March 12, 2007, authorized impacts to 206.9 acres of wetlands in Liberty County for the construction of the Digital Multipurpose Range Complex (DMRC). 4.0 acres of jurisdictional wetland were impacted through direct filling; the remaining 202.9 acres were impacted through cutting of vegetation to meet line-of-sight requirements. Mitigation was accomplished through the Strum Bay Restoration, which (under the same Permit) restored and enhanced approximately 730 acres of wetlands adjacent to the

project area by correcting previously impacted hydrology.

e. One project for which a DA Permit is pending, vehicle maintenance facilities in support of 2nd BCT operations, will impact a total of 7.87 acres of wetlands. Although no DA Permit number has yet been assigned to these projects as they are still in the planning stages, the Fort Stewart Wetland Mitigation Bank has been debited in anticipation of them, so the impacts have been included in this analysis.

Fort Stewart has implemented an aggressive mitigation program in order to offset wetland impacts on the Installation. These projects include wetland enhancement and wetland restoration projects on large scale areas that provide higher quality mitigation than smaller patchwork single permit mitigation products. The following are current wetland mitigation projects located within the boundaries of Fort Stewart:

Pond 4 Mitigation Bank (USACE File Number 200007600): This single user bank was permitted for projects located within the boundaries of the Fort Stewart Installation. Approximately 1200 acres of wetlands were restored within the Canoochee Creek and Strum Bay wetland systems. This project is mostly comprised of deepwater and hardwood swamp habitat. Additional areas upstream of Pond 4 are currently being studied that would increase the total amount of wetland enhancement and restoration (see Strum Bay Mitigation Area below).

A-11 Mitigation Area (USACE File Number 940000880): This project specific mitigation area is comprised of approximately 1300 acres of wetland enhancement/restoration. Hydrologic enhancement/restoration was completed through the reintroduction of hydrology that had been previously diverted around the project area. It is comprised mostly of pine/cypress flatwoods and hardwood drainages.

Strum Bay Mitigation Area (USACE File Number 200501852): This project specific mitigation was originally developed to mitigate impacts associated with the DMPRC. Subsequent studies realized a much larger restoration/enhancement was obtained by re-directing hydrology back into the Strum Bay wetland system. This project has now identified enhancement and restoration of wetland hydrology to approximately 730 acres. This portion of the Strum Bay wetland system is located upstream from the Pond 4 Mitigation Bank, thus creating additional benefits to water quality and habitat to the entire Strum Bay wetland system and Pond 4 Mitigation Bank.

Summary: These effects, when combined with other projects in the ROI, do have the potential to

result in adverse cumulative impacts; however, it is expected that other projects in the ROI will be implemented as follows: projects will use erosion control measures, silt fencing, and other Best Management Practices; sufficient storm water management structures will be constructed as part of new construction; erosion and sedimentation control plans will be filed in accordance with Georgia's Sedimentation Pollution Control Act; and all projects will be conducted in accordance/in compliance with federal, state, and local laws. This includes obtaining and adhering to appropriate wetland permits, including compliance with compensatory wetland mitigation requirements outlined in the wetland permit(s).

2. Water Quality: Water quality is affected by changes to the environment (referred to as stressors) that adversely affect aquatic life or impair human uses of a water body. Point sources are municipal and industrial wastewater discharge. Non-point sources consist of sediment, litter, bacteria, pesticides, fertilizers, metals, oils, grease, and a variety of other pollutants that are washed from rural and urban lands by storm water. Expected growth in population and employment in the basin will mean more potential stress from storm water runoff as well as non-point source loading.

Wetland Loss: The impacts to wetlands discussed above would be expected to have an adverse impact on water quality due to the loss of associated aquatic functions (flood water retention, filtration, contaminate removal, sediment retention, etc.). The mitigation for these impacts would help to offset these impacts to water quality.

Point Source Discharges: Impacts from municipal wastewater, agricultural, and industrial discharges were greater prior to the 1970's. Due to increased regulation, these discharges have been reduced but continue to introduce pollutants into the system, which lower water quality when considered cumulatively. Georgia's "2004 303(d) List" for Bryan, Evans, Liberty, Long, and Tattnall counties have 3 waterways listed as impaired or partially impaired; they are listed in the table below with the causes of impairment.

Table 6.

Waterway	Cause of Impairment
Canoochee River	Trophic-weighted residue value (mercury in fish tissue)
Peacock Creek	Low dissolved oxygen and fecal coliform bacteria
Taylor's Creek	Low dissolved oxygen

Non-point Source Discharges: Residential, commercial and industrial development results in an increase in impervious surfaces (roof tops, paved roads, parking lots, etc.), which affects storm water discharges. Development results in an increase in non-point source contaminant loading through associated increases in urban landscaping (pesticides and fertilizers), increased traffic (oil, grease and metals), and other associated activities. There would be an anticipated incremental increase in adverse impacts to water quality as impervious surfaces increase. The following table is a summary of anticipated population growth-induced increases in impervious surfaces in the Altamaha watershed. The amount of impervious surface coverage is increasingly recognized as a valuable predictor of overall water quality within a watershed. In general, as population increases, so does impervious surface. As impervious surface area increases, water quality decreases. Table 4.1 shows population and impervious surface area growth over time for the Lower Ogeechee watershed; Table 4.2 shows population and impervious surface area growth over time for the Canoochee watershed; Table 4.3 shows population and impervious surface area growth over time for the Little Ogeechee watershed; Table 4.4 shows population and impervious surface area growth over time for the Altamaha watershed.

The impervious surface data was generated by the USEPA and provided to the USACE via a table titled “Total Impervious Area Calculations by 12-Digit HUC Watershed (based upon National Land Cover Data, 1993). Using simple linear regression analysis, the USACE utilized county population projection data to estimate percent increase in impervious surface, by county. The data contained in Tables 4.1 thru 4.4 indicates that as the population of each county continues to increase, there will be an associated increase in impervious surfaces. All counties in the study area would be anticipated to experience an increase of less than one percent impervious surface by the year 2050. However, each county is responsible for regulating non-point source storm water discharges pursuant to Section 402 of the CWA. These county storm water management programs should help to minimize the anticipated adverse impacts to water quality.

Table 7. Projected Population Growths and Associated Approximate Impervious Surface Increases
Lower Ogeechee - HUC 03060202

County		Year						
		2007	2008	2010	2020	2030	2040	2050
Bryan	Population / square mile	66	69	70	88	106	124	142
	% impervious Surface							
	Coverage	2.33	2.37	2.39	2.68	2.97	3.26	3.55
Bulloch	Population / square mile	96	98	101	120	139	157	176
	% impervious Surface							
	Coverage	2.81	2.84	2.89	3.20	3.50	3.79	4.09
Chatham	Population / square mile	385	389	386	410	434	457	481
	% impervious Surface							
	Coverage	7.33	7.39	7.35	7.71	8.07	8.42	8.78
Effingham	Population / square mile	105	108	111	142	173	204	234
	% impervious Surface							
	Coverage	2.95	3.00	3.05	3.55	4.04	4.53	5.00
Emanuel	Population / square mile	32	33	33	34	36	37	38
	% impervious Surface							
	Coverage	1.77	1.79	1.79	1.81	1.84	1.85	1.87
Jenkins	Population / square mile	24	24	25	25	25	25	26
	% impervious Surface							
	Coverage	1.64	1.64	1.66	1.66	1.66	1.66	1.68
Screven	Population / square mile	23	23	24	25	26	27	28
	% impervious Surface							
	Coverage	1.63	1.63	1.64	1.66	1.68	1.69	1.71
Watershed Average								
Lower Ogeechee	Population / square mile	104	106	107	121	134	147	161
	% impervious Surface							
	Coverage	2.92	2.95	2.97	3.18	3.39	3.60	3.81

Table 8. Projected Population Growths and Associated Approximate Impervious Surface Increases
Canoochee - HUC 03060203

County		Year						
		2007	2008	2010	2020	2030	2040	2050
Bryan	Population / square mile	66	69	70	88	106	124	142
	% impervious Surface							
	Coverage	2.33	2.37	2.39	2.68	2.97	3.26	3.55
Bulloch	Population / square mile	96	98	101	120	139	157	176
	% impervious Surface							
	Coverage	2.81	2.84	2.89	3.20	3.50	3.79	4.09
Candler	Population / square mile	42	43	44	50	56	62	67
	% impervious Surface							
	Coverage	1.94	1.95	1.97	2.07	2.16	2.26	2.34
Emanuel	Population / square mile	32	33	33	34	36	37	38
	% impervious Surface							
	Coverage	1.77	1.79	1.79	1.81	1.84	1.85	1.87
Evans	Population / square mile	61	62	65	74	84	93	102
	% impervious Surface							
	Coverage	2.24	2.26	2.31	2.46	2.62	2.76	2.91
Jenkins	Population / square mile	24	24	25	25	25	25	26
	% impervious Surface							
	Coverage	1.64	1.64	1.66	1.66	1.66	1.66	1.68
Liberty	Population / square mile	100	97	105	109	114	119	124
	% impervious Surface							
	Coverage	2.87	2.83	2.95	3.02	3.10	3.18	3.26
Long	Population / square mile	28	28	31	38	46	53	60
	% impervious Surface							
	Coverage	1.71	1.71	1.76	1.87	2.00	2.11	2.23
Tattnall	Population / square mile	47	48	50	57	63	70	76
	% impervious Surface							
	Coverage	2.02	2.03	2.07	2.18	2.28	2.39	2.49
Watershed Average								
Canoochee	Population / square mile	55	56	58	66	74	82	90
	% impervious Surface							
	Coverage	2.15	2.16	2.20	2.33	2.46	2.58	2.71

Table 9. Projected Population Growths and Associated Approximate Impervious Surface Increases Little Ogeechee - HUC 03060204

County		Year						
		2007	2008	2010	2020	2030	2040	2050
Bryan	Population / square mile	66	69	70	88	106	124	142
	% impervious Surface Coverage	2.33	2.37	2.39	2.68	2.97	3.26	3.55
Chatham	Population / square mile	385	389	386	410	434	457	481
	% impervious Surface Coverage	7.33	7.39	7.35	7.71	8.07	8.42	8.78
Effingham	Population / square mile	105	108	111	142	173	204	234
	% impervious Surface Coverage	2.95	3.00	3.05	3.55	4.04	4.53	5.00
Liberty	Population / square mile	100	97	105	109	114	119	124
	% impervious Surface Coverage	2.87	2.83	2.95	3.02	3.10	3.18	3.26
Long	Population / square mile	28	28	31	38	46	53	60
	% impervious Surface Coverage	1.71	1.71	1.76	1.87	2.00	2.11	2.23
McIntosh	Population / square mile	20	20	21	24	26	29	32
	% impervious Surface Coverage	1.58	1.58	1.59	1.64	1.68	1.72	1.77
Watershed Average								
Ogeechee Coastal	Population / square mile	117	119	121	135	150	164	179
	% impervious Surface Coverage	3.13	3.15	3.18	3.41	3.64	3.87	4.10

Table 10. Projected Population Growths and Associated Approximate Impervious Surface Increases
Altamaha - HUC 03070106

Appling	Population / square mile	35	35	36	38	41	43	46
	% impervious Surface Coverage	1.82	1.82	1.84	1.87	1.92	1.95	2.00
Evans	Population / square mile	61	62	65	74	84	93	102
	% impervious Surface Coverage	2.24	2.26	2.31	2.46	2.62	2.76	2.91
Glynn	Population / square mile	128	130	129	141	152	164	175
	% impervious Surface Coverage	3.32	3.36	3.34	3.53	3.71	3.90	4.07
Jeff Davis	Population / square mile	40	40	40	42	44	47	49
	% impervious Surface Coverage	1.90	1.90	1.90	1.94	1.97	2.02	2.05
Long	Population / square mile	28	28	31	38	46	53	60
	% impervious Surface Coverage	1.71	1.71	1.76	1.87	2.00	2.11	2.23
McIntosh	Population / square mile	20	20	21	24	26	29	32
	% impervious Surface Coverage	1.58	1.58	1.59	1.64	1.68	1.72	1.77
Montgomery	Population / square mile	36	36	38	42	45	49	53
	% impervious Surface Coverage	1.84	1.84	1.87	1.94	1.98	2.05	2.11
Tattnall	Population / square mile	47	48	50	57	63	70	76
	% impervious Surface Coverage	2.02	2.03	2.07	2.18	2.28	2.39	2.49
Toombs	Population / square mile	75	76	76	81	87	92	97
	% impervious Surface Coverage	2.47	2.49	2.49	2.57	2.67	2.75	2.83
Wayne	Population / square mile	45	45	46	52	58	63	69
	% impervious Surface Coverage	1.98	1.98	2.00	2.10	2.20	2.28	2.37
Watershed Averages								
Altamaha	Population / square mile	52	52	53	59	65	70	76
	% impervious Surface Coverage	2.09	2.10	2.12	2.21	2.30	2.39	2.48

Summary: This effect, when combined with other projects in the geographical area of influence, does have the potential to result in adverse cumulative impacts; however, it is expected that future projects would be implemented as follows: projects will use erosion control measures, silt fencing, and other BMPs; sufficient storm water management structures will be constructed as part of new construction; erosion and sedimentation control plans will be filed in accordance with Georgia's Sedimentation Pollution Control Act; and all projects will be undertaken in accordance with federal, state, and local laws.

Fort Stewart's role in general and project-specific oversight to ensure compliance with environmental legislation and the overall health of the local ecosystem have certainly played a role in mitigating adverse impacts to water quality. Also, the use of this large (~ 280,000 acres) area of land for military training has and will continue to ensure that the vast majority of the Installation remains managed wilderness. This allows natural processes to operate in support of water quality to a degree not seen in many surrounding areas which have experienced a great deal of development, and is the primary contributor to good water quality relative to those areas. Also, it must be noted that many projects related to military training (ex: firing ranges) do not feature impervious surfaces to the same degree as many civilian and private projects, and will not experience human activity and traffic of the same frequency and intensity, which might otherwise worsen local water quality. Furthermore, through the oversight of Environmental Compliance Officers, Army units self-monitor their training activities to avoid and minimize potentially harmful activities. A 1999 water quality survey performed by Fort Stewart determined that the quality of water leaving Fort Stewart's geographic boundaries was of equal or better quality than that which entered the Installation.

In view of the above, the USACE determined that the proposed project, with proposed special permit conditions, would have minimal impacts on water quality when considered alone or in concert with the other past, present and reasonably foreseeable future projects in the basin.

3. Aquatic Species: Permitted impacts to wetlands and water quality as discussed above have affected fish and other aquatic species such as mussels and aquatic insects.

The proposed projects would not result in a direct adverse impact to any stream or river, or to aquatic species in the waterways. Rather, the project would result in unavoidable impacts to 5.39 acres of wetland, and a loss of the aquatic habitat function provided by these wetlands. However, this project-related wetland loss would be minor when considered cumulatively with

all other past and planned wetland losses discussed above. In addition, the applicant's proposed wetland mitigation plan would help to offset the aquatic habitat function loss that would result from this project. Furthermore, Fort Stewart Fish & Wildlife monitors and maintains the quality of Fort Stewart aquatic habitats as part of their fisheries program.

Overall, the proposed projects will not have a significant impact on Fort Stewart aquatic habitats and species.

4. Compensatory Mitigation: As defined in the NEPA regulations, compensatory mitigation is "*compensation for the impact by replacing or providing substitute resources or environments*" (40 CFR Part 1508.20). The Installation utilized the Compensatory Mitigation Rule (33 CFR Part 332) when developing its mitigation plan for the proposed Infantry Platoon Battle Course. The compensatory wetland mitigation ratios proposed for this project are 3:1 for those projects utilizing the on-post mitigation bank, and approximately 8:1 for projects utilizing off-post credits. The applicant's proposed compensatory wetland mitigation plan would provide more than would be needed to offset lost aquatic functions, and greater than required by 404 mitigation guidance as stated in the SOPs for determining compensatory mitigation.

Fort Stewart has elected to mitigate impacts from the proposed IPBC by purchasing credits from the Wilkinson-Oconee Mitigation Bank. The Wilkinson-Oconee Bank consists of 6,735 acres of restored, enhanced, and preserved bottomland hardwood and cypress-tupelo wetlands – the same types predominating on Fort Stewart. The placement of Fort Stewart within the service area of this Bank, the similarity of wetland types, and the quantity of available credits, made the Wilkinson-Oconee the ideal off-post mitigation option compared to other mitigation banks in Georgia.

Proposed projects: The proposed project supporting military training will adversely impact 5.39 acres of Jurisdictional Wetland. To mitigate for these impacts the applicant would purchase 40.35 mitigation credits from a USACE-approved mitigation bank that services the project area. Additionally, some small projects will be mitigated through debits from the Installation's on-post wetland mitigation bank. As such, any adverse impacts to wetlands and other waters of the U.S. caused by this project would be offset by the proposed mitigation.

Summary: The main public detriment that would result from this project would be the loss of 5.39 acres of jurisdictional wetlands. Many of the wetland functions and values important to the public, such as flood attenuation, sediment retention, fish and wildlife habitat, and others, would

be replaced by the applicant's mitigation plan. Additionally, Fort Stewart's past mitigation efforts (approximately 3,230 acres) have adequately offset impacts within the boundaries Fort Stewart. Mitigation for the current projects will be offset through additional mitigation efforts, including the use of off-site USACE approved wetland mitigation banks. The mitigation plan would also provide adequate compensation for the impacted wetlands through the implementation of wetland creation, enhancement and preservation. The proposed projects would not impact federal or state protected species or critical habitat. Cultural resources have been considered and it has been determined that they would not be impacted. Overall, the public benefits of the proposed project would outweigh the public detriments.

In view of the above, the USACE has determined that the proposed project, with proposed special permit conditions, would not have a significant impact on wetlands and/or other waters of the U.S. when considered alone or in concert with the other past, present and reasonably foreseeable future projects in the Fort Stewart watersheds.

F. SECONDARY/INDIRECT IMPACTS: See Section E above and the RGCEIS, prepared by Fort Stewart.

G. IRREVERSIBLE AND IRRETRIEVABLE RESOURCE COMMITMENTS: Authorization of the applicant's preferred alternative, or any other build alternative, could result in an irreversible and irretrievable commitment of a range of natural, physical, human and fiscal resources. The fossil fuels, labor and construction materials that would be expended, if the project is constructed, are generally not considered irretrievable resources. In addition, these resources are not in short supply and their use would not have an adverse effect upon their continued availability.

H. EFFECT ON FEDERAL PROJECTS: We have determined the proposed activity would not have an adverse effect on any Federal Project (33 CFR 320.4(g)).

PART V - PERMIT ACTION ALTERNATIVES

A. TO ISSUE THE PERMIT IN ACCORDANCE WITH THE PLANS SUBMITTED BY THE APPLICANT: This course of action by itself would be inappropriate because it does not include provision for special conditions (See D. below).

B. TO DENY THE REQUEST FOR A PERMIT: Denial of the permit would not be an

appropriate course of action. The proposed activity would not have significant adverse effects on navigation, the environment or other public interest factors.

C. TO ISSUE THE PERMIT AFTER SUBMITTAL OF MODIFIED PLANS BY THE APPLICANT WITH SPECIAL CONDITIONS: This course of action would not be warranted. Our review of the applicant's plans and alternatives showed the applicant's proposed activity to be the most practicable way to accomplish the applicant's overall purpose.

D. TO ISSUE THE PERMIT IN ACCORDANCE WITH THE PLANS SUBMITTED BY THE APPLICANT WITH SPECIAL CONDITIONS: This would be the appropriate course of action to follow. In order to protect the public interest the following special conditions would be placed on any permit issued:

1. All dredged or borrowed material used as fill on this project will be from clean, uncontaminated sources and free from cultural resources.
2. That no construction activity or stockpiling will occur in waters of the United States, including wetland areas, outside of the areas authorized for filling under this permit.
3. Prior to the commencement of construction activities for this project, the limits of the proposed fill areas in jurisdictional waters shall be clearly flagged and staked by you and/or your contractors. All construction personnel shall be shown the location(s) of all wetland and/or stream areas outside of the construction area to prevent encroachment from heavy equipment into these areas.
4. Borrow site or sites for stockpiling fill dirt shall be prohibited within 200 feet of streambanks, 50 feet of wetlands and open waters or elsewhere runoff from the site would increase sedimentation in waters of the United States unless specifically authorized by this permit. Normal grading activities such as cutting and filling within 200 feet of streams or 50 feet of wetlands/open waters are authorized.
5. Construction debris, liquid concrete, old riprap, old support materials, or other litter shall not be placed in streams or in areas where migration into streams and/or wetlands could reasonably be expected.
6. Staging areas and equipment maintenance areas will be located at least 200 feet from

streambanks to minimize the potential for wash water, petroleum products, or other contaminants from construction equipment entering the streams.

7. The permittee shall ensure that the project's master drainage plan is designed and implemented to avoid inadvertent drainage of wetlands and inadvertent water diversion resulting in a reduction of hydrology in wetlands. The permittee shall also ensure that secondary road ditches and/or small after-project drainage ditches do not inadvertently impact wetlands or waters of the US.

8. The permittee shall minimize bank erosion and sedimentation in construction areas by utilizing BMPs for stream corridors, installing and maintaining significant erosion and sediment control measures, and providing daily reviews of construction and stream protection methods. Check dams and riprap placed in streams and wetlands as erosion control measures are considered a fill and not authorized under this permit unless they were specifically authorized by this permit.

9. All work conducted under this permit shall be located, outlined, designed, constructed and operated in accordance with the minimal requirements as contained in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. Utilization of plans and specifications as contained in "Manual for Erosion and Sediment Control, (Latest Edition)," published by the Georgia Soil and Water Conservation Commission or their equivalent will aid in achieving compliance with the aforementioned minimal requirements.

10. You shall obtain and comply with all appropriate Federal, state, and local authorizations required for this type of activity. A stream buffer variance may be required. Variances are issued by the Director of the Georgia Environmental Protection Division (EPD), as defined in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. It is our understanding that you may obtain information concerning variances at the Georgia EPD's web site at www.gaepd.org or by contacting the Watershed Protection Branch at (404) 675-6240.

11. If you or your contractors discover any federally listed threatened or endangered species and/or their habitat while accomplishing the activities authorized by this permit, you must immediately STOP work in the area and notify the issuing office of what you have found. We will initiate the Federal and state coordination required to determine if the species and/or habitat warrant further consultation with the USFWS.

12. Prior to the commencement of construction activities for this activity, the permittee shall insure that this project complies with all applicable rules, requirements, and/or regulations of the Federal Emergency Management Agency and/or the Georgia Floodplain Management Office with regard to construction activities in designated floodplains and/or floodways prior to commencement of work activity, to include revisions to the National Flood Insurance Program maps if required.

13. Prior to the commencement of any work in jurisdictional waters of the United States for this activity, you will purchase wetland mitigation credits from an approved wetland mitigation bank. You or the mitigation bank sponsor must provide this office with documentation of this purchase before any work may commence. The notice should reference the USACE file number assigned to this project.

14. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

15. The permittee, US Army Fort Stewart, is the lead federal agency for this proposed action. The permittee shall meet all lead federal agency responsibilities pursuant to Section 7 of the Endangered Species Act, prior to any work occurring in waters of the US subject to the jurisdiction of the USACE.

16. The permittee, US Army Fort Stewart, is the lead federal agency for this proposed action. Fort Stewart shall meet all lead federal agency responsibilities pursuant to Section 106 of the National Historic Preservation Act, prior to any work occurring in waters of the US subject to the jurisdiction of the USACE.

17. The site design for this project was based on the 90% design. Authorized wetland impacts are based on a standard range design. Prior to conducting any work in wetlands on this project site, the permittee shall submit final site development plans to the USACE for review and approval. No work in wetlands can occur until the USACE has reviewed and approved the final plan in writing; this concurrence letter needs to document that the 404(b)(1) process has been adequately demonstrated. It is anticipated that once final design is completed, there will be a minor reduction in the amount of wetland area that will be impacted by the project. This

anticipated change in the footprint of authorized wetland impact is authorized under this permit and modification of the permit will not be required for this change in site design.

18. If a conditioned Water Quality Certification has been issued for your project, you must comply with conditions specified in the certification as Special Conditions to this permit.

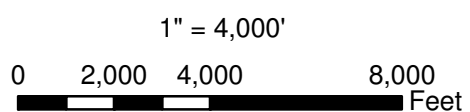
PART VI – COURSE OF ACTION FIGURES



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VICINITY MAP - PREFERRED COA



PROJECT: IPBC - INFANTRY PLATOON
BATTLE COURSE

COUNTY: BRYAN

SURVEY DATUM: UTM

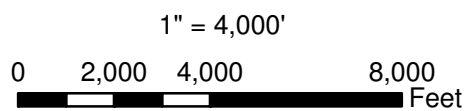
FIGURE: 1 OF 4

DATE: NOVEMBER 2009

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VICINITY MAP - CONSIDERED COAS



PROJECT: IPBC - INFANTRY PLATOON
BATTLE COURSE

COUNTY: BRYAN

SURVEY DATUM: UTM

FIGURE: 2 OF 4

DATE: NOVEMBER 2009

Figure Redacted

USGS TOPOGRAPHIC MAPS
LETFORD 7.5 MINUTE QUADRANGLE



LOCATION MAP - PREFERRED COA

1" = 2,000'

0 1,000 2,000 4,000 Feet

PROJECT: IPBC - INFANTRY PLATOON
BATTLE COURSE

COUNTY: BRYAN



SURVEY DATUM: UTM

FIGURE: 3 OF 4

DATE: NOVEMBER 2009

Figure Redacted

LEGEND

-  COA 2 BOUNDARY
-  NWI (320.08 AC.)


USGS TOPOGRAPHIC MAPS
LETFORD 7.5 MINUTE QUADRANGLE



LOCATION MAP - COA 2

1" = 2,000'

0 1,000 2,000 4,000 Feet



PROJECT: IPBC - INFANTRY PLATOON
BATTLE COURSE

COUNTY: BRYAN

SURVEY DATUM: UTM

FIGURE: 4 OF 4

DATE: NOVEMBER 2009

PART VII – PERMIT FIGURES



Figure Redacted

USGS TOPOGRAPHIC MAPS
LETFORD 7.5 MINUTE QUADRANGLE

PURPOSE: CONSTRUCT, OPERATE,
AND MAINTAIN AN INFANTRY
PLATOON BATTLE COURSE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

PROJECT VICINITY MAP

1" = 4,000'

0 2,000 4,000 8,000 Feet

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: TRIBUTARY
OF MALDEN BRANCH

COUNTY: BRYAN

FIGURE: 1 OF 6

DATE: NOVEMBER 2009

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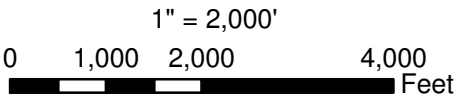
USGS TOPOGRAPHIC MAPS
LETFORD 7.5 MINUTE QUADRANGLE

PURPOSE: CONSTRUCT, OPERATE,
AND MAINTAIN AN INFANTRY
PLATOON BATTLE COURSE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

PROJECT LOCATION MAP



APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: TRIBUTARY
OF MALDEN BRANCH

COUNTY: BRYAN

FIGURE: 2 OF 6

DATE: NOVEMBER 2009



Figure Redacted

LEGEND



PROJECT BOUNDARY



JURISDICTIONAL WETLAND



NON-JURISDICTIONAL WETLAND

[Handwritten signature]

PURPOSE: CONSTRUCT, OPERATE,
AND MAINTAIN AN INFANTRY
PLATOON BATTLE COURSE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

EXISTING CONDITIONS

1" = 1,650'

0 825 1,650 3,300 Feet

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: TRIBUTARY
OF MALDEN BRANCH

COUNTY: BRYAN

FIGURE: 3 OF 6

DATE: NOVEMBER 2009



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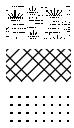
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PURPOSE: CONSTRUCT, OPERATE,
AND MAINTAIN AN INFANTRY
PLATOON BATTLE COURSE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

PROPOSED CONDITIONS

1" = 1,650'

0 825 1,650 3,300
Feet

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: TRIBUTARY
OF MALDEN BRANCH

COUNTY: BRYAN

FIGURE: 4 OF 6

DATE: NOVEMBER 2009

Figure Redacted

PURPOSE: CONSTRUCT, OPERATE, AND MAINTAIN
AN INFANTRY PLATOON BATTLE COURSE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

CROSS-SECTION

NOT TO SCALE

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: TRIBUTARY OF MALDEN
BRANCH

COUNTY: BRYAN

FIGURE: 5 OF 6

DATE: NOVEMBER 2009

Figure Redacted

CASE DOCUMENT FOR: MULTIPURPOSE MACHINE GUN RANGE
APPLICATION NUMBER 200900786
FOR A DEPARTMENT OF THE ARMY PERMIT
BY
FORT STEWART ARMY INSTALLATION, SAVANNAH, GEORGIA

PART I - INTRODUCTION

A. NAME AND ADDRESS OF APPLICANT:

U.S. Army, Fort Stewart Army Installation
Directorate of Public Works
1550 Frank Cochran Drive, Bldg. 1137
Fort Stewart, Georgia 31414

B. APPLICATION NUMBER: 200900786

C. LOCATION OF PROPOSED ACTIVITY: The site is located at Fort Stewart, in Liberty County, Georgia. The site is located in the Delta Small Arms Range (in the vicinity of latitude 31° 54' 55" north and longitude 81° 44' 18" west). A location map is provided in Appendix A to this document.

D. PROJECT DESCRIPTION: The Multi Purpose Machine Gun Range (MPMGR) is a small caliber range used to train tenant and reserve Soldiers in basic machine gun live-fire training tasks required to sustain combat proficiency; specifically, to identify and engage stationary infantry targets with a machine gun. Weapons used on this range include the M249 squad automatic weapon (SAW) (5.56mm), the M60 machine gun (7.62mm), the M240B machine gun, the MK19 automatic grenade launcher, the M42 sniper weapon, and the M2 machine gun (0.50 caliber).

Primary features of this range include 180 stationary infantry targets (SITs), 20 moving infantry targets (MITs), 20 stationary armor targets (SATs), 10 firing lanes, two 800-square-foot buildings, one ammunition breakdown building, one air-vault latrine, one covered mess facility, one 248-square-foot range operations tower, and covered bleachers with an enclosure. The actual range will be 320 meters in width by 300 meters in depth and require approximately 250 acres of clear-cutting. All targets would be fully automated, allowing numerous event and specific target

training scenarios, all of which will be computer driven and scored from the range operations center. The associated Range Operations and Control facilities will consist of the standard Small Arms Facilities. These facilities consist of an After Action Facility, Staging Facility, bleacher enclosure, range control tower, range operations and storage building, latrine, covered mess and building information systems. Supporting facilities include electric service, paving with parking for Military and Personally Operated Vehicles (POVs), site improvements, storm drainage and information systems.

The applicant completed a 90% site design for the above described range project. The standard site layout for this type of range would require the filling and/or mechanized clearing of all 103.34 acres of bottomland hardwood wetlands on the 236-acre project site. The applicant will likely be able to avoid some of the wetlands on the project site as final site design is completed for the project. However, for the purposes of this permit evaluation, the US Army Corps of Engineers (USACE) will assume that all 103.34 acres of wetlands on the proposed project site would be impacted. In addition, the applicant's proposed wetland mitigation plan is to purchase 797.77 mitigation credits to offset unavoidable impact to 103.34 acres of wetlands.

E. BASIC PURPOSE AND NEED: The basic purpose of the proposed project is to provide the Soldiers of Fort Stewart, Reserve and National Guard units with efficiency with live fire training for machine gun engagements by meeting training requirements and maintaining maneuver terrain, while utilizing existing surface danger zones (SDZs) and avoiding impacts to wetlands.

F. APPLICANT'S SUPPLEMENTAL INFORMATION: The following information is part of the administrative record for the project.

1. Project Narrative
2. Project Purpose and Need
3. Description of Resources Occurring within the Project Area, Potential Impacts, and Mitigation
4. Vicinity Map
5. Additional Studies and Response to Comments:

G. PROPOSED WORK SUBJECT TO THE JURISDICTION OF THE US ARMY CORPS OF ENGINEERS: The applicant proposes to perform work in, or affecting waters of the United States.

H. APPLICABLE STATUTORY AUTHORITY: The applicant is making application pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344).

PART II - COORDINATION

A. JOINT PUBLIC NOTICE (JPN): On April 21, 2010, the United States Army Corps of Engineers Savannah District (USACE) issued a JPN on the proposed work. Copies of the notice were provided to federal, state, and local agencies and the public. The notice was also posted on USACE public web page.

B. RESPONSE TO JOINT PUBLIC NOTICE: A summary of the comments received in response to the Joint Public Notice is presented in Table 1 below.

Table 1. Summary of Comments

COMMENTOR	OBJECT	3(b) Y/N	NO OBJECT	NO OBJECT W/CONDITION	DATE
Federal Agencies					
1. National Marine Fisheries Services			X		05-24-10
2. US Environmental Protection Agency (EIS comments)				X	04-21-10
3. US Fish and Wildlife Service					*
State of Georgia					
4. State Clearing House					*
5. Coastal Resources Division, Federal Consistency					*
6. Environmental Protection Division					*
Other					
7. Southern Environmental Law Center - Ogeechee River Keeper				X	05-21-10

* No date indicates no comment received.

C. DISCUSSION OF RESPONSES:

1. National Marine Fisheries Service (NMFS): By letter dated May 24, 2010, the NMFS stated “Based on the information in the public notice, the proposed project would not occur in the vicinity of essential fish habitat designated by the South Atlantic Fishery Management Council or NMFS. Present staffing levels preclude further analysis of the proposed activities and no further action is planned. This position is neither supportive of nor in opposition to your authorization of the proposed work.”
2. Environmental Protection Agency (EPA): There were no comments received pursuant the USACE Joint Public Notice dated April 21, 2010, from the EPA. However, Fort Stewart did receive comments and questions from the EPA Region 4, pursuant to the Draft Environmental Impact Statement (EIS) for Training Range and Garrison Support Facilities Construction and Operation at Fort Stewart, Georgia. The following are EPA comments relevant to the Section 404 permit notifications:

a. Issue 1: EPA is currently reviewing a joint public notice dated April 21, 2010, for four individual permits for four projects (DMPTR, IPBC, MPMGR and QTR) with a total of 185.9 acres of wetland impacts. This is a substantial level of wetland impacts, particularly in relation to recently permitted impacts throughout Georgia.

(1) Applicants Response: Fort Stewart avoids and minimizes wetlands impacts when possible. The implementation of the actions proposed in the preferred alternative (Alternative B Sitings) has the potential to negatively impact up to 0.2% of the Installation’s nearly 91,000 acres of wetlands. More importantly, of the “up to 0.2% of the Installation’s wetlands being impacted,” most of those impacts are not the result of adding fill to the wetlands, but rather vegetative maintenance for line-of-sight and grubbing/grading for target placement. As stated earlier in this reply, the Installation anticipates wetland impacts will be much less than projected through further avoidance and minimization incorporated during the design phases of each project after the site is selected. It is important to note, that despite the large amount of military training activity that occurs on Fort Stewart, because of the Installation’s proactive efforts to avoid, enhance, and mitigate wetlands, its wetlands remain of a high quality, retaining and transmitting large amounts of fresh water and providing habitat for countless local species. Proactive environmental stewardship programs also help to keep our wetlands

pristine. As discussed in opening paragraphs in Chapter 3 of the DEIS, Fort Stewart's Integrated Training Area Management (ITAM) program conducts land rehabilitation through the construction of low water crossings and Soldier training related to sustainability of Fort Stewart lands.

Much of the avoidance and minimization takes place before actual site selection. Training ranges of this kind have fairly specific requirements and it is not always possible to build them without impacting every wetland in the footprint. Site designers may alter certain aspects of a proposed range in response to environmental concerns during various stages of the design process, typically reviewed at the 10%, 35%, 60%, 90%, and 100% stages of completion, if they can do so while still meeting the operational and training requirements of the range. For example, the currently on-going design process reduced the wetland impacts from the IPBC to a third of what they were at the time of writing the DEIS. Impacts from the MPMGR have also been slightly reduced. Several proposed range projects were sited without wetland impacts of any kind. It is hoped that impacts from the QTR and DMPTR may be reduced, but as they are not yet in the design process this cannot be precisely determined.

It is also important to note that not all of the 185.9 acres (now 179.03 acres) of wetlands will actually be cleared, grubbed, and/or filled. Rather, that is a maximum projected "up to" amount. The actual number of acres impacted will likely be reduced further at each design level for target placement, etc.). Therefore, although the "permitted impacts" of this project may seem large in relation to other recently permitted impacts in Georgia, they do not represent substantial impacts to Fort Stewart wetlands resources. This text has been added to Section 4.3.2.2 of the FEIS.

(2) USACE Position: The combined wetland impact associated with the four proposed range projects has been reduced from 185.9 acres to 179.03 acres. In addition, as these projects approach final design, combined wetland impacts are expected to be reduced further. With regard to the amount of proposed wetland impact for these four projects relative to projects recently permitted by the Savannah District, there have been residential, commercial and reservoir projects authorized within the past five years with impacts in excess of 100 acres.

Based on the extensive experience of the USACE in review of permit applications for project located in the lower coastal plain of Georgia, most sites are typically comprised

by approximately thirty permit wetlands. Fort Stewart is typical of site in the lower coastal plain and is also approximately thirty percent wetlands. Fort Stewart is the only military base with large range construction in Coastal Georgia. Proposed wetland impacts associated with the size of this proposed range are comparable to the wetland impacts associated with past range development on Fort Stewart.

a. Issue 2: EPA is particularly concerned that all impacts have been characterized as wetland impacts when two of the four projects show the potential for streams impacts on the 7.5-minute USGS topo quad maps. EPA notes that while the Fort has had a significant cumulative impact to streams from past projects, these impacts have not been mitigated.

(1) Applicants Response: The footprints of the MPMGR and IPBC on the 7.5-minute USGS topographic quads show “blue line” streams in the areas, however, a site visit by Fort Stewart and the Georgia Environmental Protection Division (GA EPD) on January 20, 2010, found no streams. The Savannah District also did not identify any streams within the range footprints. This information was added to Section 4.3.1, of the FEIS.

Over the years, Fort Stewart has worked diligently to mitigate impacts – direct and indirect, as well as cumulative – to the Installation’s streams, as well as wetlands. During the development of the Installation’s wetland bank, for example, thousands of feet of Canoochee Creek and Strum Bay were restored without being credited to the Installation’s mitigation bank. The Installation takes pride in that fact and welcomes working with ORK and other local environmental stakeholders on future projects.

(2) USACE Position: The USACE has completed an expanded preliminary jurisdictional determination for the project site. This determination verified there are no jurisdictional streams located on the project site.

a. Issue 3: The FEIS should provide more discussion regarding the quality of the wetlands impacted. The DEIS mentions they're freshwater wetlands and that the Army has acquired mitigation credits to restore a historically but degraded hardwood wetland system. It is unclear what type of wetlands ecosystems are being impacted by the ranges and garrison proposed projects.

(1) Applicants Response: Surveys of the proposed range and garrison sites by Fort Stewart determined these ecosystems were predominantly broadleaf hardwood palustrine wetlands consisting of vegetative communities typical of wetlands in the Coastal Plain: pond pine (*Pinus serotina*), pond cypress (*Taxodium ascendens*), water oak (*Quercus nigra*), water tupelo (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), green ash (*Fraxinus pennsylvanica*), American hornbeam (*Carpinus caroliniana*), Highbush blueberry (*Vaccinium corymbosum*), fetterbush lyonia (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*) among many others including varied herbs and grasses. These plants occur with varying frequency depending on the landform and hydrology of particular areas. Animal communities are also supported by these areas – wading birds such as the Great Egret (*Casmerodius albus*), the Snowy Egret (*Egretta thula*), and the Great Blue Heron (*Ardea herodias*), amphibians such as the Bullfrog (*Rana catesbeiana*) and Wood Frog (*Rana sylvatica*), and mammals such as the Whitetail Deer (*Odocoileus virginiana*) were all observed during the surveys of the range project sites. Soil types are hydric sand-loam mixtures of the Ellabelle, Bibb, Pelham, and Leefield types. Text reflecting this information was incorporated into Section 6.4.1 of the FEIS.

(2) USACE Position: The description of the wetlands proposed to be impacted, which was submitted by the applicant and summarized above, is sufficient for the USACE to base an assessment of the wetland quality. In addition, the USACE has made multiple visits to Fort Stewart and is very familiar with the quality of wetlands located within the proposed project site(s). The USACE used this information and its knowledge of wetland habitats on Fort Stewart in its assessment

a. Issue 4: EPA is unable to fully evaluate wetlands impacts, which is an area of CWA-designated responsibility for the Agency, in the DEIS because expanded CWA 404(b)(1) analyses have not been prepared for three ranges: FY 13 Modified Record Fire Range, FY 13 10/25 Meter Zero Range, and FY 14 Convoy Live Fire Range. This is a concern. EPA would like to review and comment on these analyses before they appear in the FEIS. Please coordinate with Bob Lord, Region 4's Wetlands Program to discuss further (note, that no comments were received from Bob Lord, Region 4's Wetland Program).

(1) Applicants Response: As we mentioned in Section 4.3.2.2. of the DEIS, the Installation has not prepared §404(b)(1) analyses for the FY13 MRFR, FY13 10/25

Meter Zero Range, and FY14 CLFR because some or all impacts to wetlands will likely be avoided during the design phase of these projects. The wetlands located on these sites are less than 5 acres each. If, however, wetlands cannot be avoided, the Installation will prepare §404(b)(1) analyses for these projects and request a §404(b) permit at that time.

(2) USACE Position: Wetland impacts pursuant to the construction of the FY 13 Modified Record Fire Range, FY 13 10/25 Meter Zero Range, and FY 14 Convoy Live Fire Range have not been determined by Fort Stewart. When these proposed projects are sited and designs are complete, and if there are any proposed wetland impacts associated with them, Fort Stewart will apply for a Section 404 permit with the USACE. Any proposed wetland impacts will be evaluated at that time and coordinated through the USACE permit process. The USACE is preparing an analysis of the proposed IPBC, MPMGR, DMPTR and QTR pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for the IPBC, MPMGR, DMPTR and QTR projects.

a. Issue 5: The DEIS states that the Fort has a regional permit for low water crossings, issued in 2001 and renewed in 2006 for 5 years, which allows for a maximum of 15 acres of cumulative wetlands impacts from low-water crossings. Approximately 5 acres of wetlands have been impacted using this permit. The FEIS should discuss the application of the Fort's regional permit for low water crossings, which allows for a maximum of 15 acres of cumulative wetlands impacts from low-water crossings, how the cumulative wetlands impacts are defined, and the water quality impacts and other aquatic resources impacts associated with this permit.

(1) Applicants Response: Low water crossings are not a part of the proposed action and there are no new low water crossings anticipated in the foreseeable future. As discussed in Section 3.4.4.2, only routine maintenance and repair of existing low water crossings in the range and training areas will be conducted.

(2) USACE Position: As part of this document, the USACE has prepared a cumulative impact assessment of all known past, presently proposed, and reasonably foreseeable future impacts to aquatic resources. This assessment takes into consideration impacts associated with low water crossings.

a. Issue 6: EPA is concerned that the credit calculations using the Savannah District Standard Operating Procedure (SOP) do not fully compensate for the impacts. The Savannah District has frequently indicated to EPA that the SOP is not applicable to large impacts, such as those over 10 acres. EPA agrees and has proposed a scaling factor to address the cumulative impacts of large projects such as the factor used in the Charleston District SOP. This is the approach used by the Georgia Department of Transportation for its projects that exceed the 10 acre threshold. For very large projects this scaling factor could be capped at an appropriate level. EPA has suggested 3.0 acres, which is equal to the next largest factor used in the SOP. Application of the SOP without a scaling factor for large impacts, particularly the 108.1 acres for the MPMGR is not appropriate, even according to past finding from the Savannah District.

(1) Applicants Response: While a scaling factor may be appropriate to use in many large scale projects where a great deal of fill is being introduced into the wetland system and where the projects require large amounts of impermeable surfaces, neither of these considerations constitute significant components of any of the projects under consideration in the DEIS. Of this filled acreage only a small amount will include the introduction of impermeable surfaces. The only impermeable surfaces will consist of the range operations area and cover only 2% of each project footprint. As noted in Answer #1 above, while maximum projected “up to” amounts have been provided, most of those impacts are not the result of adding fill to the wetlands, but rather vegetative maintenance for line-of-sight and grubbing/grading for target placement. This information is located in Section 4.3.2.2.

As a result, it is the Installation’s position that use of any scaling factor is not necessary to compensate for the cumulative impacts associated with these types of projects and applying a scaling factor, as called for in the Charleston District’s SOP, to these types of projects would appear to be arbitrary and capricious as it would not appear to be based on any sound engineering or hydrologic rational but would appear to be more punitive than compensatory in nature.

Moreover, the Installation always takes into account secondary wetland impacts. In reference to the MPMGR, which is the project that contains the majority of the 179.03 acres of wetlands to be potentially impacted, the Installation has evaluated potential secondary cumulative impacts. In our planning process, as noted above, the Installation

took a “worst case scenario” approach when determining how to compensate for the quantity of wetlands loss. The Installation is planning to off-set secondary cumulative wetland effects from this range and has obtained an additional 287 mitigation credits from the Wilkinson-Oconee Bank. The Installation did account for the lost functions and values impacted by the project with respect to direct and indirect impacts.

As a cooperating agency to this EIS, the Savannah District was consulted with regard to the factors noted above. Additionally, Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Having reviewed these documents and the associated 404(b)(1), the Savannah District did not suggest a need to utilize a scaling factor.

(2) USACE Position: The present total proposed wetland impact for the four proposed ranges is 179.03 acres. As discussed by the applicant above, not all of these proposed impacts are for fill, but a certain percentage would involve mechanized land clearing impacts. Clearing wetlands of vegetation and maintaining them in scrub/shrub vegetation results in a change in function, but not a total loss in function. The mitigation credits proposed by Fort Stewart are assuming a total loss in function. The proposed mitigation plan is to purchase 1,391 credits to compensate for a total of 179 acres of wetland impact for all four ranges. This is a credit to impact ratio of 7.8:1. On average, three credits are generated for each acre of wetland restoration at the Wilkinson/Oconee Mitigation Bank, where credits will be purchased for the FY11 ranges. Therefore, the effective mitigation ratio for the FY11 Multipurpose Machine Gun Range and FY11 Infantry Platoon Battle Course projects would be approximately 2.6:1 of wetland restoration. The Applicant has not ruled out other acceptable compensatory mitigation alternatives to mitigate wetlands impact (provided through mitigation banks or in-lieu fee programs) for the FY13 Digital Multipurpose Training Range and the FY13 Qualification Training Range. It is the position of the USACE that the mitigation proposed for this MPMGR project would meet the requirements of the new mitigation rule.

a. Issue 7: The DEIS indicates that approximately one-third of the Fort's lands are wetlands. It also states some of the remaining 160 credits contained in the Fort's on-site mitigation bank will be used for the Garrison construction projects. Additionally, the Army has previously purchased credits from an established off-Fort wetland mitigation bank in accordance with the Compensatory Mitigation Rule (33 CFR Part 332) to cover the proposed range projects. The Fort canvassed the available mitigation banks nearly

one year ago, which may not reflect the current banks and credit availability. Given the opportunity, EPA would have discouraged the use of the Wilkinson - Oconee Mitigation Bank since it is out of the watershed, out of the ecoregion, and likely does not fully compensate for the functions lost at the project sites. EPA is also concerned, despite the rationale provided in the DEIS, that the Fort is not fully debiting its own mitigation bank before going to off-site alternatives. The Fort's mitigation bank is within the same watershed and ecoregion and thus more likely to replace the lost wetland functions. There appears to be ample time to expand this bank to accommodate the future needs presented as a reason for not fully using it for these projects. Typically, EPA discourages applicants from purchasing mitigation credits until the Section 404 permit has been issued, because this precludes other, possibly preferable, mitigation actions.

(1) Applicants Response: Although the Fort Stewart mitigation bank has sufficient credits to offset impacts from the two Garrison support construction projects, the Army has determined it is not sufficient to cover the unavoidable negative impacts to wetlands from the FY11-14 training range construction projects, for which the Installation must purchase credits from an off-site wetlands mitigation bank. The remaining acres within the Installation wetland bank allows Commanders to respond to emergency range training requirements, which surface from “In Theater” conditions and scenarios, or award Congressional Garrison or training additions that must be executed by Fort Stewart within one year or less. If Commanders did not have this flexibility, Installation projects with unavoidable wetland impacts would be cancelled or held up in significant delays awaiting Congressional funding to purchase “off-Post” wetland credits.

As discussed in Chapter 6 of the DEIS, despite the physical distance between the Wilkinson - Oconee Bank (WOB) restoration area and Fort Stewart, looking at the choice from a more holistic watershed perspective shows that the two locations are rooted in an interconnected complex of wetlands and open water bodies. The WOB wetlands were determined to be an ecologically acceptable replacement for the small portion of Fort Stewart wetlands impacts due to the proposed action. Hydrologic and habitat wetland functions will remain unimpaired.

At the time the credits were purchased, there were no other readily available mitigation banks open in the primary service area with the quantity and quality of credits needed to cover the Installation’s projected needs. The Federal appropriations process did not provide the Installation with the flexibility to wait until Section 404 permits were issued

to initiate the required solicitation process to purchase the credits without putting the funding for the specific FY 2011 range projects in jeopardy. As part of the Installation's standard procurement processes, market research is conducted in accordance with the Federal Acquisition Regulation. This research requirement as it relates to contracting of off-post wetland credit purchases includes evaluating the current market and availability of primary service area mitigation credits. This process will also be implemented when seeking mitigation options for ranges beyond FY11.

For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs). For instance, the Installation is actively seeking opportunities to incorporate off-site compensatory mitigation projects into its private lands conservation initiatives in partnership with the Georgia Land Trust and will continue to do so to further provide compensatory mitigation within the primary service area and watershed. Under the Savannah District's SOP, the Wilkinson-Oconee Bank (WOB) is grandfathered as a pre-existing bank created prior to the Compensatory Mitigation Final Rule (please refer to Answer 9 below). As such, the WOB is an acceptable mitigation alternative that is in full compliance with the policy and purpose of mitigation required by the CWA, the Savannah District SOP, and the Compensatory Mitigation Final Rule. This information contained in this answer has been added to Section 6.4.1.1 of the FEIS.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. At the time of the pre-application meeting, the USACE agreed to allow the applicant to purchase credits from the secondary mitigation zone of the Wilkinson-Oconee Bank, which was the only bank with available credits. The agreement was made with the applicant in order to allow them time to procure funds necessary to provide mitigation when needed. The on-base Pond Four Mitigation Bank will be used to mitigate smaller on-post projects in the future that would likely be on a short time-line for planning, permitting and construction. The Army procurement process takes too long to allow for the purchase of mitigation credits for these small, short, time-line projects. Therefore, the USACE agrees with the applicant to save Pond Four credits for these future small projects.

a. Issue 8: EPA disagrees with the statement that applying for a CWA Section 404 permit is a minimization of wetlands impacts. The DEIS states "While the Army strives

to avoid negative impacts to wetlands when it sites new range and training facilities on Fort Stewart, if impacts to regulated wetlands cannot be avoided, the Army minimizes those impacts by applying for a Section 404 permit as required by the Clean Water Act. CWA 404 requires a permit for any dredge and fill impacts to jurisdictional waters, including wetlands. The CWA is a regulatory requirement, not a mitigation option. The FEIS should clarify this misrepresentation of CWA Section 404 permit program as a form of mitigation.

(1) Applicants Response: The information in the text and tables, located in Section 6.4.3 of the FEIS, has been edited to identify more accurately and clearly the differences between what is a required measure, such as a regulatory permit, and what is a mitigation option.

(2) USACE Position: The applicant made the suggested correction.

a. Issue 9: The DEIS discusses wetlands compensatory mitigation in context of NEPA-required mitigation when it should also discuss how the proposed mitigation meets the requirements of the Compensatory Mitigation for Losses of Aquatic Resources Final Rule. NEPA requires that to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with environmental impact analyses and related surveys and studies required by the Fish and Wildlife Coordination Act, the National Historic Preservation Act of 1966, the Endangered Species Act of 1973, and other environmental review laws and executive orders. The Compensatory Mitigation for Losses of Aquatic Resources Final Rule is considered to be a relevant "other environmental review law" as it is one of the CWA Section 404 implementing regulations. The FEIS should discuss and apply the Final Rule in its wetlands mitigation discussion.

(1) Applicants Response: The Installation utilized the Compensatory Mitigation Rule (33 CFR Part 332) when developing its mitigation plan for the proposed FY11 MPMGR, FY11 IPBC, FY13 QTR, and the FY13 DMPTR. Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Section 6.4.1.1 of the FEIS has been revised to clearly explain that a mitigation decision has not yet been made for the FY13 QTR and the FY13 DMPTR. For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee

programs). Similar to the process outlined in the Compensatory Mitigation Rule, the Installation's standard procurement processes conducts market research in accordance with the Federal Acquisition Regulation. This research requirement as it relates to contracting of off-post wetland credit purchases includes evaluating the current market and availability of primary and secondary service area mitigation credits. This process will also be implemented when seeking mitigation options for ranges beyond FY11.

According to 33 CFR 332, *Compensatory Mitigation for Losses of Aquatic Resources*, mitigation bank credits may be used if the project is in the service area of a mitigation bank. Section 332.3 (b)(2) has a description of why mitigation bank credits are acceptable in compensating for wetland impacts:

“Since an approved instrument (including an approved mitigation plan and appropriate real estate and financial assurances) for a mitigation bank is required to be in place before its credits can begin to be used to compensate for authorized impacts, use of a mitigation bank can help reduce risk and uncertainty, as well as temporal loss of resource functions and services. Mitigation bank credits are not released for debiting until specific milestones associated with the mitigation bank site's protection and development are achieved, thus use of mitigation bank credits can also help reduce risk that mitigation will not be fully successful. Mitigation banks typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation. Also, development of a mitigation bank requires site identification in advance, project-specific planning, and significant investment of financial resources that is often not practicable for many in-lieu fee programs. For these reasons, the district engineer should give preference to the use of mitigation bank credits when these considerations are applicable.” Fort Stewart followed these requirements during the development of its mitigation plan.

(2) USACE Position: See USACE Position on USEPA issue 7 above.

a. Issue 10: While EPA does not expect the precise replication of all wetlands adversely impacted by the proposed action, the FEIS should explain how the proposed mitigation will adequately compensate for lost wetland functions and values such that it results in no net loss of wetland functions and values. This discussion is absent from the DEIS. Furthermore, since the U.S. Army Corp of Engineers (USACOE) cannot issue a CWA 404 permit if there is a less damaging practicable alternative, the FEIS should

discuss compliance with this provision.

(1) Applicants Response: The wetlands in the Wilkinson-Oconee Bank (WOB) are “in-kind” to the wetlands on Fort Stewart. Consistent with the fact that both areas are on Georgia’s Coastal Plain, wetlands within the WOB are very similar to those slated for impact by the proposed Fort Stewart range projects. Surveys of the proposed range sites by Fort Stewart determined that dominant vegetation communities consist of plants typical of wetlands in the Coastal Plain: mixtures of pond and bald cypress (*Taxodium ascendens* and *distichum*, respectively), water oak (*Quercus nigra*), water tupelo (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), green ash (*Fraxinus pennsylvanica*), privet (*Ligustrum sinense*), American hornbeam/ironwood (*Carpinus caroliniana*), highbush blueberry (*Vaccinium corymbosum*), fetterbush lyonia (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*) among many others including varied herbs and grasses. These plants occur with varying frequency depending on the landform and hydrology of particular areas, and essentially identical communities with similar distribution are found in the Wilkinson-Oconee’s Mitigation Bank. Animal communities also supported by these areas are: wading birds, such as the Great Egret (*Casmerodius albus*), the Snowy Egret (*Egretta thula*), and the Great Blue Heron (*Ardea Herodias*); amphibians, such as the Bullfrog (*Rana catesbeiana*) and Wood Frog (*Rana sylvatica*); and mammals, such as the Whitetail Deer (*Odocoileus virginiana*) were all observed during the surveys of the range project sites, and have been similarly reported in the Wilkinson-Oconee area. The American alligator (*Alligator mississippiensis*) is common throughout Fort Stewart and has also been observed at Wilkinson-Oconee. The locally endangered Wood Stork *Mycteria Americana* can also be found at both locations (though they are not expected to be impacted by the proposed projects).

Soil types were also consistent between the two areas. The Ellabelle, Bibb, Pelham, and Leefield types predominated in the proposed project areas. Analyses of the Natural Resources Conservation Service profiles show these to be comparable to the Chewacla, Chastain and Congaree soils which cover the Wilkinson-Oconee area. All are characterized by loamy surface layers and clayey or loamy subsoils, and all soils are on the National Hydric Soils list.

Although the area of the Coastal Plain in which the Wilkinson-Oconee area is situated features more relief than that of Fort Stewart, the specific area of the restoration situated

as it is in the Oconee River floodplain, is flatter than the surrounding general topography, resulting in a similar hydrologic profile to Fort Stewart. The bottomland hardwood wetland systems found at both locations share the typical functions of holding temporary storage surface water, maintenance of characteristic subsurface hydrology, removal and sequestration of elements, retention of particulates, export of organic carbon, maintenance of characteristic plant community, and habitat for wildlife. Based on this comparison, despite the distance between the two areas, wetlands on Fort Stewart and at the Wilkinson-Oconee restoration area are very similar and, therefore, their use for mitigation fully supports the requirement for “no net loss”. Text reflecting this information was incorporated into Section 6.4.1.1 of the FEIS.

(2) USACE Position: As discussed above, the mitigation proposed by the applicant would comply with the new mitigation rule. The USACE is preparing an analysis of the proposed project pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for this proposed project. This analysis would also confirm that the final proposed site development plan for this range, as well as the other three ranges being reviewed, was the least environmentally damaging practicable alternative that would meet the basic project purpose.

a. Issue 11: The DEIS states that the USACOE documents approximately 1,467,774 acres of wetlands impacted within 20 Georgia counties and by deducting 1,982.87 acres of wetlands impacts since 1990 there are at least 1,465,791.13 acres of wetlands remaining. According to the DEIS, this amounts to a loss of 0.14% of wetlands since 1990 - an insignificant amount." It is unclear if the USACOE document referenced in the DEIS is referring to the 1,467,774 acres of wetlands as being impacted in the 20 Georgia counties or existing (un-impacted) wetlands in these counties. This paragraph needs to be clarified in the FEIS.

(1) Applicants Response: There are 1,467,774 existing acres of existing wetlands within the 20 Georgia counties referenced, of which 1,465,791.13 acres of wetlands are un-impacted. This is how the Installation calculated a loss of 0.14% of wetlands since 1990 and the determination of “insignificant” derived. Text clarifying this information was incorporated into Section 5.3.3.2 of the FEIS.

(2) USACE Position: Fort Stewart corrected the FEIS, and clarified the information that EPA questioned.

3. US Fish and Wildlife Service (USFWS): No comments received. The US Army, Fort Stewart is the lead federal agency for this proposed action and has completed consultation with the USFWS. The Final Biological Opinion can be found in Appendix B of the FEIS.
4. Georgia State Clearinghouse: By memorandum dated June 8, 2010, the Georgia State Clearinghouse stated that the request has been found to be consistent with state goals, policies, plans, objectives, and programs, with which the state is concerned.
5. Georgia Department of Natural Resources, Coastal Resource Division (Georgia CRD): No comments were received from Georgia CRD. However, this office must certify that the project is consistent with the Georgia Coastal Management Program prior to the USACE completing its review of the subject application.
6. Georgia Department of Natural Resources, Environmental Protection Division (Georgia EPD): No comments were received from Georgia EPD. Fort Stewart is in consultation with the Georgia Environmental Protection Division regarding a water quality certification pursuant to Section 401 of the Clean Water Act. The USACE would include a copy of the 401 water quality certification with any permit issued. In addition, the special condition of any permit issued would require the permittee to adhere to the conditions of the 401 water quality certification.
7. Southern Environmental Law Center (SELC): By letter dated May 21, 2010, the SELC provided the following comments on behalf of the Ogeechee Riverkeeper, Inc. (ORK):

a. Issue 1: The applicant's alternatives analysis in the DEIS includes alternative COA 3 which is a "heavily utilized" existing multipurpose range complex (MPRC) (*Fort Stewart note: the range proposed for construction is actually a Digital Multi-Purpose Training Range, or DMPTR*). DEIS, Appendix D at 10. This, of course, begs the question as to why the Applicant is including as an alternative a site that could never be used even if it determined that the site would have fewer environmental impacts. Alternative COA 3 is not a practicable alternative at all.

- (1) Applicants Response: Transforming the existing MPRC was an option

legitimately considered as a practical alternative but rejected due to current and expected military operations and training demands. Transforming the existing MPRC and other operational ranges will remain a consideration on future range projects as the types of military training and weapon systems evolve over time and possibly render older ranges obsolete. An example of this is the COA 1 for the DMPTR, which involves the transformation of another existing range, Red Cloud Foxtrot. In siting the DPMTR over top of an existing range, we are attempting to minimize and avoid the wetland impacts that would be associated with constructing the DPMTR elsewhere on Fort Stewart.

(2) USACE Position: Given the amount of development on the base as a whole, the re-use of an existing range should be considered as a potential alternative. The elimination of alternatives as not being practicable is a standard part of the Section 404(b)(1) Guidelines.

b. Issue 2: The other alternative which the Applicant examined yielded wetlands impacts of 240 acres. It is difficult to accept that there were no other practicable alternatives at Fort Stewart for this proposed range. Two-hundred forty acres is more than the combined wetlands impacts of all four of the proposed ranges.

(1) Applicants Response: Based on the Installation's location in a relatively flat coastal plain and the location of pre-existing military training ranges and facilities on high ground, impacts to 240 acres of wetlands to build a new 995 acre range is not beyond the realm of reasonable consideration as a viable alternative. The fact that wetland impacts in the preferred alternative are less than five percent of the overall range size demonstrates the Installation's efforts to avoid and minimize wetland impacts associated with the siting of new military ranges and training facilities. Army Installations, including Fort Stewart, must maintain their training lands to fully sustain mission requirements for national security. The way the Army does this is through its master planning process. It is important to note that the Installation's planning efforts to minimize wetland impacts begins with attempts to select a site with the least amount of wetlands. At this point in the planning process, the range design is limited to placement on site of a footprint of the proposed range. This footprint shows the maximum number of wetland impacts and that is why we state "up to" so many acres; however, once a final site is selected, further attempts are made to avoid and minimize negative impacts to wetlands inside the range footprint through the range design process.

The final range design cannot be prepared prior to a site being selected. Also, despite Fort Stewart's large size, much of its lands are already committed to other training, recreational, and environmental activities. Maneuver and dismounted maneuver training areas occupy large portions of the Installation, where the integration of large firing ranges is not suitable. The west side of the Installation is devoted to maneuver training and, in its entirety, is necessary to meet Brigade mission training requirements. Maneuver training is necessary in upland areas to reduce wetland impacts resulting from heavy wheeled and tracked military vehicles, as well as to avoid vehicles from getting stuck in wet areas. The southeast side of the Installation is devoted to dismounted maneuver training (i.e. training on foot) and also contains a wooded recreational area for campers. More than 100,000 acres are devoted to the restoration and management of environmentally sensitive areas, such as habitat for threatened and endangered species (including the red-cockaded woodpecker (RCW) and gopher tortoise) and wetlands.

During the planning process for the FY13 DMPTR, which Fort Stewart initiated in 2006, the Installation developed a total of eight siting alternatives. This process allowed both operational and environmental aspects, including impacts to wetlands, to be thoroughly analyzed in a collective manner by members of the Installation's Environmental Division, Range Control Division, and Master Planning Division. As the analysis progressed, these siting alternatives were ranked using screening criteria, as discussed in Chapter 2, *Description of the Proposed Action and Alternatives*, of the FEIS. Minimization of environmental impacts, including wetlands, was a factor in which alternatives were considered viable and which were not. One DMPTR discounted alternative, not discussed in the FEIS, contained 673 acres of wetlands impact. Another site, also not considered any further, contained 313 acres of wetland impact and would have resulted in the elimination of 683 acres of RCW habitat (compared to an RCW habitat loss of 22.4 acres and 31 acres as a result of Alternatives B and C, respectively). Even though these eliminated sites were operationally viable, they were removed from consideration after environmental impacts were determined to be significant.

(2) USACE Position: There are variety of safety, noise, and other constraints that limit where a live fire range could be located on Fort Stewart. The Army is the "expert" for siting ranges and conducted an intensive alternatives analysis for locating this, and the other three range projects; to avoid wetland impacts, while meeting other site constraints. The Section 404(b)(1) analysis to be prepared for this action will fully address this issue.

c. Issue 3: Multi Purpose Machine Gun Range (MPMGR). As an alternative for this range, the Applicant proposed course of action (COA) 5 which would have yielded wetlands impacts of less than 9 acres had it been chosen as the preferred alternative. However, the Applicant eliminated this alternative because it emerged as the preferred alternative for DMPTR. As such, COA 5 should not be discussed as a viable alternative for the MPMGR.

(1) Applicants Response: As a large military training and deployment complex, Fort Stewart must examine and analyze the cumulative effects of all its proposed ranges within its training platform as constrained by the Installation borders, adjacent and associated training facilities, and surface danger zones relative to one another. This analysis is in addition to examining other resources, such as wetlands, to optimize training while minimizing the overall impact to our environment. The decisions made on the siting of each range and what are practical alternatives are inherently intertwined and interdependent. This may not have been reflected well in Section 404 permit applications, but is more fully explained in Section 6.4.1.1 of the FEIS. The possibility remains that the MPMGR could be selected to occupy that site currently under consideration for the DMPTR if the DMPTR is ultimately selected to occupy another site.

Also, many other impacts, in addition to wetland impacts, are examined and analyzed in the siting of new ranges and training facilities, including other environmental factors (such as threatened and endangered species) and non-environmental factors (such as the impact the site has on the ability to conduct timely and realistic military training based on current threats to our nation's armed forces when engaged in combat or peace keeping operations overseas). Both the MPMGR and DMPTR were approved for funding, and as has been noted, COA 2 for the DMPTR would have carried a level of wetland impact even greater than the current impacts from both the MPMGR and the DMPTR. Given the many constraints (see Appendix D for siting criteria) at play in siting both ranges, the preferred COAs for the two ranges were seen as a necessary compromise for ensuring all needed ranges are built and military training requirements met.

(2) USACE Position: See discussion for SELC issue 2 above.

d. Issue 4: Notwithstanding the above, the Applicant needs to more adequately explain why it did not select COA 5 as the preferred alternative for MPMGR considering it would have reduced the wetlands impacts from 116.7 acres down to 9 acres.

(1) Applicants Response: Unfortunately, it would not be possible to ignore the fact that the site was already selected as the preferred site for the DMPTR, as suggested. Two independently proposed ranges cannot have the same preferred site. The Installation agrees that nine acres of impact for a 250-acre range is far more desirable than 116.7 acres of wetland impacts (which we now have down to 103.3 acres); however, wetlands impacts for this specific range were only one factor examined and analyzed in selecting this site as the preferred alternative. Selection of this site as the preferred alternative helps the Installation's ability to avoid and minimize the overall and cumulative impacts to all wetlands associated with planned or reasonably anticipated range construction, as reflected in Sections 4.3.2, 5.3.3.2, and 6.4.1 of the FEIS.

(2) USACE Position: See discussion for SELC issue 2 above.

e. Issue 5: Qualification Training Range (QTR). For this proposed range, the Applicant discusses but then rules out COA 3, which would have less wetlands impacts than the Preferred Alternative B. The Applicant rules out this alternative site because it is the proposed location for a future Modified Record Fire (MRF) range, which is not before the Corps at this time. Again, given the significant size of Fort Stewart, alternatives for one range should not be eliminated for future potential ranges, or, such a site should never be discussed as an alternative. The Applicant is required under the Section 404(b)(1) guidelines to indentify "practicable alternatives," not alternatives that could never be chosen regardless of how favorable they might be from an environmental standpoint.

(1) Applicants Response: Again, as a large military training and deployment complex, Fort Stewart must examine and analyze the cumulative effects of all its proposed ranges within its training platform as constrained by the Installation borders, adjacent and associated training facilities, and surface danger zones relative to one another. This analysis is in addition to examining other resources, such as wetlands, to optimize training while minimizing the overall impact to our environment. The decisions made on the siting of each range and what are practical alternatives are inherently intertwined and interdependent. This may not have been reflected well in Section 404 permit applications; but is more fully explained in the FEIS. One reason the COA 3 was deemed unsuitable was the fact the site is currently an operational range that is projected for reuse or transformation as a future MRF range. While Fort Stewart has a large land

mass, much of its land mass is not environmentally or operationally suitable for range construction or for a number of considerations. Although significant, wetland impacts are only one of several significant factors considered when examining the suitability for siting of a range. The remaining lands that are suitable for future range construction are limited because the best locations are currently being used to capacity as military ranges or training areas. The Installation contains many sensitive resources, such as wetlands and protected species habitat, which limit the locations suitable for constructing new military training ranges that are capable of maximizing military training while minimizing environmental impacts. Because of the operational impacts examined and analyzed when siting ranges, and because the Installation was able to minimize impacts and mitigate those that did occur, the decision was made to retain the COA 3 site for a future project. The alternative was practicable but was not chosen in this instance.

(2) USACE Position: See discussion for SELC issue 2 above.

f. Issue 6: Inadequate Mitigation. Ogeechee Riverkeeper (ORK) is concerned with several flaws in the Application's proposed mitigation measures. Considering the Project's significant destruction and alteration of wetlands, it is imperative that the value and functions of wetlands on Fort Stewart are mitigated. ORK shares the concerns expressed by the Environmental Protection Agency (EPA) in its comments on the Draft Environmental Impact Statement dated May 14, 2010. First, the Applicant's usage of the Savannah District's Standard Operating Procedure (SOP) for calculation of mitigation credits is inconsistent with the district's position that the SOP should not be applied to projects with large wetlands impacts. Given the Project's substantial wetlands impact of 190 acres, we urge the Corps to apply the SOP, but do so with a scaling factor to address the cumulative impact of the Project, an approach that is followed by the Charleston District. The Applicant's use of the SOP without a scaling factor will not successfully and adequately replace the lost functions and values of wetlands impacted by the Project.

(1) Applicants Response: The implementation of the actions proposed in the preferred alternative (Alternative B Sitings) has the potential to negatively impact up to 0.2% of the Installation's nearly 91,000 acres of wetlands. More importantly, of the up to 0.2% of the Installation's wetlands being impacted, most of those impacts are not the result of adding fill to the wetlands, and as stated earlier, the Installation anticipates wetland impacts will be much less than projected through further avoidance and

minimization incorporated during the design phases of each project after the site is selected. It is important to note, that despite the large amount of military training activity that occurs on Fort Stewart, because of the Installation's proactive efforts to avoid, enhance and mitigate wetlands, its wetlands remain of a high quality, retaining and transmitting large amounts of fresh water and providing habitat for countless local species.

While a scaling factor may be appropriate to use in many large scale projects where a great deal of fill is being introduced into the wetland system and where the projects require large amounts of impermeable surfaces, neither of these considerations constitute significant components of any of the projects under consideration in the FEIS. Of this filled acreage only a small amount will include the introduction of impermeable surfaces. The only impermeable surfaces will consist of the range operations area and cover only 2% of each project footprint. As noted above, while maximum projected "up to" amounts have been provided, most of those impacts are not the result of adding fill to the wetlands, but rather vegetative maintenance for line-of-sight and grubbing/grading for target placement. This information is located in Section 4.3.2.2.

As a result, it is the Installation's position that use of any scaling factor is not necessary to compensate for the cumulative impacts associated with these types of projects and applying a scaling factor, as called for in the Charleston District's SOP, to these types of projects would appear to be arbitrary and capricious as it would not appear to be based on any sound engineering or hydrologic rational but would appear to be more punitive than compensatory in nature.

Moreover, the Installation always takes into account secondary wetland impacts. In reference to the MPMGR, which is the project that contains the majority of the 190 acres (now 179.03 acres) of wetlands to be potentially impacted, the Installation has evaluated potential secondary / cumulative impacts. In our planning process, as noted above, the Installation took a "worst case scenario" approach when determining how to compensate for the quantity of wetlands loss. The Installation is planning to off-set secondary / cumulative wetland effects from this range and has obtained an additional 287 mitigation credits from the Wilkinson-Oconee Bank. The Installation did account for the lost functions and values impacted by the project with respect to direct and indirect impacts.

As noted in Sections 3.4.5 and 4.3.2 of the FEIS, the Savannah District is a cooperating

agency to this EIS, and was consulted with regard to the factors noted above. Additionally, Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Having reviewed these documents and the associated 404(b)(1), the Savannah District did not suggest a need to utilize a scaling factor.

(2) USACE Position: The USACE does not require the usage of the Savannah District's Standard Operating Procedure (SOP) for calculation of mitigation credits for projects of this size. The USACE does not use any scaling factor in association with the USACE SOP. The present total proposed wetland impact for the four proposed ranges is 179.03 acres. As discussed by the applicant above, not all of these proposed impacts are for fill, but a certain percentage would involve mechanized land clearing impacts. Clearing wetlands of vegetation and maintaining them in scrub/shrub vegetation results in a change in function, but not a total loss in function. The mitigation credits proposed by Fort Stewart are assuming a total loss in function. The proposed mitigation plan is to purchase 1,391 credits to compensate for a total of 179 acres of wetland impact for all four ranges. This is a credit to impact ratio of 7.8:1. On average, three credits are generated for each acre of wetland restoration at the Wilkinson/Oconee Mitigation Bank, where credits will be purchased for the FY11 ranges. Therefore, the effective mitigation ratio for the FY11 Multipurpose Machine Gun Range and FY11 Infantry Platoon Battle Course projects would be approximately 2.6:1 of wetland restoration. The Applicant has not ruled out other acceptable compensatory mitigation alternatives to mitigate wetlands impact (provided through mitigation banks or in-lieu fee programs) for the FY13 Digital Multipurpose Training Range and the FY13 Qualification Training Range. It is the position of the USACE that the mitigation proposed for this MPMGR project would meet the requirements of the new mitigation rule.

g. Issue 7: Second, the Applicant's choice of the Wilkinson-Oconee Mitigation Bank conflicts with the policy and purpose of mitigation required by the CWA. Under the Corp's regulation, the Applicant's "compensatory mitigation should be located within the same watershed as the impact site" 33 C.F.R. § 332.3. The purpose of this rule is to preserve and maintain water resources within a watershed, and ensure that wetlands lost are compensated by wetlands with similar characteristics, values, and functions. The Application, however, proposes mitigation outside of Fort Stewart and in another

watershed at the Wilkinson-Oconee Mitigation Bank. This choice not only conflicts with the Corps' policy but also ignores the available 160 credits contained in Fort Stewart's on-site mitigation bank. ORK believes that the Corps should require the Applicant's use of the on-site mitigation.

(1) Applicants Response: Mitigation credits generated from the on-Post compensatory mitigation bank are not being used because there are insufficient credits available to satisfy requirements associated with the projects and the Installation needs to retain the few credits remaining for potential use to compensate for last minute and unanticipated Congressional add-on projects that occur on the Installation on a not-infrequent basis. Regarding use of mitigation banks, the Compensatory Mitigation for Losses of Aquatic Resources Final Rule states, "In many cases, the environmentally preferable compensatory mitigation may be provided through mitigation banks or in-lieu fee programs because they usually involve consolidating compensatory mitigation projects where ecologically appropriate, consolidating resources, providing financial planning and scientific expertise (which often is not practical for permittee-responsible compensatory mitigation projects), reducing temporal losses of functions, and reducing uncertainty over project success." The rule then lists types of compensatory mitigation measures in order of preference. The rule states that "[in] general, the required compensatory mitigation should be located within the same watershed as the impact site." But mitigation bank credits may be used if the project is in the service area of the bank. Section 332.3 (b)(2) has a description of why mitigation bank credits are given in the regulation:

"Since an approved instrument (including an approved mitigation plan and appropriate real estate and financial assurances) for a mitigation bank is required to be in place before its credits can begin to be used to compensate for authorized impacts, use of a mitigation bank can help reduce risk and uncertainty, as well as temporal loss of resource functions and services. Mitigation bank credits are not released for debiting until specific milestones associated with the mitigation bank site's protection and development are achieved, thus use of mitigation bank credits can also help reduce risk that mitigation will not be fully successful. Mitigation banks typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation. Also, development of a mitigation bank requires site identification in advance, project-specific planning, and significant investment of financial resources that is often not practicable for many in-lieu fee

programs. For these reasons, the district engineer should give preference to the use of mitigation bank credits when these considerations are applicable.” Fort Stewart followed these requirements during the development of its mitigation plan.

Under the Savannah District’s SOP, the Wilkinson-Oconee Bank is “grandfathered” as a pre-existing bank created prior to the Compensatory Mitigation Final Rule. As such, the Wilkinson-Oconee Bank is an acceptable mitigation alternative that is in full compliance with the policy and purpose of mitigation required by the CWA, the Savannah District SOP, and the Compensatory Mitigation Final Rule. Fort Stewart’s use of the Wilkinson-Oconee Bank as mitigation for the proposed FY11 range projects was fully coordinated with the Savannah District, which was a cooperating agency on the EIS.

The wetlands in the Wilkinson-Oconee Bank are “in-kind” to the wetlands on Fort Stewart. Consistent with the fact that both areas are on Georgia’s Coastal Plain, wetlands within the Wilkinson-Oconee are essentially identical to those slated for impact by the proposed Fort Stewart range projects. Surveys of the proposed range sites by Fort Stewart determined that dominant vegetation communities consist of plants typical of wetlands in the Coastal Plain: mixtures of pond pine (*Pinus serotina*), pond cypress (*Taxodium ascendens*), water oak (*Quercus nigra*), water tupelo (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), green ash (*Fraxinus pennsylvanica*), American hornbeam (*Carpinus caroliniana*), Highbush blueberry (*Vaccinium corymbosum*), fetterbush lyonia (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*) among many others including varied herbs and grasses. These plants occur with varying frequency depending on the landform and hydrology of particular areas, and essentially identical communities with similar distribution are found in the Wilkinson-Oconee’s Mitigation Bank. Animal communities also supported by these areas are: wading birds, such as the Great Egret (*Casmerodius albus*), the Snowy Egret (*Egretta thula*), and the Great Blue Heron (*Ardea Herodias*); amphibians, such as the Bullfrog (*Rana catesbeiana*) and Wood Frog (*Rana sylvatica*); and mammals, such as the Whitetail Deer (*Odocoileus virginiana*) were all observed during the surveys of the range project sites, and have been similarly reported in the Wilkinson-Oconee area.

Soil types were also consistent between the two areas. Hydric sand-loam mixtures of the Ellabelle, Bibb, Pelham, and Leefield types predominated in the proposed project areas. Analyses of Natural Resources Conservation Service profiles show these to be comparable to the Chastain and Congaree soils which cover the Wilkinson-Oconee area.

All soils are on the National Hydric Soils list. Although the area of the Coastal Plain in which the Wilkinson-Oconee area is situated features more relief than that of Fort Stewart, the specific area of the restoration is flatter than the surrounding general topography, resulting in a similar hydrologic profile to Fort Stewart. The bottomland hardwood wetland systems found at both locations share the typical functions of holding temporary storage surface water, maintenance of characteristic subsurface hydrology, removal and sequestration of elements, retention of particulates, export of organic carbon, maintenance of characteristic plant community, and habitat for wildlife. Based on this comparison, despite the distance between the two areas, wetlands on Fort Stewart and at the Wilkinson-Oconee restoration area are very similar and, therefore, their use for mitigation fully supports the requirement for “no net loss”. Text reflecting this information was incorporated into Section 6.4.1.1 of the FEIS.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. At the time of the pre-application meeting, the USACE agreed to allow the applicant to purchase credits from the secondary mitigation zone of the Wilkinson-Oconee Bank, which was the only bank with available credits. The agreement was made with the applicant in order to allow them time to procure funds necessary to provide mitigation when needed. The on-base Pond Four Mitigation Bank will be used to mitigate smaller on-post projects in the future that would likely be on a short time line for planning, permitting and construction. The Army procurement process takes too long to allow for the purchase of mitigation credits for these small, short-time-line projects. Therefore, the USACE agrees with the applicant to save Pond Four credits for these future small projects.

h. Issue 8: Before seeking compensatory mitigation in a different watershed, the Applicant should explore the use of existing and new mitigation banks in Ogeechee River Watershed. According to the DEIS's evaluation of mitigation banks in 2009, the Ogeechee River/Margin Bay and Black Creek Banks may now have available credits. DEIS at 6-8. Also, given the significant amount of wetlands within the boundaries of Fort Stewart as well as Fort Stewart's experience in the creation of mitigation banks, the Corps should require the Applicant to take a hard look at a potential onsite mitigation bank that would ensure the compensation of the wetlands' lost values and functions.

(1) Applicants Response: Existing and new mitigation banks within this watershed

were not available at the time Fort Stewart was required to begin planning for the required wetlands credit acquisition for its FY 2011 range projects with known and/or anticipated wetlands impacts (see answer to Issue #9, below, for additional details). On-site wetlands mitigation was not a viable option because, as discussed in Section 5.3.3.2 of the FEIS, although Fort Stewart has an existing mitigation bank and an on-site wetlands restoration project, it is running out of new places where additional on-site mitigation can be conducted. If credits are available in the primary service area in the future, however, then Fort Stewart will work to try and obtain these credits, in accordance with the Compensatory Mitigation Rule For Losses of Aquatic Resources (33 CFR 332) and the Federal Acquisition Regulation. For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs).

After exploring and selecting reasonable site alternatives for the proposed FY11-FY14 range projects, the Installation determined that the last remaining on-site mitigation bank (Pond 4) could not support the wetland mitigation requirements for these facilities and sustain itself for mitigation of proposed and future garrison construction, and other unplanned projects that arise out of mission changes. The remaining acres within the Installation Wetland Bank allows Command to respond to emergency range training requirements which surface from “In Theater” conditions and scenarios, or award Congressional garrison or training additions that must be executed by Fort Stewart within one year or less. If Commanders did not have this flexibility, Installation projects with unavoidable wetland impacts would be cancelled or held up in significant delays awaiting Congressional funding to purchase “off-Post” wetland credits.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. The credits purchased were in the secondary service area of the Wilkinson-Oconee Bank which was the only bank with available credits. The on base Pond Four Mitigation Bank would not have enough acreage needed for these projects. Fort Stewart has conducted an in-depth review of potential wetland mitigation sites on the base and is in the process of developing additional areas connected to the existing Pond Four Mitigation Bank; however, no additional mitigation is available at this time.

h. Issue 9: The Applicant's proposed mitigation plan is based on mitigation credits

purchased a year ago from the Wilkinson-Oconee Bank which was the "only bank that provided an offer to the solicitation...." DEIS at 6-8. It is our understanding that Section 404 permit applicants are discouraged from procuring mitigation credits in advance of receiving a permit so that the Applicant is not limited in its mitigation options, such as the use of new mitigation banks. This reasoning is at play here. It has been a year since the Applicant solicited a mitigation contract and, according to the Applicant's DEIS mitigation bank table 6.1, at least two Ogeechee River Watershed banks may now have credits available.

(1) Applicants Response: The timeline associated with Congressional Budget approval and Federal Appropriation process for military construction requires advance planning to enable construction to be implemented in the timeframe appropriation was made. The timeline for planning and construction of these projects is quite early (two years out or more) and did not allow for a later solicitation. To secure the funds necessary to build a proposed range, Headquarters-Department of the Army (HQDA) requires the Installation to budget for wetland impacts that will be unavoidable at least two years prior to the proposed project's anticipated contract award date. If an Installation fails to provide this to HQDA within the given timeline, the project is not funded. In the past, Fort Stewart has been able to mitigate using its on-Post wetland mitigation bank; however, as mentioned above, the on-Post bank no longer has an adequate amount of credits available to support these ranges while also meeting the requirements of the Installation's "In-Theater" mission requirements. The Installation utilized the Compensatory Mitigation Rule (33 CFR Part 332) when developing its mitigation plan for the proposed FY11 MPMGR, FY11 IPBC, FY13 QTR, and the FY13 DMPTR. Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Section 6.4.1.1 of the FEIS has been revised to clearly explain that a mitigation decision has not yet been made for the FY13 QTR and the FY13 DMPTR.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. The USACE recognized the time restraints associated with the proposed projects and the military's appropriation and allocation of funds needed for potential wetland impacts and agreed to the use of the Wilkinson-Oconee Bank for these projects. Any future projects mitigation requirements would fall within the guidelines and mitigation availability in place at that

time.

i. Issue 10: Furthermore, we share EPA's concerns that the Applicant is not sufficiently mitigating impacts on streams. It is our understanding that Fort Stewart's projects in the past have significantly affected streams that were not mitigated. ORK urges the Corps to ensure that stream impacts are assessed separately from wetlands impacts and that the loss of streams is compensated appropriately. Overall, ORK is concerned that the Applicant's proposed mitigation plan simply does not include adequate compensation for Fort Stewart's wetlands and streams that will be significantly impacted by the Project.

(1) Applicants Response: No streams will be lost as a result of the proposed project. The footprints of the MPMGR and IPBC on the 7.5-minute USGS topographic quads show "blue line" streams in the areas; however, a site visit by Fort Stewart and the Georgia Environmental Protection Division (GA EPD) on January 20, 2010, found no streams. The Savannah District also did not identify any streams within the range footprints. This information was added to Section 4.3.1, of the FEIS.

Over the years, Fort Stewart has worked diligently to mitigate impacts – direct and indirect, as well as cumulative – to the Installation's streams, as well as wetlands. During the development of the Installation's wetland bank, for example, thousands of feet of Canoochee Creek and Strum Bay were restored without being credited to the Installation's mitigation bank. The Installation takes pride in that fact and welcomes working with ORK and other local environmental stakeholders on future projects.

(2) USACE Position: The USACE has completed an expanded preliminary jurisdictional determination for the project site. This determination verified there are no jurisdictional streams located on the project site.

j. Issue 11: Failure to Minimize Impacts to Marine Resources. Section 404(b)(1) guidelines prohibit issuance of a permit where "[t]he proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem." 40 C.F.R. § 230.12(a)(3)(iii) (emphasis added). None of the information that we have reviewed demonstrates that the Applicant has tried to adequately minimize the impacts of the Project. The Applicant repeatedly contends that because it is utilizing

existing range footprints the Project will "avoid and minimize impacts to more pristine and un-fragmented wetlands systems" on Fort Stewart. See e.g. Public Notice at 3. While ORK appreciates the Applicant's utilization of existing ranges for the Project, this reuse of range areas does not ensure minimization of harm to aquatic ecosystems or satisfy the regulation's mandate that the Project includes "all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem." 40 C.F.R. § 230. 12(a)(3)(iii).

(1) Applicants Response: In addition to avoiding and minimizing impacts to more pristine and un-fragmented wetlands systems, as noted in the comment, Fort Stewart consistently seeks to minimize and avoid wetland impacts at each stage of the design process. It is also important to note that the proposed ranges would be constructed on existing ranges that are operational and already cleared of vegetation. First, much of the avoidance and minimization process takes place before actual site selection. (See response to Issue #2.) Training ranges of this kind have fairly specific requirements and it is not always possible to build them without impacting every wetland in the footprint; however, site designers may alter certain aspects in response to environmental concerns during various stages of the design process (10%, 35%, 60%, 90%, and 100% stages of design completion). This is easiest if they can do so while still meeting the operational and training requirements of the range. For example, the currently on-going design process reduced the wetland impacts from the IPBC to a third of what they were at the time of writing the DEIS. Impacts from the MPMGR were also slightly reduced during that time and several proposed range projects were sited without wetland impacts of any kind. It is hoped that impacts from the QTR and DMPTR may be reduced, but as they are not yet in the design process, this cannot be precisely determined.

To ensure compliance with the Georgia (GA) Erosion and Sedimentation Control Act (ESCA) and the CWA on existing and future training ranges, Fort Stewart mandates full utilization of Timber Harvest best management practices (BMPs), National Pollutant Discharge Elimination System (NPDES) permit requirements, site-specific Erosion and Sedimentation Pollution Control Plans (ESPCPs), and pre- and post-construction BMPs to reduce the potential adverse impacts to water bodies, such as streams. The projects discussed in the JPN and FEIS have not undergone complete design. During this process, however, Fort Stewart stormwater specialists review ESPCPs for compliance with the GA ESCA and the CWA. The Installation also utilizes the Natural Resources Conservation Service (NRCS) to provide technical expertise during preparation of ESPCPs prior to Fort Stewart providing construction approval. Fort Stewart stormwater

compliance assessors and NRCS consistently inspect and monitor on-going construction actions. They will also do this during the construction of these proposed projects to ensure adherence to associated ESPCPs. Fort Stewart inspectors also routinely inspect tank trails, range access roads, range course roads, and dirt roads/trails to see if any damage is occurring (such as hardened tank trails or water crossings need repairs, to prevent sedimentation of adjacent streams).

(2) USACE Position: The USACE is preparing an analysis of the proposed project pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for this proposed project. This analysis will document that all requirements of the Guidelines have been met.

k. Issue 12: The Applicant-specifically, in Appendix D to the DEIS, fails to adequately describe measures intended to minimize impacts besides asserting that the ranges will be placed in existing disturbed areas. The proposed plans for MPMGR and QTR consist of wetlands impacts of 116.7 acres and 26.7 acres, respectively. Contrary to the Applicant's assertion that these proposed impacts are not extensive, the two ranges impact all wetlands within MPMGR and QTR areas. Thus, when all wetlands in each project area are destroyed or altered, the Applicant has failed to demonstrate that it has adequately minimized impacts to the aquatic ecosystem. The Applicant's failure to offer measures to minimize impacts to wetlands and streams violates the Section 404(b)(1) guidelines and the CWA. ORK urges the Corps to require the Applicant to set forth specific measures intended to minimize wetlands impacts on each of the four proposed ranges.

(1) Applicants Response: As noted in previous response, Fort Stewart attempts to avoid and minimize wetland impacts throughout the siting and design process. The most substantial avoidance and minimization occurs during the siting process as part of the site alternatives to carry forward for detailed analysis. Please note that, at the initial siting phase, the amount of wetland acres impacted attributed to each range is simply a total of all wetland acres that *would be located within the range footprint that could potentially be impacted*, and it is likely not *all of the wetlands within the footprint will be impacted by the project because avoiding and minimizing negative impacts wetland are carried forward as a consideration into the actual range design process after the site is selected.*

Efforts are made to reduce these impacts as the design progresses and, it is anticipated that, as design proceeds, additional wetlands avoidance and minimization of effect will be achieved. Again as an example, the currently on-going design process for the IPBC range has reduced the wetland impacts to a third of what they were at the time of writing the DEIS. Design efforts for the MPMGR have produced similar results, as well. Furthermore, little-to-no impervious surfaces will exist on these ranges, so runoff will not increase appreciably. The primary areas of “hardened surfaces” will consist of concrete turning pads, hardened stream crossings, etc., but not hardened roads and/or completely paved areas. The range surfaces will still be permeable, and, after construction, will acquire a covering of grasses and light herbaceous vegetation. Furthermore, wildlife may still traverse the ranges and graze during periods (sometimes weeks or more) the ranges are not in use.

In regard to the general issues of siting ranges and orienting them to avoid wetlands, further mention must be made of the Surface Danger Zone, or SDZ. Every range has an SDZ, an area within which people, property, and wildlife are in danger of being struck by projectiles during live fire exercises. Because of this danger, safety of Fort Stewart personnel, the public, and wildlife is a primary consideration in range siting. As previously noted, an SDZ may cover hundreds or even thousands of acres, and ranges must be sited to ensure areas of habitation, daily operations, traffic, and environmental sensitivity do not fall within them. A further limitation to siting is the fact that Fort Stewart is essentially cut into quarters by two major Georgia highways conveying regular civilian traffic. Injury or loss of human life during live fire exercises due to an improperly placed SDZ would be unacceptable to any party. Therefore, all organizations involved in siting ranges are forced to site ranges and their attendant SDZs very carefully. Efforts are made to ensure SDZs overlap. This maximizes land use and minimizes areas impacted by live fire; in part this is itself an environmental consideration as vegetation and animal populations may suffer losses from carelessly directed live fire.

(2) USACE Position: The USACE is preparing an analysis of the proposed project pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for this proposed project. This analysis will document that all requirements of the Guidelines have been met.

1. Issue 13: Deposition of Munitions. Finally, to our knowledge the Applicant fails to discuss the impact to water quality of any munitions landing in any waters of the United States on the proposed ranges. Under the Section 404(b)(1) guidelines, the Corps has an independent duty to evaluate water quality impacts before it issues a permit. The deposition of the munitions in such waters will be an indirect impact of the proposed Project.

(1) Applicants Response: The Military Munitions Rule states that used or fired munitions are considered a solid waste only when they are removed from their original landing spot (www.epa.gov/epaoswer/hazwaste/military/index.htm). Therefore, since the proposed ranges will utilize existing impact areas and the munitions will be used for their intended purposes and will be left where they land, the munitions are not considered solid waste. The best practices to minimize the impact of lead on the environment are stormwater and erosion controls, vegetation management, soil amendments, bullet traps, and soil pH modifiers which are utilized.

(2) USACE Position: A certain percentage of the munitions that are used or fired on this range, and the other three ranges under review, would likely land in waters of the United States. The USACE would assume that most of this exploded ordinance would be comprised of lead, copper, zinc and other inert metals. Fragments of inert metal would not dissolve in water or otherwise become bio-available. Therefore, there would be a very low probability of munitions resulting in a more than minimal impact on water quality. The Georgia Environmental Protection Agency is reviewing the proposed project under Section 402 of the Clean Water Act, for compliance with the state's Water Quality Certification program. Prior to the USACE issuing a final permit for this proposal, the Georgia EPD must first issue Water Quality Certification. With issuance of Water Quality Certification, Georgia EPD would confirm that the proposed project would meet all applicable state standards.

PART III - ALTERNATIVES/SECTION 404(b)(1) ANALYSIS

A. ALTERNATIVES:

1. No Action: The no action alternative is one in which the proposed MPMGR facility would not be built. If this facility is not provided, the Soldiers of Fort Stewart, Reserve and

National Guard units that train here will not be able to obtain and maintain efficiency for live fire training for machine gun engagements. Units will not train to standard, and the gap between equipment fielding and training will widen. The ranges that do exist on the Installation for machine gun marksmanship training cannot accommodate the annual marksmanship throughput needed to test Soldiers in their live-fire marksmanship skills. Ultimately, Soldiers may enter future combat, less than fully prepared to employ the full capabilities of their weapons and equipment.

2. Off-Post Locations: Consideration was given to siting the MPMGR in an Off-Post location. Duplicating the infrastructure at a location Off-Post would incur considerable costs beyond the capability of the applicant's budget constraints. The MPMGR would at a minimum require approximately 6,500 acres of land in an appropriate shape to co-locate the SDZ and associated facilities (see further discussion below). For comparison, the 3rd Infantry's Satellite Post, Hunter Army Air Field, is only 5,100 acres total. Estimates and surveys have shown to acquire such a track of land would require an Environmental Impact Statement. An Off-Post facility would be difficult to locate and still meet the Proximity requirements, especially given the logistics, cost, and scheduling required. Additionally, there are no other Public Lands available nearby that would be compatible with the MPMGR training requirements.
3. On-Post Location: The proposed project is for the construction of a MPMGR that utilizes existing SDZs, does not isolate useful maneuver terrain, cut off impact areas, create a new impact area, or make Unexploded Ordnance (UXO) clearance operations difficult, while avoiding impacts to wetlands. The MPMGR will be used to train tenant and reserve Soldiers in basic machine gun live-fire training tasks required to sustain combat proficiency; specifically, to identify and engage stationary infantry targets with a machine gun. The actual range will be 320 meters in width by 300 meters in depth and require approximately 250 acres of clear-cutting. All targets would be fully automated, allowing numerous event and specific target training scenarios, all of which will be computer driven and scored from the range operations center. The associated Range Operations and Control facilities will consist of the standard Small Arms Facilities. These facilities consist of an After Action Facility, Staging Facility, bleacher enclosure, range control tower, range operations and storage building, latrine, covered mess and building information systems. Supporting facilities include electric service, paving with parking for Military and POVs, site improvements, storm drainage and information systems.

The applicant identified five potential MPMGR sites located within the Fort Stewart reservation. Each of these sites contains the area needed to support the range and accompanying SDZ. The five sites, discussed in more detail below, were identified and evaluated using the following criteria, which apply to all facilities at Fort Stewart:

1. Allow Anti-Terrorism and Force Protection. The site must be able to accommodate appropriate anti-terrorism measures and standoff distances.
2. Compatibility with Wildfire and Control (Prescribed) Burning Programs. The risk of wildfires is taken into consideration when siting projects. Areas to be avoided are those that are infrequently burned, because of safety concerns and for adherence to protected species habitat management plans include parcels near major highways (State and Interstate) and adjacent communities. Constructing facilities in locations that hinder Fort Stewart's prescribed burn program must be avoided.
3. Minimization of Environmental Impacts. Consideration of environmental impacts when siting projects include the following: avoid or minimize impacts to cultural and natural resources (such as wetlands and protected species); avoid direct impacts to creeks and streams; limit expansion of noise cones into existing residential areas and off-post communities; minimize adverse air quality impacts; and limit new metal contamination in standing timber (ranges).
4. Further Sustainability Goals. The Army incorporates sustainability principals into the planning, development, and upgrade of its facilities. From the outset, site selection and design follow sustainability principals, starting with design "charrettes" to ensure stakeholder collaboration toward optimal design, fiscal constraints, local characteristics and constraints, environmental issues, and consideration of functional adjacencies/relationships and land use compatibility. Site selection is based on functional adjacencies/relationships and land use compatibility. Ensure development near Fort Stewart's Garrison/cantonment (living and working) areas flow well with existing infrastructure, protecting green fields and preserving habitat and natural resources. Minimize negative impacts on the site and on neighboring properties and structures; avoid or mitigate excessive noise, shading on green spaces, additional traffic, obscuring significant views, etc.





The Army Range Requirements Model (ARRM) is an Army-wide planning tool used by

Army Headquarters to determine range requirements at each Army Installation. The ARRM provides an automated capability to take doctrinal requirements and accurately calculate live training throughput capacities and throughput requirements for each Installation. Ranges must be identified in the Installation's ARRM for it to receive Department of the Army (DA) funding. In addition to the four siting criteria listed above, which are applicable to all facilities at Fort Stewart, the MPMGR has been identified in the ARRM and was sited based the following Range-specific criteria:

1. Ability to Meet Training Requirements. There should be sufficient range capacity to ensure each unit meets its training requirements as set forth in the following: Army regulation (AR) 350-1, *Army Training and Leader Development*; Training Circular (TC) 7-9, *Infantry Live-Fire Training*; DA Pamphlet (PAM) 350-38, *Standards in Weapons Training*; TC 25-8, *Training Ranges*; the 3rd Infantry Division's Live Fire Guidance; and the unit's related Mission Essential Task List.
2. Range Design. Based on each proposed range's training purpose, each range must be of sufficient acreage to accommodate the SDZs for use of the specified munitions, as required by DA PAM 385-64, *Ammunition and Explosive Safety Standards*. The SDZ is a temporary safety boundary that surrounds the firing range and associated impact area that provides a buffer to protect personnel from the non-dud producing rounds that may be ricocheted during operation of the range. It includes an ordnance dispersion area, ricochet area, and an added safety buffer zone. This area is closed to all unauthorized personnel during each training exercise on the range. In addition, each range must have an existing impact area sufficient to support live-fire munitions used at Fort Stewart and be configured (e.g., course and targets) in a manner lending itself to achieving offensive and defensive training objectives.
3. Proximity. Range assets must be available for access by all Fort Stewart-stationed units to meet their reoccurring training requirements and to achieve combat readiness status before they deploy. This means sufficient ranges must be available within a geographic distance that allows each unit to get equipment to and from range locations to complete essential tasks in a timely manner. The time and cost of transporting units to a training area must not interfere with the overall training levels for a unit. Each unit has a limited amount of time and cost resources to achieve training requirements. The time and cost of transport cannot be so excessive that it compromises the unit's ability to meet all mission essential tasks and readiness requirements. Quality of life may be affected if troops have

to travel too far for training.

The USACE has performed an analysis of the five identified Courses of Action (COAs) and determined that COA 1 is the preferred alternative due to the minimal operational constraints of the range design. A table is shown below for each proposed range, comparing each COA against the operational feasibility criteria is shown below. The overall screening criteria discussed in more detail below.

<i>Summary of Screening Analysis for FY11 MPMGR</i>				
Criteria	No-Action	COA 1	COA 2	COA 3, 4, and 5 Eliminated
Can the Army standard design in TC 25-8 for this range be accommodated under this course of action within allowable waivers or modifications?		✓	✓	✓
Can the Surface Danger Zone (SDZ) for this range be accommodated without infringing on adjacent training facilities or ranges?	n/a	•	•	✓
Has the range been sited to maximize use of the Installation's Training Area for future requirements by leaving the maximum amount of suitable contiguous land mass available for future needs?	n/a	✓	✓	
Is the terrain susceptible to wildfires which could cause safety issues to nearby Interstates or State Highways or lengthy shutdowns?	n/a	✓	✓	
Does this course of action avoid and minimize adverse environmental impacts?	✓	⊙	⊙	•
Does this course of action require either electrical power lines or fiber optic cable in excess of 10,000 feet, or for water lines to be constructed?	n/a	✓	✓	
Does this course of action require a new duded impact area to be established?	n/a	✓	✓	⊙

Does this course of action minimize construction costs for the range? ¹	✓	•	⊖	⊖
Does this course of action meet Force Protection and Anti-Terrorism measures?	n/a	✓	✓	✓
Summary of Course of Action Feasibility	✗	⊖	⊖	✗

¹ For this criterion, that may arise for mitigating potential environmental impacts. It represents only the relative cost of construction for each particular location.

LEGEND:

- ✗ = Not Feasible – Unacceptable limitations
- ⊖ = Feasible – Moderate limitations and challenges
- = Feasible – Minor limitations and challenges
- ✓ = Feasible – No limitations or challenges
- n/a = Not Applicable

The Directorate of Public Works (DPW) Environmental Division, working in conjunction with the Directorate of Plans, Training, Mobilization, and Security (DPTMS) Training Division, the DPW Fish & Wildlife Branch, the DPW Forestry Branch, and the DPW Master Planning Division were able to identify five separate locations on Fort Stewart for the placement of this MPMGR. Each of the five sites is discussed in more detail below:

a. COA 1 is located in the Delta – 8 (D-8) Training Area (TA) and is the preferred site.

Allow Anti-Terrorism and Force Protection. COA 1 accommodates appropriate anti-terrorism measures and standoff distances.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the MPMGR at COA 1 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities. During site early siting efforts, targets were moved closer together to reduce the SDZ, which kept it within Fort Stewart's boundary and avoided it crossing Georgia Highway 144 West.

Minimization of Environmental Impacts. COA 1 is located in Delta TA on top of an existing MPMGR; therefore, this alternative requires less timber removal (compared to COA 2, which consists of undisturbed terrain). The siting on top of an existing range avoids the majority of wetland areas; however, approximately 103.34 acres of jurisdictional wetlands will still be impacted and require mitigation and CWA Section 404 permitting. Avoidance and minimization

of jurisdictional wetlands during the design and construction of this range will be explored. Complete leveling for contour consistency on the site may not be necessary, as well, because rolling terrain is a training benefit as long as the line of sight (LOS) (from shooter to target) is maintained. Maintenance to keep vegetation at an acceptable height will be necessary for the continued operation of this range.

COA 1 would impact red-cockaded woodpecker (RCW) clusters, their associated habitat, and a frosted flatwoods salamander (FFS) pond. These impacts will not impede recovery of the Fort Stewart RCW population and is not likely to jeopardize the continued existence of FFS. Locating COA 1 adjacent to the small arms ranges currently in the D-8 TA, as well as ranges proposed in future fiscal year Range Plans adjacent to the existing ranges, would significantly reduce impacts to critical RCW habitat. If the MPMGR was placed in another location and not overlaid on existing SDZs, the project footprint would utilize additional 5,500 or more acres of critical habitat, which would have a significant adverse impact to the environmental concerns stated above. COA 1 prevents adverse impacts to an additional RCW habitat & recovery efforts, preventing Formal Section 7 Consultation with the US Fish and Wildlife Service (USFWS).

Further Sustainability Goals. Site selection for the MPMGR was based on functional adjacencies/relationships and land use compatibility. As discussed above, COA 1 was sited to include significant overlaps of multiple SDZs to avoid development of an inappropriate site and reduce environmental impacts. COA 1 was selected based on compatibility with the adjacent land use.

Ability to Meet Training Requirements. During initial sitings, COA 1 was the Trainer & War Fighters (T&WF) preferred site since this location would be accessible to meet annual training requirements and to achieve combat readiness status before they deploy. The time and cost of transporting units to COA 1 would not have a major impact on the overall training levels for a unit. The proposed siting for the MPMGR in the D-8 TA would generate training value and merit from the T&WF by supplementing the other small arms ranges currently on site and the ranges coming in the future fiscal years' Range Plan. This COA creates a range complex consisting of a sniper range, 2-MPMGRs, a Qualification Training Range, and a Known Distance Range, thus greatly enhancing the proximity of these facilities.

Range Design. COA 1 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use on Fort Stewart. COA 1 was configured to achieve offensive and defensive training objectives. It is located adjacent to an existing tank trail [Fort

Stewart (FS) 36] and within 10,000 feet of existing power sources. Construction at the preferred location does not isolate useful maneuver terrain, cut off impact areas, create a new impact area, or make UXO clearance operations difficult. It is located adjacent to an existing tank trail (FS 36) and within 10,000 feet of existing power sources.

Proximity. COA 1 is in close proximity to the cantonment area, allowing Soldiers to travel on foot to the range and minimizing operational constraints. COA 1 was sited within a geographic distance that allows each unit to get equipment to and from range locations to complete essential tasks in a timely manner. COA 1 would support the training units' ability to march to the Delta Small Arms Range Complex. Fort Stewart has undergone a Heavy Brigade Combat Team (BCT) to Infantry BCT conversion, which has placed an extensive utilization requirement on Infantry qualification with training ranges. The Infantry BCTs do not have the transportation assets of the Armor BCTs, resulting in a shortfall of transportation assets. In combination with visiting, but deploying, BCTs training to Mission Essential Task List, it is required for Infantry training facilities to be within walking or route marching distances. Close-In Range Facilities for Infantry training are a priority to meet timelines for deploying Infantry BCTs.

Advantages/Disadvantages: COA 1 is the preferred location because the site does not isolate useful maneuver terrain, cut off impact areas, create a new impact area, or make UXO clearance operations difficult, while avoiding impacts to previously-undisturbed wetlands. Impacts to the environment would be avoided and minimized where possible.

- a. **COA 2 is located in the Delta – 9 (D-9) TA** (This site is just South of the preferred COA 1)

Allow Anti-Terrorism and Force Protection. COA 2 accommodates appropriate anti-terrorism measures and standoff distances.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the MPMGR at COA 2 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities.

Minimization of Environmental Impacts. COA 2 site is not sited on top of an existing cleared area and would require approximately 250 acres of clear-cutting for LOS. Although COA 2 would impact fewer acres of wetlands (96.2 acres), the impacts would occur on previously-undisturbed wetlands. These impacts would be more environmentally intensive compared to

impacts at COA 1 because portions of COA 1 include the existing range and some areas which have already been cleared. The Range Floor is affixed in a certain location to the SDZ of the MPMGR, impacting jurisdictional wetlands, requiring wetland mitigation and permitting. As with COA 1, if designing the MPMGR at this location, avoidance and minimization efforts would be essential. Hard-wiring for targets, depending on the availability of funds, would reduce the wetland areas needing de-mucking and filling. RCW clusters and habitat, as well as a FFS pond would be adversely impacted at this site. The COA 2 site would also extend the Noise Zone II contour beyond its existing limits.

Further Sustainability Goals. Site selection for the MPMGR was based on functional adjacencies/relationships and land use compatibility. COA 2 is not located on top of an existing range and would require 250 acres of clearing for LOS.

Ability to Meet Training Requirements. Like COA 1, siting the MPMGR at COA 2 would meet training requirements.

Range Design. COA 2 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use at Fort Stewart. COA 2 was configured to achieve offensive and defensive objectives. Like the preferred location, the construction of the MPMGR at COA 2 does not isolate useful maneuver terrain, cut off impact areas, create a new impact area, or make UXO clearance operations difficult.

Proximity. COA 2 is in close proximity to the cantonment area, allowing Soldiers to travel on foot to the range and minimizing operational constraints. COA 2 was sited within a geographic distance that allows each unit to get equipment to and from range locations to complete essential tasks in a timely manner.

Advantages/Disadvantages: Based upon the information gathered, COA 2 would be more environmentally intensive compared to impacts at COA 1 because portions of COA 1 include the existing range and some areas which have already been cleared. COA 2 would also extend the Noise Zone II contour beyond its existing limits.

a. COA 3 is located in the Charlie - 12 (C-17) TA

Allow Anti-Terrorism and Force Protection. COA 3 accommodates appropriate anti-terrorism measures and standoff distances.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the MPMGR at COA 3 would create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities. Construction would occur within the dismantled maneuver TA C-17, which would reduce available maneuver terrain. This alternative is farther from the cantonment area than the other alternatives, is not within 10,000 feet of existing power lines, and is adjacent to the City of Richmond Hill and Interstate 95 (I-95). The latter is problematic because vehicles traveling on I-95 and local roads are so numerous, with as many as 73,900 vehicles per day crossing near TA C-17. This training area is therefore rarely prescribed-burned by Fort Stewart because of safety risks (smoke and/or fire near the road) to these travelers on nearby roadways. In addition, live weapons firing within the proposed MPMG at this location and its SDZ may cause frequent brush and forest fires. Therefore, construction and operation of a range at this site would be problematic from an operational and safety perspective and it was deemed not feasible.

Minimization of Environmental Impacts. As discussed above, Training area C-17 is bordered on three sides by the Ogeechee and Canoochee Rivers with extensive swamp systems. COA 3 would result in impacts to approximately 22.8 acres of jurisdictional wetlands. Impacts to critical RCW habitat and cultural resources are not anticipated within COA 3.

Further Sustainability Goals. Site selection for the MPMGR was based on functional adjacencies/relationships and land use compatibility. COA 3 would create new artillery impact areas and would not overlap existing SDZs. COA 3 would not be compatible with the adjacent land use, which includes major highways.

Ability to Meet Training Requirements. COA 3 places a large SDZ over a currently unimpeded training area, has the potential to affect transportation, and create road closure scenarios.

Range Design. COA 3 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use at Fort Stewart. However, COA 3 would create new artillery impact areas, is located within existing flight routes, and is in close proximity to major roads (Georgia Highway 144 and Interstate 95).

Proximity. COA 3 is located farther from the cantonment than COA 1 and COA 2, which creates operational constraints.

Advantages/Disadvantages: Based upon the information gathered, COA 3 minimizes adverse environmental impacts to wetlands and waters and RCW habitat. However, site design would cause operational constraints and would create adverse wildfire or control burning issues for nearby highways and communities.

b. COA 4 is located in the Delta - 5 (D-5) TA

Allow Anti-Terrorism and Force Protection. Appropriate anti-terrorism measures and standoff distances are met by siting MPMGR at COA 4.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the MPMGR at COA 4 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities.

Minimization of Environmental Impacts. COA 4 was also sited to include significant overlaps of multiple SDZs; however, the required 242-acre Range Floor would impact 106.8 acres of wetlands. The Range Floor is affixed in a certain location to the SDZ of the MPMGR.

Further Sustainability Goals. As discussed above, COA 4 was sited to include significant overlaps of multiple SDZs to avoid development of an inappropriate site and reduce environmental impacts. COA 4 was selected based on compatibility with the adjacent land use.

Ability to Meet Training Requirements. COA 4 is also located within the Delta Small Arms Range and would be accessible to meet annual training requirements and to achieve combat readiness status before they deploy. COA 4 would not result in 50 caliber fire crossing other ranges or State highways or result in the SDZ extending beyond the Installation's boundaries.

Range Design. COA 4 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use at Fort Stewart. COA 4 was configured to achieve offensive and defensive objectives; however, the site would constrain training within Fort Stewart. The proposed range does not create new impact areas through placement within existing SDZ and

does not impact existing flight routes. However, COA 4 would require SDZ coordination by Range Control to ensure ranges in the Delta Training Area do not cross fire. In addition, when the proposed range requires maintenance, the site would require a new access road that would need to connect to an existing tank trail in the area (FS 91 or FS 20). COA 4 is in close proximity to existing utilities.

Proximity. Transporting units to COA 4 would not have a major impact on the overall training levels for a unit. COA 4 was sited within a geographic distance that allows each unit to deploy its Soldiers logistically and equipment to and from the MPMGR to complete essential life-fire tasks within established timeframes.

Advantages/Disadvantages: Based upon the information gathered, COA 4 would have less wetland impacts than the preferred alternative, but operational constraints due to the range design prevent the alternative from being considered further.

c. COA 5: The Bravo – 4 (B-4) TA

Allow Anti-Terrorism and Force Protection. Appropriate anti-terrorism measures and standoff distances are met by siting MPMGR at COA 5.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the MPMGR at COA 5 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities.

Minimization of Environmental Impacts. The COA 5 location of the MPMGR over the RC-Foxtrot (RC-F) would result in a nominal wetland impact (approximately 8.9 acres). COA 5 would have no adverse impacts to Cultural Resources and result in only nominal impacts to threatened and endangered species critical habitat.

Further Sustainability Goals. As discussed above, COA 5 was sited to include significant overlaps of multiple SDZs to avoid development of an inappropriate site and reduce environmental impacts. COA 5 was selected based on compatibility with the adjacent land use.

Ability to Meet Training Requirements. COA 5 provides sufficient capacity to support a MPMGR. The location of the COA 5 SDZ would allow live-fire training without the closure of training areas needed for maneuver of units. However, COA 5 would not be available and would

interfere with the training requirements of other military units as discussed below in Range Design.

Range Design. COA 5 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use at Fort Stewart. However, this proposed siting of MPMGR at COA 5 is directly on top of a currently existing Red Cloud (RC) Range, called RC-F. At the time of this study it was found the RC-F that was currently no longer utilized to its fullest potential due to the immediately adjacent construction of the new Digital Multi Purpose Range Complex (DMPRC). The footprint of the DMPRC is approximately twice the size of the RC-F range, resulting in the SDZ of the DMPRC overlapping the RC-F range. The overlap in SDZs prevented the armor and track vehicles from maneuvering down the full length of the range course roads. Range Control decided to utilize RC-F for the qualification training for the .50 cal machine gun. The machine gun qualification range does not require down range occupation of troops or vehicles. Since this range was being utilized for machine gun training and qualification, COA 5 would meet the criteria for locating the new MPMGR.

Proximity. COA 5 would be accessible to meet annual training requirements and to achieve combat readiness status before they deploy. Transporting units to COA 5 would not have a major impact on the overall training levels for a unit. COA 5 was sited within a geographic distance that allows each unit to deploy its Soldiers logistically and equipment to and from the MPMGR to complete essential life-fire tasks within established timeframes.

Advantages/Disadvantages:

During this study, the RC-F range was proposed as the future site of the new DMPTR currently scheduled for construction in Fiscal Year 2013. The RC-F range was considered a more appropriate size and met the selection criteria for the DMPTR. The DMPTR has since been “officially” sited thru the Master Planning Office and signed off on by the Garrison Commander. Therefore, COA 5 was no longer considered feasible for the MPMGR.

B. AVOIDANCE:

1. Total wetland avoidance on-site is not possible based on the layout and size of range complexes. Also, the layout of adjacent wetland areas made total avoidance impossible. Any further reduction in proposed impacts would not meet the applicant’s purpose and would not be practicable.

2. The range floor was re-sited in several locations to document avoidance. Overall, the wetland impacts in COA 1 were reduced from 142 acres to 103.34 acres, pursuant to the 90 percent design review. In addition, approximately 36 acres of the 103.34 acres of wetland fill have been reduced to secondary impacts for clear cutting for LOS requirements. Cost will factor regarding how the range's targets will be hard-wired. It is required to have the targets from 0m-800m wired. De-mucking and wetland filling is necessary within this portion of the range. From 800m-1100m there are no targets; therefore, de-mucking and filling wetlands within this area of the range is not necessary. If funding is available, the targets 1100m-1500m will be hard-wired, which would require de-mucking and filling of wetlands within this area. The Installation will not know if funding will be available for this option until the engineering firm makes their determination. Complete leveling for contour consistency on the site may not be necessary. For realistic training, having some rolling terrain is a training benefit as long as the LOS is not affected. As an additional avoidance measure, the USACE would include the following special condition in any draft permit issued for this project:

The site design for this project has not been finalized. Authorized wetland impacts are based on a standard range design. Prior to conducting any work in wetlands on this project site, the permittee shall submit final site development plans to the USACE for review and approval. No work in wetlands can occur until the USACE has reviewed and approved the final plan in writing; this concurrence letter needs to document that the 404(b)(1) process has been adequately demonstrated. It is anticipated that once final design is completed, there will be a minor reduction in the amount of wetland area that will be impacted by the project. This anticipated change in the footprint of authorized wetland impact is authorized under this permit and modification of the permit will not be required for this change in site design.”

C. MINIMIZATION ALTERNATIVES:

1. Minimizing Wetland Footprint: As required by Section 404(b) 1 of the CWA, minimization of adverse impact to wetlands was documented within the footprint the project site, based on the current ninety percent design configuration of the proposed project. As the project continues through the design process, to the point of final design, it is anticipated that there will be the potential for avoiding impacts to some wetland areas. Side slopes of wetland fills will be at a 3:1 minimum, to avoid unnecessary

impacts. Wetland boundaries and project limits will be clearly marked to prevent inadvertent impacts to adjacent wetland areas.

2. Erosion Control Techniques: The applicant has indicated that best management practices (BMPs) would be utilized while performing any construction activities on the subject property. In addition, the applicant has indicated that activities would be performed in a manner to minimize turbidity and/or erosion. Any permit that would be issued by the USACE would also include the following special condition, "All work conducted under this permit shall be located, outlined, designed, constructed and operated in accordance with the minimal requirements as contained in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. Utilization of plans and specifications as contained in "Manual for Erosion and Sediment Control, (Latest Edition)," published by the Georgia Soil and Water Conservation Commission or their equivalent will aid in achieving compliance with the aforementioned minimal requirements."

D. COMPENSATORY MITIGATION: Fort Stewart determined that at least 797.77 credits are required to compensate for the proposed impacts. In June 2009, Fort Stewart contacted eight off-post mitigation banks. Fort Stewart solicited a contract for the purchase of in-kind mitigation credits for a period of 16 days, starting 28 May 2009, to all mitigation banks that could service Fort Stewart with wetland mitigation credits acceptable by the USACE. The only bank that provided an offer to the solicitation was Wilkinson-Oconee Bank. As described on its website, the Bank consisted of ditched, drained and clear-cut bottomland hardwoods, marginal forested scrub-shrub and herbaceous wetland systems, impaired streams and degraded riparian buffers and is being restored to vast bottomland hardwood wetland system that historically existing. Therefore, aquatic impacts associated with the proposed ranges are commensurate with the secondary service area of Wilkinson-Oconee Bank, which is an USACE approved mitigation bank.

At the time of the required solicitation, other banks within Fort Stewart's primary service area did not have the appropriate number of credits available to support the Installation's needs to meet Congressional funding timelines for the proposed ranges. The Wilkinson-Oconee Bank has the appropriate number and resource type of credits available for Fort Stewart to completely mitigate unavoidable wetland impacts associated with proposed range construction.

E. CONCLUSIONS: Based on the above, an off-post facility would be difficult to locate and still meet the proximity requirements, especially given the logistics, cost, and scheduling

required. Also, duplicating the infrastructure at a location off-post would incur considerable costs beyond the capability of the applicant's budget constraints. The applicant provided an adequate analysis of on-post locations for sighting this range and mitigation, as well as three other proposed new ranges. .

F. SECTION 404(b)(1) ANALYSIS: This project must be evaluated for compliance with the Section 404(b)(1) Guidelines (40 CFR Section 230). The goal of the 404(b)(1) Guidelines is "to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredges or fill material." An expanded 404(b)(1) analysis will be conducted prior to making any permit decision.

PART IV - PUBLIC INTEREST REVIEW

A. ENVIRONMENTAL SETTING/EXISTING CONDITIONS: The DA owns and manages the area in which the proposed MPMGR is located. The preferred COA is located with Delta Small Arms Impact Area, specifically located to the west of the existing Garrison at Fort Stewart.

B. ENVIRONMENTAL IMPACTS: The USACE Regulatory Program considers the full public interest, reflecting the protection and utilization of important resources. Table 3 is a summary of our public interest review for the proposed activity, which assesses the impacts of the proposed permit action on environmental and other public interest factors (33 CFR 320.1(a)(1), 320.4 and 325.3(c)).

Table 3. Summary of Project Impacts

FACTORS	No Effect	Negligible	Undetermined	Beneficial Major/ Minor		Adverse Major/ Minor	
1. Economics/Social	X						
2. Education/Scientific	X						
3. Aesthetics	X						
4. Food-Fiber Production	X						
5. Historical/Architectural/ Archaeological	X						
6. Recreation	X						
7. Land Use	X						
8. Mineral Resources	X						
9. Soil Conservation							X
10. Water Supply Conservation	X						
11. Water Quality		X					
12. Air Quality		X					
13. Noise Levels							X
14. Public Safety		X					
15. Energy Needs							X
16. National Security	X						
17. Navigation	X						
18. Shoreline Erosion Accretion	X						
19. Flood Hazards	X						
20. Flood Plain							X
21. Wetlands							X
22. Refuges	X						
23. Fish	X						
24. Wildlife			X				
25. Food Chain Organisms	X						
26. Shellfish Production	X						
27. Threatened and Endangered Species			X				
28. General Environmental Concerns							X
29. Property Ownership	X						
30. Mineral Needs	X						
31. Other	X						

C. DISCUSSION: We have evaluated the permit application regarding the need for the proposed activities, the practicability of project alternatives, and the beneficial and detrimental effects, including cumulative impacts. Complete descriptions of the 31 public interest factors can be found in the Range and Garrison Construction Environmental Impact Statement (RGCEIS) for Fort Stewart. Each public interest factor is referenced to specific sections within the EIS.

1. Economics/Social – The proposed project will have no effect to the local economy or local social environment. (RGCEIS Section 4.11 Social and Economics)
2. Education/Scientific – The proposed project will have no effect to educational or scientific resources. The project footprint is within an Army Installation small arms impact area. (RGCEIS Section 4.11 Social and Economics)
3. Aesthetics – The proposed project will have no effect to aesthetics. The project footprint is within an Army Installation small arms impact area and is off-limits to unauthorized personnel. (RGCEIS Section 4.7 Land Use)
4. Food-Fiber Production – The proposed project will have no effect to food or fiber production. The project site is within an existing small arms impact area. (RGCEIS Section 4.4.3 Forestry Management)
5. Historical/Architectural/Archaeological – The US Army, Fort Stewart is the lead federal agency for this proposed action. Impact analysis for historic properties follow guidelines set forth in Section 106 of the National Historic Preservation Act (NHPA) implementing regulations (36 CFR 800), Fort Stewart’s Programmatic Agreement with the Georgia SHPO. Fort Stewart would complete required consultation and make any necessary Section 106 of the NHPA determination, if required, prior to any work occurring in waters of the US subject to the jurisdiction of the USACE on a project site where cultural resources have been identified. (RGCEIS Section 4.5 Cultural Resources)
6. Recreation – The proposed project will have no effect to recreational areas. The footprint is located with a land use designated for range and training lands. (RGCEIS Section 4.7 Land Use)
7. Land Use – The proposed project is compatible to the existing land use category of range and

training lands. Therefore, there will be no effect to land use. (RGCEIS Section 4.7 Land Use)

8. Mineral Resources – The proposed project is located within the confines of an Army Installation that is designated for Soldier training. There are no minerals mined at Fort Stewart. Therefore, there will be no effect to mineral resources at the project site. (RGCEIS Section 4.1 Geology and Soils)
9. Soil Conservation – The project will undergo tree removal and grubbing and grading during construction of the proposed range. However, standard erosion and sedimentation control measures will be implemented to prevent sedimentation from leaving the confines of the project site. Erosion and sedimentation control best management practices (BMPs) will also be implemented throughout the duration of the project and after construction to ensure stormwater leaving the range has been filtered before reaching nearby wetland areas. Furthermore, an erosion and sedimentation control plan will be prepared for this project. A National Pollution Discharge Elimination System (NPDES) permit will be obtained for this project. At a minimum, a Level 1A Erosion and Sedimentation (E&S) Control Certified or Subcontractor Awareness E&S trained individual is required to be on site during any land disturbance activity. Adverse impacts to soil are expected to be minor and temporary in nature until construction is completed. (RGCEIS Section 4.1 Geology and Soils)
10. Water Supply Conservation – The proposed project will not require use of the Installation's water supply. Therefore, water supply will have no effect. (RGCEIS Section 4.3 Water Quality and Resources)
11. Water Quality – During the construction phase of the proposed project, wetland areas will be filled within the range footprint. All necessary permitting and mitigation will be conducted. See number 21, Wetlands, for additional information regarding impacts to wetland areas. Impacts to nearby surface water would likely not be impacted since necessary E&S control measures, as required by the Georgia Environmental Protection Division, will be implemented to prevent sedimentation from leaving the site. Turbidity samples will be taken during and after construction to ensure sedimentation in outfall areas do not increase from what the area currently experiences. Total Maximum Daily Load (TMDL) regulations require maintaining predevelopment time of concentration by strategically routing flows to maintain travel time, improve water quality, and to control the stormwater discharge. Flow calculations will also be conducted during preparations of the E&S control plan to ensure

concentrated stormwater runoff flows from peak rain events will not impact nearby water bodies. The proposed project footprint will be filled during construction activities; therefore, adverse impacts to groundwater are not anticipated. Fort Stewart is in consultation with the Georgia Environmental Protection Division regarding a water quality certification pursuant to Section 401 of the Clean Water Act. The USACE would include a copy of the 401 water quality certification with any permit issued. In addition, the special condition of any permit issued would require the permittee to adhere to the conditions of the 401 water quality certification. (RGCEIS Section 4.3 Water Quality and Resources)

12. Air Quality – Adverse impacts to air quality is not anticipated. Only minor and temporary amounts of dust generation during timber harvesting and construction are expected; however, no regulatory air quality thresholds would be exceeded. (RGCEIS Section 4.2 Air Quality)
13. Noise Levels – The proposed project and its location will not change the total distance of Noise Zone II (87 dB PK15) that currently extends beyond the southwestern portion of the Installation boundary (1400 meters). However, the shape of the contour will change as a result of this project and a new receiver area for small arms noise will be generated. Noise Zone III (104 dB PK15) will not extend beyond the Installation boundary. (RGCEIS Section 4.6 Noise)
14. Public Safety – During the timber harvest, prescribed industrial safety standards would be followed. No specific aspects of the proposed project would create any unique or extraordinary safety issues. The project location is outside of current explosive safety quantity distance clear zones and the inhabited building distance clear zones. An unexploded ordnance survey will be conducted prior to timber harvesting and construction activities. If necessary, an unexploded ordnance avoidance plan will be prepared. (RGCEIS Section 4.9 Safety)
15. Energy Needs - Within the area of potential effect, there are existing utilities into which new lines from the range can tie in, minimizing the potential ground disturbing activities associated with the establishment of all-new utility systems. This proposed project would also not result in a substantial increase in utility usage. Executive Order 13423 sets as a goal for all federal agencies the improvement of energy efficiency and the “reduc[tion] of greenhouse gas emissions of the agency, through reduction of energy intensity by (i) 3 percent annually through the end of fiscal year 2015, or (ii) 30 percent by the end of fiscal year 2015, relative to the baseline to the agency’s energy use in fiscal year 2003.” The U.S.

Army Energy Strategy for Installations (U.S. Army Energy Strategy for Installations, 8 July 2005, available at <http://army-energy.hqda.pentagon.mil/docs/strategy.pdf>), also contains strategies to reduce energy waste and improve efficiency. Taking these policies into account, this action does not represent a net incrementally addition to the global climate change problem. (RGCEIS Section 4.8 Infrastructure)

16. National Security – The proposed project will have no effect to national security. The requirement for this range has been validated by the Range and Training Land Program Development Plan prepared for Fort Stewart and the Forces Command Live Fire Training Investment Strategy. This project has been coordinated with the Installation physical security plan, and all physical security measures are included in the project. All required antiterrorism protection measures are included in the project, per DA PAM 190-51 (*Risk Analysis for Army Property*) and Training Manual 5-853-1 (*Security Engineering Project Development*). (RGCEIS Section 4.9 Safety)
17. Navigation – Navigable waters will not be impacted by this project. (RGCEIS Section 4.3 Water Quality and Resources)
18. Shoreline Erosion Accretion - The site is many miles from the coast and the project will not add to shoreline erosion accretion. (RGCEIS Section 4.1 Geology and Soils)
19. Flood Hazards – The site does not present an unusual flood hazard for this area (see below.) (RGCEIS Section 4.3 Water Quality and Resources)
20. Flood Plain – The southeast portion of the site is located in the Federal Emergency Management Administration (FEMA) 100 year flood zone, meaning that the flood elevation in that area has a 1- percent chance of being equaled or exceeded each year. This does not present an unusual flooding hazard for this area, and as the site will be used only for military training, does not present an appreciable hazard to property or human safety. (RGCEIS Section 4.3.1 Surface Water and Floodplains)
21. Wetlands – The project, as currently proposed, would impact 103.34 acres of bottomland hardwood wetlands, either through direct filling or by mechanized landclearing. The applicant has completed the 90% site design for the proposed project. The standard site layout for this type of range would require the filling and/or mechanized clearing of all 103.34 acres of bottomland hardwood wetlands on the 236-acre project site. The applicant will likely be able to avoid some of the wetlands on the project site as final site design is

completed for the project. However, for the purposes of this permit evaluation, the US Army Corps of Engineers (USACE) will assume that all 103.34 acres of wetlands on the proposed project site would be impacted. As an additional avoidance measure, the USACE would include the following special condition in any draft permit issued for this project: The site design for this project has not been finalized. Authorized wetland impacts are based on a standard range design. Prior to conducting any work in wetlands on this project site, the permittee shall submit final site development plans to the USACE for review and approval. It is anticipated that once final design is completed, there will be a minor reduction in the amount of wetland area that will be impacted by the project. This anticipated change in the footprint of authorized wetland impact is authorized under this permit and modification of the permit will not be required for this change in site design.

The present total proposed wetland impact for the four proposed ranges is 179.03 acres. As discussed by the applicant above, not all of these proposed impacts are for fill, but a certain percentage would involve mechanized land clearing impacts. Clearing wetlands of vegetation and maintaining them in scrub/shrub vegetation results in a change in function, but not a total loss in function. The mitigation credits proposed by Fort Stewart are assuming a total loss in function. The proposed mitigation plan is to purchase 1,391 credits to compensate for a total of 179 acres of wetland impact for all four ranges. This is a credit to impact ratio of 7.8:1. On average, three credits are generated for each acre of wetland restoration at the Wilkinson/Oconee Mitigation Bank, where credits will be purchased for the FY11 ranges. Therefore, the effective mitigation ratio for the FY11 Multipurpose Machine Gun Range and FY11 Infantry Platoon Battle Course projects would be approximately 2.6:1 of wetland restoration.

Even with implementation of the applicant's proposed compensatory wetland mitigation plan, the project would result in an overall loss in aquatic function within the watershed and on Fort Stewart. Therefore, the USACE has determined that the project would result in a minor adverse impact to wetlands. (RGCEIS Section 4.3.2 Wetlands)

22. Refuges - The site will not impact any areas specifically devoted to wildlife refuge. (RGCEIS Section 4.4 Biological Resources)
23. Fish – The site will not impact any fish species. The Canoochee and Ogeechee rivers are approximately 20 miles from the proposed project site. (RGCEIS Section 4.4 Biological Resources)

24. Wildlife – The site will impact the RCW foraging habitat. This site will also impact a potential breed pond for the flatwoods salamander. However, there has never been a salamander found in this pond. Formal consultation with the USFWS has been completed for these impacts. (RGCEIS Section 4.4 Biological Resources)
25. Food Chain Organisms – No specific or unique food chain organisms are known or suspected to exist on the site. (RGCEIS Section 4.4 Biological Resources)
26. Shellfish Production – The site is many miles from the coast and the project will not affect local shellfish production. (RGCEIS Section 4.4 Biological Resources)
27. The US Army, Fort Stewart is the lead federal agency for this proposed action. The site will impact RCW foraging habitat. This site will also impact a potential breed pond for the flatwoods salamander. However, there has never been a salamander found in this pond. Formal consultation with the USFWS has been completed for these impacts. Fort Stewart has completed required consultation and the USFWS has made necessary Section 7 of the Endangered Species Act determinations.
28. General Environmental Concerns – The project is expected to incur only the most minimal adverse impact to the local ecosystem. Sites are chosen to include the goal of avoiding and/or minimizing such impacts. Where it is possible and appropriate, impacts to environmental resources would be mitigated. Fort Stewart is generating an Environmental Impact Statement detailing these impacts.
29. Property Ownership – The property is owned by the United States Army for the primary purpose of military training. (RGCEIS Section 4.7 Land Use)
30. Mineral Needs – No particularly valuable or unique minerals are known or suspected to exist at the site. (RGCEIS Section 4.1 Geology and Soils)
31. Other – No notable environmental aspects not covered by the preceding will be impacted by this project.

D. US ARMY CORPS OF ENGINEERS' WETLAND POLICY: The proposed wetland alteration is necessary to realize the project's purpose and should result in minimal adverse

environmental impacts. The benefits of the project would outweigh the minimal detrimental impacts. Therefore, the project is in accordance with USACE Wetland Policy (33 CFR 320.4(b)).

E. TITLE III OF THE CIVIL RIGHTS ACT OF 1964 AND EXECUTIVE ORDER 12898: The proposed action would not directly, or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin, nor would it have a disproportionate effect on minority or low-income communities.

F. CUMULATIVE IMPACTS: The Council on Environmental Quality (CEQ) defines cumulative impacts as the “impact on the environment which results from the incremental impact of the action(s) 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” (40 CFR 1508.7).

Geographic Scope/Region of Influence (ROI): the National Environmental Policy Act (NEPA) requires that the impacts of each proposed project be considered within the appropriate geographical area/region of influence. The geographic area/ROI for purposes of consideration of proposed projects within the boundaries of Fort Stewart are: the Altamaha watershed and United States Geological Service, Georgia Hydrologic Unit Code (HUC) 03070106 encompassing portions of Appling, Evans, Glynn, Jeff Davis, Long, McIntosh, Montgomery, Tattnall, Toombs, and Wayne County; the Lower Ogeechee River watershed HUC 03060202, encompassing portions of Bryan, Bulloch, Chatham, Effingham, Emanuel, Jenkins, and Screven Counties; the Little Ogeechee watershed HUC 03060204, encompassing portions of Bryan, Chatham, Effingham, Liberty, Long and McIntosh Counties; and the Canoochee Creek watershed HUC 03060203, encompassing portions of Bryan, Liberty, Evans, Tattnall, Candler, Emanuel, and Bulloch Counties. The USACE determined that actions taken in the “Fort Stewart Watersheds” would be sufficiently similar in location, topography, watershed impacts, habitat types, etc., to be considered in a cumulative impacts assessment. To properly scope this analysis the USACE has identified target resources for evaluation based on public and agency comments. Target resources are important resources that could be cumulatively affected by activities in the identified scoping area.

The USACE identified the following target resources because of their scarcity and regional importance: (1) wetlands; (2) water quality; (3) aquatic species, and (4) mitigation. Below we have assessed the cumulative impacts of the proposed project on these target resources. In doing

this, we considered the impacts of this project, past projects, as well as all reasonably foreseeable impacts in the Fort Stewart Watersheds consisting of HUC's 03070106, 03060202, 03060204, and 03060203.

The proposed action, in addition to other projects in the geographic areas of consideration (i.e., HUC's 03070106, 03060202, 03060204, and 03060203), have the possibility to result in either negative or positive impacts in a cumulative manner. Cumulative impacts are most likely to occur when a relationship exists between a proposed action, or alternative, and other actions expected to occur in a similar location, time period, and/or involving similar actions, i.e. past, present, and reasonably foreseeable future actions.

There are numerous projects in the watersheds associated with Fort Stewart, which are part of typical urban activities/development. These projects can be categorized generally as construction, maintenance, or demolition. This analysis takes into account the proposed project/action along with the larger projects in the ROI.

1. Wetlands: The following table provides information on all wetland impacts permitted by the Savannah District between January 1, 1990, and July 6, 2005, and the acres of wetland mitigation required for these impacts. This information was generated by the Savannah District Regulatory Analysis and Management System (RAMS) database. There has undoubtedly been some additional loss of wetland during this time period from activities not regulated by the USACE, but no data exist on these losses.

Table 4. Wetland Impacts from January 1, 1990, through July 6, 2005, in the Counties Included in the Fort Stewart Watersheds

County	Acres	Wetland Acres Requested	Wetland Acres Permitted	Wetland Acres Mitigated
Bryan	111509	38.15	41.81	236.29
Bulloch	81797	114.67	119.28	205.28
Chatham	162459	701.13	666.91	4298.24
Effingham	127318	175.13	205.08	633.59
Emanuel	42158	67.78	67.78	269.26
Jenkins	35292	55.74	55.74	230.22
Screven	85270	47.99	57.19	92.08
Liberty	139558	55.74	55.74	230.22

Long	93629	117.9	117.9	1343.68
McIntosh	149942	16.86	16.85	69.64
Appling	39963	34.02	34.02	70.39
Evans	12493	21.28	21.28	34.81
Glynn	134011	210.8	210.13	1496.65
Jeff Davis	23394	2.68	2.68	3.75
Montgomery	14426	8.78	8.78	6.96
Tattnall	33959	31.49	31.49	73.08
Toombs	21718	3.45	3.45	2.43
Wayne	99669	189.6	188.5	1499.45
Candler	17051	4.98	10.48	4.78
Emanuel	42158	67.78	67.78	269.26
	1467774	1965.95	1982.87	11070.06
TOTALS				

In summary, the USACE can document that in 1990 there were approximately 1,467,774 acres of wetlands in HUC's 03070106, 03060202, 03060204, and 03060203 within Bryan, Bulloch, Chatham, Effingham, Emanuel, Jenkins, Screven, Liberty, Long, McIntosh, Appling, Evans, Glynn, Jeff Davis, Montgomery, Tattnall, Toombs, Wayne, Candler and Emanuel Counties. By deducting 1,982.87 acres of wetland impacts since 1990 (RAMS database), there are at least 1,465,792 acres of wetlands remaining in this area. This amounts to a loss of 0.2 percent of the wetlands in HUC's 03070106, 03060202, 03060204, and 03060203 since 1990. The largest percent loss by county would be Chatham County, where 0.4 % of the wetlands have been impacted since 1990. The USACE can also document that 11,070.06 acres of wetland mitigation were provided to offset the post 1990 wetland impacts in this area.

In addition to the impacts described above, Fort Stewart itself has experienced some wetland impacts associated with various projects since the close of the review period in 2005. Some major restoration projects, employed to mitigate wetland impacts, have also occurred within and after the review period, but have not been integrated into the data described above. The effects of these projects are outlined in the table below.

Table 5. Fort Stewart Wetland Impacts Post-2005

	Wetland Acres	Wetland Acres	Wetland Acres
County	Requested	Permitted	Mitigated
Bryan	4.23	4.23	0

Liberty	214.77	214.77	3230
Long	0	0	0
Evans	0	0	0
Tattnall	0	0	0
TOTALS	219	219	3230

The following is a list of Fort Stewart projects authorized by the USACE within Fort Stewart watersheds outside the review period.

a. Department of the Army Permit 940000880 (modification), issued June 29, 1995, authorized the enhancement of approximately 1,300 acres of wetlands in the A11 training area of Fort Stewart, to mitigate for 2.1 acres of wetlands impacted by the earlier construction (under the same Permit number) of rail pass tracks in an adjacent training area.

b. Department of the Army File Number 200007600 refers to the restoration and enhancement of approximately 1,200 acres of wetlands to create Fort Stewart's Canoochee Creek Reservoir (or "Pond 4") Mitigation Bank.

c. Department of the Army Permit 200601665, issued December 6, 2006, authorized impacts to 4.23 acres of wetlands in Bryan County for improvements to the road in Fort Stewart's existing Convoy Live Fire Range. Mitigation consisted of a debit of 12.7 credits from the Installation's on-post wetland mitigation bank.

d. Department of the Army Permit 200501852, issued March 12, 2007, authorized impacts to 206.9 acres of wetlands in Liberty County for the construction of the Digital Multipurpose Range Complex. 4.0 acres of jurisdictional wetland were impacted through direct filling; the remaining 202.9 acres were impacted through cutting of vegetation to meet line-of-sight requirements. Mitigation was accomplished through the Strum Bay Restoration, which (under the same Permit) restored and enhanced approximately 730 acres of wetlands adjacent to the project area by correcting previously impacted hydrology.

e. One project for which a DA Permit is pending, vehicle maintenance facilities in support of 2nd BCT operations, will impact a total of 7.87 acres of wetlands. Although no DA Permit number has yet been assigned to these projects as they are still in the planning stages, the Fort Stewart Wetland Mitigation Bank has been debited in anticipation of them, so the impacts have

been included in this analysis.

Fort Stewart has implemented an aggressive mitigation program in order to offset wetland impacts on the Installation. These projects include wetland enhancement and wetland restoration projects on large scale areas that provide higher quality mitigation than smaller patchwork single permit mitigation products. The following are current wetland mitigation projects located within the boundaries of Fort Stewart:

Pond 4 Mitigation Bank (USACE File Number 200007600): This single user bank was permitted for projects located within the boundaries of the Fort Stewart Installation. Approximately 1200 acres of wetlands were restored within the Canoochee Creek and Strum Bay wetland systems. This project is mostly comprised of deepwater and hardwood swamp habitat. Additional areas upstream of Pond 4 are currently being studied that would increase the total amount of wetland enhancement and restoration (see Strum Bay Mitigation Area below).

A-11 Mitigation Area (USACE File Number 940000880): This project specific mitigation area is comprised of approximately 1300 acres of wetland enhancement/restoration. Hydrologic enhancement/restoration was completed through the reintroduction of hydrology that had been previously diverted around the project area. It is comprised mostly of pine/cypress flatwoods and hardwood drainages.

Strum Bay Mitigation Area (USACE File Number 200501852): This project specific mitigation was originally developed to mitigate impacts associated with the DMPRC. Subsequent studies realized a much larger restoration/enhancement was obtained by re-directing hydrology back into the Strum Bay wetland system. This project has now identified enhancement and restoration of wetland hydrology to approximately 730 acres. This portion of the Strum Bay wetland system is located upstream from the Pond 4 Mitigation Bank, thus creating additional benefits to water quality and habitat to the entire Strum Bay wetland system and Pond 4 Mitigation Bank.

Summary: These effects, when combined with other projects in the ROI, do have the potential to result in adverse cumulative impacts; however, it is expected that other projects in the ROI will be implemented as follows: projects will use erosion control measures, silt fencing, and other Best Management Practices (BMPs); sufficient storm water management structures will be constructed as part of new construction; erosion and sedimentation control plans will be filed in accordance with Georgia's Sedimentation Pollution Control Act; and all projects will be conducted in accordance/in compliance with federal, state, and local laws. This includes

obtaining and adhering to appropriate wetland permits, including compliance with compensatory wetland mitigation requirements outlined in the wetland permit(s).

2. Water Quality: Water quality is affected by changes to the environment (referred to as stressors) that adversely affect aquatic life or impair human uses of a water body. Point sources are municipal and industrial wastewater discharge. Non-point sources consist of sediment, litter, bacteria, pesticides, fertilizers, metals, oils, grease, and a variety of other pollutants that are washed from rural and urban lands by storm water. Expected growth in population and employment in the basin will mean more potential stress from storm water runoff as well as non-point source loading.

Wetland Loss: The impacts to wetlands discussed above would be expected to have an adverse impact on water quality due to the loss of associated aquatic functions (flood water retention, filtration, contaminate removal, sediment retention, etc.). The mitigation for these impacts would help to offset these impacts to water quality.

Point Source Discharges: Impacts from municipal wastewater, agricultural, and industrial discharges were greater prior to the 1970's. Due to increased regulation, these discharges have been reduced but continue to introduce pollutants into the system, which lower water quality when considered cumulatively. Georgia's "2004 303(d) List" for Bryan, Evans, Liberty, Long, and Tattnall counties have 3 waterways listed as impaired or partially impaired; they are listed in the table below with the causes of impairment.

Table 6.

Waterway	Cause of Impairment
Canoochee River	Trophic-weighted residue value (mercury in fish tissue)
Peacock Creek	Low dissolved oxygen and fecal coliform bacteria
Taylor's Creek	Low dissolved oxygen

Non-point Source Discharges: Residential, commercial and industrial development results in an increase in impervious surfaces (roof tops, paved roads, parking lots, etc.), which affects storm water discharges. Development results in an increase in non-point source contaminant loading through associated increases in urban landscaping (pesticides and fertilizers), increased traffic

(oil, grease and metals), and other associated activities. There would be an anticipated incremental increase in adverse impacts to water quality as impervious surfaces increase. The following table is a summary of anticipated population growth-induced increases in impervious surfaces in the Altamaha watershed. The amount of impervious surface coverage is increasingly recognized as a valuable predictor of overall water quality within a watershed. In general, as population increases, so does impervious surface. As impervious surface area increases, water quality decreases. Table 4.1 shows population and impervious surface area growth over time for the Lower Ogeechee watershed; Table 4.2 shows population and impervious surface area growth over time for the Canoochee watershed; Table 4.3 shows population and impervious surface area growth over time for the Little Ogeechee watershed; Table 4.4 shows population and impervious surface area growth over time for the Altamaha watershed.

The impervious surface data was generated by the USEPA and provided to the USACE via a table titled “Total Impervious Area Calculations by 12-Digit HUC Watershed (based upon National Land Cover Data, 1993). Using simple linear regression analysis, the USACE utilized county population projection data to estimate percent increase in impervious surface, by county. The data contained in Tables 4.1 thru 4.4 indicates that as the population of each county continues to increase, there will be an associated increase in impervious surfaces. All counties in the study area would be anticipated to experience an increase of less than one percent impervious surface by the year 2050. However, each county is responsible for regulating non-point source storm water discharges pursuant to Section 402 of the CWA. These county storm water management programs should help to minimize the anticipated adverse impacts to water quality.

Table 7. Projected Population Growths and Associated Approximate Impervious Surface Increases
Lower Ogeechee - HUC 03060202

County		Year						
		2007	2008	2010	2020	2030	2040	2050
Bryan	Population / square mile	66	69	70	88	106	124	142
	% impervious Surface							
	Coverage	2.33	2.37	2.39	2.68	2.97	3.26	3.55
Bulloch	Population / square mile	96	98	101	120	139	157	176
	% impervious Surface							
	Coverage	2.81	2.84	2.89	3.20	3.50	3.79	4.09
Chatham	Population / square mile	385	389	386	410	434	457	481
	% impervious Surface							
	Coverage	7.33	7.39	7.35	7.71	8.07	8.42	8.78
Effingham	Population / square mile	105	108	111	142	173	204	234
	% impervious Surface							
	Coverage	2.95	3.00	3.05	3.55	4.04	4.53	5.00
Emanuel	Population / square mile	32	33	33	34	36	37	38
	% impervious Surface							
	Coverage	1.77	1.79	1.79	1.81	1.84	1.85	1.87
Jenkins	Population / square mile	24	24	25	25	25	25	26
	% impervious Surface							
	Coverage	1.64	1.64	1.66	1.66	1.66	1.66	1.68
Screven	Population / square mile	23	23	24	25	26	27	28
	% impervious Surface							
	Coverage	1.63	1.63	1.64	1.66	1.68	1.69	1.71
Watershed Average								
Lower Ogeechee	Population / square mile	104	106	107	121	134	147	161
	% impervious Surface							
	Coverage	2.92	2.95	2.97	3.18	3.39	3.60	3.81

Table 8. Projected Population Growths and Associated Approximate Impervious Surface Increases
Canoochee - HUC 03060203

County		Year						
		2007	2008	2010	2020	2030	2040	2050
Bryan	Population / square mile	66	69	70	88	106	124	142
	% impervious Surface							
	Coverage	2.33	2.37	2.39	2.68	2.97	3.26	3.55
Bulloch	Population / square mile	96	98	101	120	139	157	176
	% impervious Surface							
	Coverage	2.81	2.84	2.89	3.20	3.50	3.79	4.09
Candler	Population / square mile	42	43	44	50	56	62	67
	% impervious Surface							
	Coverage	1.94	1.95	1.97	2.07	2.16	2.26	2.34
Emanuel	Population / square mile	32	33	33	34	36	37	38
	% impervious Surface							
	Coverage	1.77	1.79	1.79	1.81	1.84	1.85	1.87
Evans	Population / square mile	61	62	65	74	84	93	102
	% impervious Surface							
	Coverage	2.24	2.26	2.31	2.46	2.62	2.76	2.91
Jenkins	Population / square mile	24	24	25	25	25	25	26
	% impervious Surface							
	Coverage	1.64	1.64	1.66	1.66	1.66	1.66	1.68
Liberty	Population / square mile	100	97	105	109	114	119	124
	% impervious Surface							
	Coverage	2.87	2.83	2.95	3.02	3.10	3.18	3.26
Long	Population / square mile	28	28	31	38	46	53	60
	% impervious Surface							
	Coverage	1.71	1.71	1.76	1.87	2.00	2.11	2.23
Tattnall	Population / square mile	47	48	50	57	63	70	76
	% impervious Surface							
	Coverage	2.02	2.03	2.07	2.18	2.28	2.39	2.49
Watershed Average								
Canoochee	Population / square mile	55	56	58	66	74	82	90
	% impervious Surface							
	Coverage	2.15	2.16	2.20	2.33	2.46	2.58	2.71

Table 9. Projected Population Growths and Associated Approximate Impervious Surface Increases Little Ogeechee - HUC 03060204

County		Year						
		2007	2008	2010	2020	2030	2040	2050
Bryan	Population / square mile	66	69	70	88	106	124	142
	% impervious Surface							
	Coverage	2.33	2.37	2.39	2.68	2.97	3.26	3.55
Chatham	Population / square mile	385	389	386	410	434	457	481
	% impervious Surface							
	Coverage	7.33	7.39	7.35	7.71	8.07	8.42	8.78
Effingham	Population / square mile	105	108	111	142	173	204	234
	% impervious Surface							
	Coverage	2.95	3.00	3.05	3.55	4.04	4.53	5.00
Liberty	Population / square mile	100	97	105	109	114	119	124
	% impervious Surface							
	Coverage	2.87	2.83	2.95	3.02	3.10	3.18	3.26
Long	Population / square mile	28	28	31	38	46	53	60
	% impervious Surface							
	Coverage	1.71	1.71	1.76	1.87	2.00	2.11	2.23
McIntosh	Population / square mile	20	20	21	24	26	29	32
	% impervious Surface							
	Coverage	1.58	1.58	1.59	1.64	1.68	1.72	1.77
Watershed Average								
Ogeechee Coastal	Population / square mile	117	119	121	135	150	164	179
	% impervious Surface							
	Coverage	3.13	3.15	3.18	3.41	3.64	3.87	4.10

Table 10. Projected Population Growths and Associated Approximate Impervious Surface Increases
Altamaha - HUC 03070106

Appling	Population / square mile	35	35	36	38	41	43	46
	% impervious Surface Coverage	1.82	1.82	1.84	1.87	1.92	1.95	2.00
Evans	Population / square mile	61	62	65	74	84	93	102
	% impervious Surface Coverage	2.24	2.26	2.31	2.46	2.62	2.76	2.91
Glynn	Population / square mile	128	130	129	141	152	164	175
	% impervious Surface Coverage	3.32	3.36	3.34	3.53	3.71	3.90	4.07
Jeff Davis	Population / square mile	40	40	40	42	44	47	49
	% impervious Surface Coverage	1.90	1.90	1.90	1.94	1.97	2.02	2.05
Long	Population / square mile	28	28	31	38	46	53	60
	% impervious Surface Coverage	1.71	1.71	1.76	1.87	2.00	2.11	2.23
McIntosh	Population / square mile	20	20	21	24	26	29	32
	% impervious Surface Coverage	1.58	1.58	1.59	1.64	1.68	1.72	1.77
Montgomery	Population / square mile	36	36	38	42	45	49	53
	% impervious Surface Coverage	1.84	1.84	1.87	1.94	1.98	2.05	2.11
Tattnall	Population / square mile	47	48	50	57	63	70	76
	% impervious Surface Coverage	2.02	2.03	2.07	2.18	2.28	2.39	2.49
Toombs	Population / square mile	75	76	76	81	87	92	97
	% impervious Surface Coverage	2.47	2.49	2.49	2.57	2.67	2.75	2.83
Wayne	Population / square mile	45	45	46	52	58	63	69
	% impervious Surface Coverage	1.98	1.98	2.00	2.10	2.20	2.28	2.37
Watershed Averages								
Altamaha	Population / square mile	52	52	53	59	65	70	76
	% impervious Surface Coverage	2.09	2.10	2.12	2.21	2.30	2.39	2.48

Summary: This effect, when combined with other projects in the geographical area of influence, does have the potential to result in adverse cumulative impacts; however, it is expected that future projects would be implemented as follows: projects will use erosion control measures, silt fencing, and other BMPs; sufficient storm water management structures will be constructed as part of new construction; erosion and sedimentation control plans will be filed in accordance with Georgia's Sedimentation Pollution Control Act; and all projects will be undertaken in accordance with federal, state, and local laws.

Fort Stewart's role in general and project-specific oversight to ensure compliance with environmental legislation and the overall health of the local ecosystem have certainly played a role in mitigating adverse impacts to water quality. Also, the use of this large (~ 280,000 acres) area of land for military training has and will continue to ensure that the vast majority of the Installation remains managed wilderness. This allows natural processes to operate in support of water quality to a degree not seen in many surrounding areas which have experienced a great deal of development, and is the primary contributor to good water quality relative to those areas. Also, it must be noted that many projects related to military training (ex: firing ranges) do not feature impervious surfaces to the same degree as many civilian and private projects, and will not experience human activity and traffic of the same frequency and intensity, which might otherwise worsen local water quality. Furthermore, through the oversight of Environmental Compliance Officers, Army units self-monitor their training activities to avoid and minimize potentially harmful activities. A 1999 water quality survey performed by Fort Stewart determined that the quality of water leaving Fort Stewart's geographic boundaries was of equal or better quality than that which entered the Installation.

In view of the above, the USACE determined that the proposed project, with proposed special permit conditions, would have minimal impacts on water quality when considered alone or in concert with the other past, present and reasonably foreseeable future projects in the basin.

3. Aquatic Species: Permitted impacts to wetlands and water quality as discussed above have affected fish and other aquatic species such as mussels and aquatic insects.

The proposed projects would not result in a direct adverse impact to any stream or river, or to aquatic species in the waterways. Rather, the project would result in an unavoidable impact to 103.34 acres of wetland, and a loss of the aquatic habitat function provided by these wetlands. However, this project-related wetland loss would be minor when considered cumulatively with

all other past and planned wetland losses discussed above. In addition, the applicant's proposed wetland mitigation plan would help to offset the aquatic habitat function loss that would result from this project. Furthermore, Fort Stewart Fish & Wildlife monitors and maintains the quality of Fort Stewart aquatic habitats as part of their fisheries program.

Overall, the proposed projects will not have a significant impact on Fort Stewart aquatic habitats and species.

4. Compensatory Mitigation: As defined in the NEPA regulations, compensatory mitigation is "*compensation for the impact by replacing or providing substitute resources or environments*" (40 CFR Part 1508.20). The Installation utilized the Compensatory Mitigation Rule (33 CFR Part 332) when developing its mitigation plan for the proposed FY11 Multipurpose Machine Gun Range. The compensatory wetland mitigation ratios proposed for this project are 3:1 for those projects utilizing the on-post mitigation bank, and approximately 8:1 for projects utilizing off-post credits. The applicant's proposed compensatory wetland mitigation plan would provide more than would be needed to offset lost aquatic functions, and greater than required by 404 mitigation guidance as stated in the SOP for determining compensatory mitigation.

In addition to on-post mitigation areas, Fort Stewart has elected to mitigate impacts from its proposed ranges by purchasing credits from the Wilkinson-Oconee Mitigation Bank. The size and importance of this range project drove this decision, which will allow the on-post Bank to be reserved for numerous other smaller projects, which would not be likely to receive the funding which makes off-post mitigation an option. The Wilkinson-Oconee Bank consists of 6,735 acres of restored, enhanced, and preserved bottomland hardwood and cypress-tupelo wetlands – the same types predominating on Fort Stewart. The placement of Fort Stewart within the service area of this Bank, the similarity of wetland types, and the quantity of available credits, made the Wilkinson-Oconee the ideal off-post mitigation option compared to other mitigation banks in Georgia.

Proposed project: The proposed project supporting military training will adversely impact 103.34 acres of Jurisdictional Wetland. To mitigate for these impacts the applicant would purchase 336.76 mitigation credits from a USACE approved mitigation bank that services the project area. Additionally, some small projects will be mitigated through debits from the Installation's on-post wetland mitigation bank. As such, any adverse impacts to wetlands and other waters of the U.S. caused by this project would be offset by the proposed mitigation.

Summary: The main public detriment that would result from this project would be the loss of 103.34 acres of jurisdictional wetlands. Many of the wetland functions and values important to the public, such as flood attenuation, sediment retention, fish and wildlife habitat, and others, would be replaced by the applicant's mitigation plan. Additionally, Fort Stewart's past mitigation efforts (approximately 3,230 acres) have adequately offset impacts within the boundaries Fort Stewart. Mitigation for the current projects will be offset through additional mitigation efforts, including the use of off-site USACE approved wetland mitigation banks. The mitigation plan would also provide adequate compensation for the impacted wetlands through the implementation of wetland creation, enhancement and preservation. The proposed projects would not impact federal or state protected species or critical habitat. Cultural resources have been considered and it has been determined that they would not be impacted. Overall, the public benefits of the proposed project would outweigh the public detriments.

In view of the above, the USACE has determined that the proposed project, with proposed special permit conditions, would not have a significant impact on wetlands and/or other waters of the U.S. when considered alone or in concert with the other past, present and reasonably foreseeable future projects in the Fort Stewart watersheds.

F. SECONDARY/INDIRECT IMPACTS: See Section E above and the Range and Garrison Construction Environmental Impact Statement, prepared by Fort Stewart.

G. IRREVERSIBLE AND IRRETRIEVABLE RESOURCE COMMITMENTS: Authorization of the applicant's preferred alternative, or any other build alternative, could result in an irreversible and irretrievable commitment of a range of natural, physical, human and fiscal resources. The fossil fuels, labor and construction materials that would be expended, if the project is constructed, are generally not considered irretrievable resources. In addition, these resources are not in short supply and their use would not have an adverse effect upon their continued availability.

H. EFFECT ON FEDERAL PROJECTS: We have determined the proposed activity would not have an adverse effect on any Federal Project (33 CFR 320.4(g)).

PART V - PERMIT ACTION ALTERNATIVES

A. TO ISSUE THE PERMIT IN ACCORDANCE WITH THE PLANS SUBMITTED BY THE APPLICANT: This course of action by itself would be inappropriate because it does not include

provision for special conditions (See D. below).

B. TO DENY THE REQUEST FOR A PERMIT: Denial of the permit would not be an appropriate course of action. The proposed activity would not have significant adverse effects on navigation, the environment or other public interest factors.

C. TO ISSUE THE PERMIT AFTER SUBMITTAL OF MODIFIED PLANS BY THE APPLICANT WITH SPECIAL CONDITIONS: This course of action would not be warranted. Our review of the applicant's plans and alternatives showed the applicant's proposed activity to be the most practicable way to accomplish the applicant's overall purpose.

D. TO ISSUE THE PERMIT IN ACCORDANCE WITH THE PLANS SUBMITTED BY THE APPLICANT WITH SPECIAL CONDITIONS: This would be the appropriate course of action to follow. In order to protect the public interest the following special conditions would be placed on any permit issued:

1. All dredged or borrowed material used as fill on this project will be from clean, uncontaminated sources and free from cultural resources.

2. That no construction activity or stockpiling will occur in waters of the United States, including wetland areas, outside of the areas authorized for filling under this permit.

3. Prior to the commencement of construction activities for this project, the limits of the proposed fill areas in jurisdictional waters shall be clearly flagged and staked by you and/or your contractors. All construction personnel shall be shown the location(s) of all wetland and/or stream areas outside of the construction area to prevent encroachment from heavy equipment into these areas.

4. Borrow site or sites for stockpiling fill dirt shall be prohibited within 200 feet of streambanks, 50 feet of wetlands and open waters or elsewhere runoff from the site would increase sedimentation in waters of the United States unless specifically authorized by this permit. Normal grading activities such as cutting and filling within 200 feet of streams or 50 feet of wetlands/open waters are authorized.

5. Construction debris, liquid concrete, old riprap, old support materials, or other litter shall not be placed in streams or in areas where migration into streams and/or wetlands could

reasonably be expected.

6. Staging areas and equipment maintenance areas will be located at least 200 feet from streambanks to minimize the potential for wash water, petroleum products, or other contaminants from construction equipment entering the streams.

7. The permittee shall ensure that the project's master drainage plan is designed and implemented to avoid inadvertent drainage of wetlands and inadvertent water diversion resulting in a reduction of hydrology in wetlands. The permittee shall also ensure that secondary road ditches and/or small after-project drainage ditches do not inadvertently impact wetlands or waters of the US.

8. The permittee shall minimize bank erosion and sedimentation in construction areas by utilizing BMPs for stream corridors, installing and maintaining significant erosion and sediment control measures, and providing daily reviews of construction and stream protection methods. Check dams and riprap placed in streams and wetlands as erosion control measures are considered a fill and not authorized under this permit unless they were specifically authorized by this permit.

9. All work conducted under this permit shall be located, outlined, designed, constructed and operated in accordance with the minimal requirements as contained in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. Utilization of plans and specifications as contained in "Manual for Erosion and Sediment Control, (Latest Edition)," published by the Georgia Soil and Water Conservation Commission or their equivalent will aid in achieving compliance with the aforementioned minimal requirements.

10. You shall obtain and comply with all appropriate Federal, state, and local authorizations required for this type of activity. A stream buffer variance may be required. Variances are issued by the Director of the Georgia Environmental Protection Division (EPD), as defined in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. It is our understanding that you may obtain information concerning variances at the Georgia EPD's web site at www.gaepd.org or by contacting the Watershed Protection Branch at (404) 675-6240.

11. If you or your contractors discover any federally listed threatened or endangered species and/or their habitat while accomplishing the activities authorized by this permit, you must immediately STOP work in the area and notify the issuing office of what you have found.

We will initiate the Federal and state coordination required to determine if the species and/or habitat warrant further consultation with the USFWS.

12. Prior to the commencement of construction activities for this activity, the permittee shall insure that this project complies with all applicable rules, requirements, and/or regulations of the FEMA and/or the Georgia Floodplain Management Office with regard to construction activities in designated floodplains and/or floodways prior to commencement of work activity, to include revisions to the National Flood Insurance Program maps if required.

13. Prior to the commencement of any work in jurisdictional waters of the United States for this activity, you will purchase wetland mitigation credits from an approved wetland mitigation bank. You or the mitigation bank sponsor must provide this office with documentation of this purchase before any work may commence. The notice should reference the USACE file number assigned to this project.

14. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the NRHP.

15. The permittee, US Army Fort Stewart, is the lead federal agency for this proposed action. The permittee shall meet all lead federal agency responsibilities pursuant to Section 7 of the Endangered Species Act, prior to any work occurring in waters of the US subject to the jurisdiction of the USACE.

16. The permittee, US Army Fort Stewart, is the lead federal agency for this proposed action. Fort Stewart shall meet all lead federal agency responsibilities pursuant to Section 106 of the National Historic Preservation Act, prior to any work occurring in waters of the US subject to the jurisdiction of the USACE.

17. The site design for this project was based on the 90% design. Authorized wetland impacts are based on a standard range design. Prior to conducting any work in wetlands on this project site, the permittee shall submit final site development plans to the USACE for review and approval. No work in wetlands can occur until the USACE has reviewed and approved the final plan in writing; this concurrence letter needs to document that the 404(b)(1) process has been adequately demonstrated. It is anticipated that once final design is completed, there will be a

minor reduction in the amount of wetland area that will be impacted by the project. This anticipated change in the footprint of authorized wetland impact is authorized under this permit and modification of the permit will not be required for this change in site design.

18. If a conditioned Water Quality Certification has been issued for your project, you must comply with conditions specified in the certification as Special Conditions to this permit.

PART VI – COURSE OF ACTION FIGURES



Figure Redacted

USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
GLENNVILLE NE 7.5 MINUTE QUADRANGLE



VICINITY MAP - PREFERRED COA

1" = 4,000'
0 2,000 4,000 8,000 Feet

PROJECT: MPMG - MULTIPURPOSE
MACHINE GUN RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

FIGURE: 1 OF 7

DATE: FEBRUARY 2010

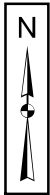


Figure Redacted

USGS TOPOGRAPHIC MAPS

DAISY 7.5 MINUTE QUADRANGLE
GROVELAND 7.5 MINUTE QUADRANGLE
LANIER 7.5 MINUTE QUADRANGLE
MELDRIM 7.5 MINUTE QUADRANGLE
GLISSONS MILLPOND 7.5 MINUTE QUADRANGLE
WILLIE 7.5 MINUTE QUADRANGLE
LETFORD 7.5 MINUTE QUADRANGLE
MELDRIM SW 7.5 MINUTE QUADRANGLE
MELDRIM SE 7.5 MINUTE QUADRANGLE
GLENNVILLE NE 7.5 MINUTE QUADRANGLE
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
TRINITY 7.5 MINUTE QUADRANGLE
LIMERICK NW 7.5 MINUTE QUADRANGLE
RICHMOND HILL 7.5 MINUTE QUADRANGLE
GLENNVILLE SE 7.5 MINUTE QUADRANGLE
WALTHOURVILLE 7.5 MINUTE QUADRANGLE
HINESVILLE 7.5 MINUTE QUADRANGLE
DORCHESTOR 7.5 MINUTE QUADRANGLE
LIMERICK SE 7.5 MINUTE QUADRANGLE



VICINITY MAP - CONSIDERED COAS

1" = 19,000'

0 9,500 19,000 38,000
Feet

PROJECT: MPMG - MULTIPURPOSE
MACHINE GUN RANGE

COUNTY: LIBERTY/BRYAN

SURVEY DATUM: UTM

FIGURE: 2 OF 7

DATE: FEBRUARY 2010

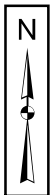


Figure Redacted

USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
GLENNVILLE NE 7.5 MINUTE QUADRANGLE



LOCATION MAP - PREFERRED COA

1" = 2,000'
0 1,000 2,000 4,000 Feet

PROJECT: MPMG - MULTIPURPOSE
MACHINE GUN RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

FIGURE: 3 OF 7

DATE: FEBRUARY 2010



Figure Redacted

USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
GLENNVILLE NE 7.5 MINUTE QUADRANGLE



LOCATION MAP - COA 2

1" = 2,000'

0 1,000 2,000 4,000 Feet

PROJECT: MPMG - MULTIPURPOSE
MACHINE GUN RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

FIGURE: 4 OF 7

DATE: FEBRUARY 2010

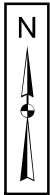


Figure Redacted

USGS TOPOGRAPHIC MAPS
MELDRIM SE 7.5 MINUTE QUADRANGLE
RICHMOND HILL 7.5 MINUTE QUADRANGLE



LOCATION MAP - COA 3

1" = 2,000'

0 1,000 2,000 4,000 Feet

PROJECT: MPMG - MULTIPURPOSE
MACHINE GUN RANGE

COUNTY: BRYAN

SURVEY DATUM: UTM

FIGURE: 5 OF 7

DATE: FEBRUARY 2010



Figure Redacted

USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
WALTHOURVILLE 7.5 MINUTE QUADRANGLE



LOCATION MAP - COA 4

1" = 2,000'

0 1,000 2,000 4,000 Feet

PROJECT: MPMG - MULTIPURPOSE
MACHINE GUN RANGE

COUNTY: LIBERTY/BRYAN

SURVEY DATUM: UTM

FIGURE: 6 OF 7

DATE: FEBRUARY 2010



Figure Redacted

USGS TOPOGRAPHIC MAPS
WILLIE 7.5 MINUTE QUADRANGLE
LETFORD 7.5 MINUTE QUADRANGLE
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
TRINITY 7.5 MINUTE QUADRANGLE



LOCATION MAP - COA 5

1" = 2,000'
0 1,000 2,000 4,000 Feet

PROJECT: MPMG - MULTIPURPOSE
MACHINE GUN RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

FIGURE: 7 OF 7

DATE: FEBRUARY 2010

PART VII – PERMIT FIGURES



Figure Redacted

USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
WALTHOURVILLE 7.5 MINUTE QUADRANGLE

PURPOSE: FACILITATE THE
CONSTRUCTION OF FACILITIES AND
INFRASTRUCTURE THAT WILL
SUPPORT A MULTIPURPOSE
MACHINE GUN RANGE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

PROJECT VICINITY MAP

1" = 4,000'
0 2,000 4,000 8,000 Feet

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY:TAYLORS
CREEK

COUNTY: LIBERTY

FIGURE: 1 OF 6

DATE: FEBRUARY 2010



Figure Redacted

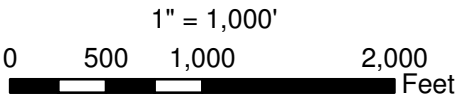
USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE

PURPOSE: FACILITATE THE CONSTRUCTION OF FACILITIES AND INFRASTRUCTURE THAT WILL SUPPORT A MULTIPURPOSE MACHINE GUN RANGE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

PROJECT LOCATION MAP



APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY:TAYLORS CREEK

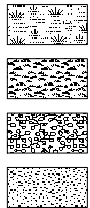
COUNTY: LIBERTY

FIGURE: 2 OF 6

DATE: FEBRUARY 2010



Figure Redacted



PURPOSE: FACILITATE THE
CONSTRUCTION OF FACILITIES AND
INFRASTRUCTURE THAT WILL SUPPORT A
MULTIPURPOSE MACHINE GUN RANGE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

EXISTING CONDITIONS

SCALE: 1" = 800'

0 400 800 1,600 Feet

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: TAYLORS CREEK

COUNTY: LIBERTY

FIGURE: 3 OF 6

DATE: DECEMBER 2009

Figure Redacted

Figure Redacted

Figure Redacted

PURPOSE: FACILITATE THE
CONSTRUCTION OF FACILITIES AND
INFRASTRUCTURE THAT WILL SUPPORT A
MULTIPURPOSE MACHINE GUN RANGE

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

TYPICAL CROSS SECTION

NOT TO SCALE

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY:TAYLORS CREEK

COUNTY: LIBERTY

FIGURE: 5 OF 6

DATE: FEBRUARY 2010

CASE DOCUMENT FOR: QUALIFICATION TRAINING RANGE
APPLICATION NUMBER 200900886
FOR A DEPARTMENT OF THE ARMY PERMIT
BY
FORT STEWART ARMY INSTALLATION, SAVANNAH, GEORGIA

PART I - INTRODUCTION

A. NAME AND ADDRESS OF APPLICANT:

U.S. Army, Fort Stewart Army Installation
Directorate of Public Works
1550 Frank Cochran Drive, Bldg. 1137
Fort Stewart, Georgia 31414

B. APPLICATION NUMBER: 200900886

C. LOCATION OF PROPOSED ACTIVITY: The site is located at Fort Stewart, in Liberty County, Georgia. The site is located in the Delta Small Arms Range (in the vicinity of latitude 31° 55' 21" north and longitude 81° 43' 56" west). A location map is provided in Part VII of this document.

D. PROJECT DESCRIPTION: The Qualification Training Range (QTR) is a small caliber range used to train individual Soldiers on the skills necessary to detect, identify, and engage stationary and moving infantry targets in a tactical array. This range enhances throughput capability for units by consolidating their efforts to operating one live-fire training facility. Primary features of this range include 429 stationary infantry targets (SITs), 20 stationary armor targets (SAT)s, 20 moving infantry targets (MITs), 10 SIT emplacements with multiple targets, two 800-square-foot buildings, one ammunition breakdown building, one air-vault latrine, one covered mess facility, one 248-square-foot range operations tower, and covered bleachers with enclosure.

The applicant has not completed final site design for the above described range project. The standard site layout for this type of range would require the filling and/or mechanized clearing of all 26.7 acres of bottomland hardwood wetlands on the 223-acre project site. The applicant will likely be able to avoid some of the wetlands on the project site as final site design is completed for the project. However, for the purposes of this permit evaluation, the US Army Corps of

Engineers (USACE) will assume that all 26.7 acres of wetlands on the proposed project site would be impacted. In addition, the applicant's proposed wetland mitigation plan is to purchase 216.27 mitigation credits to offset unavoidable impact to 26.7 acres of wetlands.

E. BASIC PURPOSE AND NEED: The basic purpose of the proposed project is to provide active duty and reserve component units and Soldiers, who use the Installation as a training platform, with new facilities that are critical in the training of individual Soldiers in the basic live-fire tasks required to sustain combat readiness and proficiency. The Army Range Requirements Model (ARRM) substantiates that Fort Stewart has a requirement for a QTR to meet training requirements. Fort Stewart's existing ranges do not have the capacity required to sustain the level of throughput necessary to adequately train Soldiers and maintain readiness standards.

F. APPLICANT'S SUPPLEMENTAL INFORMATION: The following information is part of the administrative record for the project.

1. Project Narrative
2. Project Purpose and Need
3. Description of Resources Occurring within the Project Area, Potential Impacts, and Mitigation
4. Vicinity Map
5. Additional Studies and Response to Comments:

G. PROPOSED WORK SUBJECT TO THE JURISDICTION OF THE US ARMY CORPS OF ENGINEERS: The applicant proposes to perform work in, or affecting waters of the United States.

H. APPLICABLE STATUTORY AUTHORITY: The applicant is making application pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344).

PART II - COORDINATION

A. JOINT PUBLIC NOTICE (JPN): On April 21, 2010, the United States Army Corps of Engineers Savannah District (USACE) issued a JPN on the proposed work. Copies of the notice were provided to federal, state, and local agencies and the public. The notice was also posted on USACE public web page.

B. RESPONSE TO JOINT PUBLIC NOTICE: A summary of the comments received in response to the Joint Public Notice is presented in Table 1 below.

Table 1. Summary of Comments

COMMENTOR	OBJECT	3(b) Y/N	NO OBJECT	NO OBJECT W/CONDITION	DATE
Federal Agencies					
1. National Marine Fisheries Services			X		05-24-10
2. US Environmental Protection Agency (EIS comments)				X	04-21-10
3. US Fish and Wildlife Service					*
State of Georgia					
4. State Clearing House					*
5. Coastal Resources Division, Federal Consistency					*
6. Environmental Protection Division					*
Other					
7. Southern Environmental Law Center - Ogeechee River Keeper				X	05-21-10

* No date indicates no comment received.

C. DISCUSSION OF RESPONSES:

1. National Marine Fisheries Service (NMFS): By letter dated May 24, 2010, the NMFS stated “Based on the information in the public notice, the proposed project would not occur in the vicinity of essential fish habitat designated by the South Atlantic Fishery Management Council or NMFS. Present staffing levels preclude further analysis of the proposed activities and no further action is planned. This position is neither supportive of nor in opposition to your authorization of the proposed work.”
2. Environmental Protection Agency (EPA): There were no comments received pursuant the USACE Joint Public Notice dated April 21, 2010, from the EPA. However, Fort Stewart did receive comments and questions from the EPA Region 4, pursuant to the Draft Environmental Impact Statement (EIS) for Training Range and Garrison Support Facilities Construction and Operation at Fort Stewart, Georgia. The following are EPA comments relevant to the Section 404 permit notifications:

a. Issue 1: EPA is currently reviewing a joint public notice dated April 21, 2010, for four individual permits for four projects (DMPTR, IPBC, MPMGR and QTR) with a total of 185.9 acres of wetland impacts. This is a substantial level of wetland impacts, particularly in relation to recently permitted impacts throughout Georgia.

(1) Applicants Response: Fort Stewart avoids and minimizes wetlands impacts when possible. The implementation of the actions proposed in the preferred alternative (Alternative B Sitings) has the potential to negatively impact up to 0.2% of the Installation’s nearly 91,000 acres of wetlands. More importantly, of the “up to 0.2% of the Installation’s wetlands being impacted,” most of those impacts are not the result of adding fill to the wetlands, but rather vegetative maintenance for line-of-sight and grubbing/grading for target placement. As stated earlier in this reply, the Installation anticipates wetland impacts will be much less than projected through further avoidance and minimization incorporated during the design phases of each project after the site is selected. It is important to note, that despite the large amount of military training activity that occurs on Fort Stewart, because of the Installation’s proactive efforts to avoid, enhance, and mitigate wetlands, its wetlands remain of a high quality, retaining and transmitting large amounts of fresh water and providing habitat for countless local species. Proactive environmental stewardship programs also help to keep our wetlands pristine. As discussed in opening paragraphs in Chapter 3 of the DEIS, Fort Stewart’s

Integrated Training Area Management (ITAM) program conducts land rehabilitation through the construction of low water crossings and Soldier training related to sustainability of Fort Stewart lands.

Much of the avoidance and minimization takes place before actual site selection. Training ranges of this kind have fairly specific requirements and it is not always possible to build them without impacting every wetland in the footprint. Site designers may alter certain aspects of a proposed range in response to environmental concerns during various stages of the design process, typically reviewed at the 10%, 35%, 60%, 90%, and 100% stages of completion, if they can do so while still meeting the operational and training requirements of the range. For example, the currently on-going design process reduced the wetland impacts from the IPBC to a third of what they were at the time of writing the DEIS. Impacts from the MPMGR have also been slightly reduced. Several proposed range projects were sited without wetland impacts of any kind. It is hoped that impacts from the QTR and DMPTR may be reduced, but as they are not yet in the design process this cannot be precisely determined.

It is also important to note that not all of the 185.9 acres (now 179.03 acres) of wetlands will actually be cleared, grubbed, and/or filled. Rather, that is a maximum projected “up to” amount. The actual number of acres impacted will likely be reduced further at each design level for target placement, etc.). Therefore, although the “permitted impacts” of this project may seem large in relation to other recently permitted impacts in Georgia, they do not represent substantial impacts to Fort Stewart wetlands resources. This text has been added to Section 4.3.2.2 of the FEIS.

(2) USACE Position: The combined wetland impact associated with the four proposed range projects has been reduced from 185.9 acres to 179.03 acres. In addition, as these projects approach final design, combined wetland impacts are expected to be reduced further. With regard to the amount of proposed wetland impact for these four projects relative to projects recently permitted by the Savannah District, there have been residential, commercial and reservoir projects authorized within the past five years with impacts in excess of 100 acres.

Based on the extensive experience of the USACE in review of permit applications for project located in the lower coastal plain of Georgia, most sites are typically comprised by approximately thirty permit wetlands. Fort Stewart is typical of site in the lower

coastal plain and is also approximately thirty percent wetlands. Fort Stewart is the only military base with large range construction in Coastal Georgia. Proposed wetland impacts associated with the size of this proposed range are comparable to the wetland impacts associated with past range development on Fort Stewart.

a. Issue 2: EPA is particularly concerned that all impacts have been characterized as wetland impacts when two of the four projects show the potential for streams impacts on the 7.5-minute USGS topo quad maps. EPA notes that while the Fort has had a significant cumulative impact to streams from past projects, these impacts have not been mitigated.

(1) Applicants Response: The footprints of the MPMGR and IPBC on the 7.5-minute USGS topographic quads show “blue line” streams in the areas, however, a site visit by Fort Stewart and the Georgia Environmental Protection Division (GA EPD) on January 20, 2010, found no streams. The Savannah District also did not identify any streams within the range footprints. This information was added to Section 4.3.1, of the FEIS.

Over the years, Fort Stewart has worked diligently to mitigate impacts – direct and indirect, as well as cumulative – to the Installation’s streams, as well as wetlands. During the development of the Installation’s wetland bank, for example, thousands of feet of Canoochee Creek and Strum Bay were restored without being credited to the Installation’s mitigation bank. The Installation takes pride in that fact and welcomes working with ORK and other local environmental stakeholders on future projects.

(2) USACE Position: The USACE has completed an expanded preliminary jurisdictional determination for the project site. This determination verified there are no jurisdictional streams located on the project site.

a. Issue 3: The FEIS should provide more discussion regarding the quality of the wetlands impacted. The DEIS mentions they're freshwater wetlands and that the Army has acquired mitigation credits to restore a historically but degraded hardwood wetland system. It is unclear what type of wetlands ecosystems are being impacted by the ranges and garrison proposed projects.

(1) Applicants Response: Surveys of the proposed range and garrison sites by Fort Stewart determined these ecosystems were predominantly broadleaf hardwood palustrine

wetlands consisting of vegetative communities typical of wetlands in the Coastal Plain: pond pine (*Pinus serotina*), pond cypress (*Taxodium ascendens*), water oak (*Quercus nigra*), water tupelo (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), green ash (*Fraxinus pennsylvanica*), American hornbeam (*Carpinus caroliniana*), Highbush blueberry (*Vaccinium corymbosum*), fetterbush lyonia (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*) among many others including varied herbs and grasses. These plants occur with varying frequency depending on the landform and hydrology of particular areas. Animal communities are also supported by these areas – wading birds such as the Great Egret (*Casmerodius albus*), the Snowy Egret (*Egretta thula*), and the Great Blue Heron (*Ardea herodias*), amphibians such as the Bullfrog (*Rana catesbeiana*) and Wood Frog (*Rana sylvatica*), and mammals such as the Whitetail Deer (*Odocoileus virginiana*) were all observed during the surveys of the range project sites. Soil types are hydric sand-loam mixtures of the Ellabelle, Bibb, Pelham, and Leefield types. Text reflecting this information was incorporated into Section 6.4.1 of the FEIS.

(2) USACE Position: The description of the wetlands proposed to be impacted, which was submitted by the applicant and summarized above, is sufficient for the USACE to base an assessment of the wetland quality. In addition, the USACE has made multiple visits to Fort Stewart and is very familiar with the quality of wetlands located within the proposed project site(s). The USACE used this information and its knowledge of wetland habitats on Fort Stewart in its assessment of proposed wetland impacts and the adequacy of the applicant's proposed mitigation plan.

a. Issue 4: EPA is unable to fully evaluate wetlands impacts, which is an area of CWA-designated responsibility for the Agency, in the DEIS because expanded CWA 404(b)(1) analyses have not been prepared for three ranges: FY 13 Modified Record Fire Range, FY 13 10/25 Meter Zero Range, and FY 14 Convoy Live Fire Range. This is a concern. EPA would like to review and comment on these analyses before they appear in the FEIS. Please coordinate with Bob Lord, Region 4's Wetlands Program to discuss further (note, that no comments were received from Bob Lord, Region 4's Wetland Program).

(1) Applicants Response: As we mentioned in Section 4.3.2.2. of the DEIS, the Installation has not prepared §404(b)(1) analyses for the FY13 MRFR, FY13 10/25 Meter Zero Range, and FY14 CLFR because some or all impacts to wetlands will likely

be avoided during the design phase of these projects. The wetlands located on these sites are less than 5 acres each. If, however, wetlands cannot be avoided, the Installation will prepare §404(b)(1) analyses for these projects and request a §404(b) permit at that time.

(2) USACE Position: Wetland impacts pursuant to the construction of the FY 13 Modified Record Fire Range, FY 13 10/25 Meter Zero Range, and FY 14 Convoy Live Fire Range have not been determined by Fort Stewart. When these proposed projects are sited and designs are complete, and if there are any proposed wetland impacts associated with them, Fort Stewart will apply for a Section 404 permit with the USACE. Any proposed wetland impacts will be evaluated at that time and coordinated through the USACE permit process. The USACE is preparing an analysis of the proposed IPBC, MPMGR, DMPTR and QTR pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for the IPBC, MPMGR, DMPTR and QTR projects.

a. Issue 5: The DEIS states that the Fort has a regional permit for low water crossings, issued in 2001 and renewed in 2006 for 5 years, which allows for a maximum of 15 acres of cumulative wetlands impacts from low-water crossings. Approximately 5 acres of wetlands have been impacted using this permit. The FEIS should discuss the application of the Fort's regional permit for low water crossings, which allows for a maximum of 15 acres of cumulative wetlands impacts from low-water crossings, how the cumulative wetlands impacts are defined, and the water quality impacts and other aquatic resources impacts associated with this permit.

(1) Applicants Response: Low water crossings are not a part of the proposed action and there are no new low water crossings anticipated in the foreseeable future. As discussed in Section 3.4.4.2, only routine maintenance and repair of existing low water crossings in the range and training areas will be conducted.

(2) USACE Position: As part of this document, the USACE has prepared a cumulative impact assessment of all known past, presently proposed, and reasonably foreseeable future impacts to aquatic resources. This assessment takes into consideration impacts associated with low water crossings.

a. Issue 6: EPA is concerned that the credit calculations using the Savannah District Standard Operating Procedure (SOP) do not fully compensate for the impacts. The Savannah District has frequently indicated to EPA that the SOP is not applicable to large impacts, such as those over 10 acres. EPA agrees and has proposed a scaling factor to address the cumulative impacts of large projects such as the factor used in the Charleston District SOP. This is the approach used by the Georgia Department of Transportation for its projects that exceed the 10 acre threshold. For very large projects this scaling factor could be capped at an appropriate level. EPA has suggested 3.0 acres, which is equal to the next largest factor used in the SOP. Application of the SOP without a scaling factor for large impacts, particularly the 108.1 acres for the MPMGR is not appropriate, even according to past finding from the Savannah District.

(1) Applicants Response: While a scaling factor may be appropriate to use in many large scale projects where a great deal of fill is being introduced into the wetland system and where the projects require large amounts of impermeable surfaces, neither of these considerations constitute significant components of any of the projects under consideration in the DEIS. Of this filled acreage only a small amount will include the introduction of impermeable surfaces. The only impermeable surfaces will consist of the range operations area and cover only 2% of each project footprint. As noted in Answer #1 above, while maximum projected “up to” amounts have been provided, most of those impacts are not the result of adding fill to the wetlands, but rather vegetative maintenance for line-of-sight and grubbing/grading for target placement.

As a result, it is the Installation’s position that use of any scaling factor is not necessary to compensate for the cumulative impacts associated with these types of projects and applying a scaling factor, as called for in the Charleston District’s SOP, to these types of projects would appear to be arbitrary and capricious as it would not appear to be based on any sound engineering or hydrologic rational but would appear to be more punitive than compensatory in nature.

Moreover, the Installation always takes into account secondary wetland impacts. In reference to the MPMGR, which is the project that contains the majority of the 179.03 acres of wetlands to be potentially impacted, the Installation has evaluated potential secondary cumulative impacts. In our planning process, as noted above, the Installation took a “worst case scenario” approach when determining how to compensate for the quantity of wetlands loss. The Installation is planning to off-set secondary cumulative

wetland effects from this range and has obtained an additional 287 mitigation credits from the Wilkinson-Oconee Bank. The Installation did account for the lost functions and values impacted by the project with respect to direct and indirect impacts.

As noted in Sections 3.4.5 and 4.3.2, the Savannah District is a cooperating agency to this EIS, and was consulted with regard to the factors noted above. Additionally, Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Having reviewed these documents and the associated 404(b)(1), the Savannah District did not suggest a need to utilize a scaling factor.

(2) USACE Position: The present total proposed wetland impact for the four proposed ranges is 179.03 acres. As discussed by the applicant above, not all of these proposed impacts are for fill, but a certain percentage would involve mechanized land clearing impacts. Clearing wetlands of vegetation and maintaining them in scrub/shrub vegetation results in a change in function, but not a total loss in function. The mitigation credits proposed by Fort Stewart are assuming a total loss in function. The proposed mitigation plan is to purchase 1,391 credits to compensate for a total of 179 acres of wetland impact for all four ranges. This is a credit to impact ratio of 7.8:1. On average, three credits are generated for each acre of wetland restoration at the Wilkinson/Oconee Mitigation Bank, where credits will be purchased for the FY11 ranges. Therefore, the effective mitigation ratio for the FY11 Multipurpose Machine Gun Range and FY11 Infantry Platoon Battle Course projects would be approximately 2.6:1 of wetland restoration. The Applicant has not ruled out other acceptable compensatory mitigation alternatives to mitigate wetlands impact (provided through mitigation banks or in-lieu fee programs) for the FY13 Digital Multipurpose Training Range and the FY13 Qualification Training Range. Therefore, it is the position of the USACE that the mitigation proposed for this QTR project would meet the requirements of the new mitigation rule.

a. Issue 7: The DEIS indicates that approximately one-third of the Fort's lands are wetlands. It also states some of the remaining 160 credits contained in the Fort's on-site mitigation bank will be used for the Garrison construction projects. Additionally, the Army has previously purchased credits from an established off-Fort wetland mitigation bank in accordance with the Compensatory Mitigation Rule (33 CFR Part 332) to cover the proposed range projects. The Fort canvassed the available mitigation banks nearly one year ago, which may not reflect the current banks and credit availability. Given the

opportunity, EPA would have discouraged the use of the Wilkinson - Oconee Mitigation Bank since it is out of the watershed, out of the ecoregion, and likely does not fully compensate for the functions lost at the project sites. EPA is also concerned, despite the rationale provided in the DEIS, that the Fort is not fully debiting its own mitigation bank before going to off-site alternatives. The Fort's mitigation bank is within the same watershed and ecoregion and thus more likely to replace the lost wetland functions. There appears to be ample time to expand this bank to accommodate the future needs presented as a reason for not fully using it for these projects. Typically, EPA discourages applicants from purchasing mitigation credits until the Section 404 permit has been issued, because this precludes other, possibly preferable, mitigation actions.

(1) Applicants Response: Although the Fort Stewart mitigation bank has sufficient credits to offset impacts from the two Garrison support construction projects, the Army has determined it is not sufficient to cover the unavoidable negative impacts to wetlands from the FY11-14 training range construction projects, for which the Installation must purchase credits from an off-site wetlands mitigation bank. The remaining acres within the Installation wetland bank allows Commanders to respond to emergency range training requirements, which surface from “In Theater” conditions and scenarios, or award Congressional Garrison or training additions that must be executed by Fort Stewart within one year or less. If Commanders did not have this flexibility, Installation projects with unavoidable wetland impacts would be cancelled or held up in significant delays awaiting Congressional funding to purchase “off-Post” wetland credits.

As discussed in Chapter 6 of the DEIS, despite the physical distance between the Wilkinson - Oconee Bank (WOB) restoration area and Fort Stewart, looking at the choice from a more holistic watershed perspective shows that the two locations are rooted in an interconnected complex of wetlands and open water bodies. The WOB wetlands were determined to be an ecologically acceptable replacement for the small portion of Fort Stewart wetlands impacts due to the proposed action. Hydrologic and habitat wetland functions will remain unimpaired.

At the time the credits were purchased, there were no other readily available mitigation banks open in the primary service area with the quantity and quality of credits needed to cover the Installation’s projected needs. The Federal appropriations process did not provide the Installation with the flexibility to wait until Section 404 permits were issued to initiate the required solicitation process to purchase the credits without putting the

funding for the specific FY 2011 range projects in jeopardy. As part of the Installation's standard procurement processes, market research is conducted in accordance with the Federal Acquisition Regulation. This research requirement as it relates to contracting of off-post wetland credit purchases includes evaluating the current market and availability of primary service area mitigation credits. This process will also be implemented when seeking mitigation options for ranges beyond FY11.

For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs). For instance, the Installation is actively seeking opportunities to incorporate off-site compensatory mitigation projects into its private lands conservation initiatives in partnership with the Georgia Land Trust and will continue to do so to further provide compensatory mitigation within the primary service area and watershed. Under the Savannah District's SOP, the Wilkinson-Oconee Bank (WOB) is grandfathered as a pre-existing bank created prior to the Compensatory Mitigation Final Rule (please refer to Answer 9 below). As such, the WOB is an acceptable mitigation alternative that is in full compliance with the policy and purpose of mitigation required by the CWA, the Savannah District SOP, and the Compensatory Mitigation Final Rule. The information contained in this answer has been added to Section 6.4.1.1 of the FEIS.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. At the time of the pre-application meeting, the USACE agreed to allow the applicant to purchase credits from the secondary mitigation zone of the Wilkinson-Oconee Bank, which was the only bank with available credits. The agreement was made with the applicant in order to allow them time to procure funds necessary to provide mitigation when needed. The on-base Pond Four Mitigation Bank will be used to mitigate smaller on-post projects in the future that would likely be on a short time-line for planning, permitting and construction. The Army procurement process takes too long to allow for the purchase of mitigation credits for these small, short, time-line projects. Therefore, the USACE agrees with the applicant to save Pond Four credits for these future small projects.

a. Issue 8: EPA disagrees with the statement that applying for a CWA Section 404 permit is a minimization of wetlands impacts. The DEIS states "While the Army strives to avoid negative impacts to wetlands when it sites new range and training facilities on

Fort Stewart, if impacts to regulated wetlands cannot be avoided, the Army minimizes those impacts by applying for a Section 404 permit as required by the Clean Water Act. CWA 404 requires a permit for any dredge and fill impacts to jurisdictional waters, including wetlands. The CWA is a regulatory requirement, not a mitigation option. The FEIS should clarify this misrepresentation of CWA Section 404 permit program as a form of mitigation.

(1) Applicants Response: The information in the text and tables, located in Section 6.4.3 of the FEIS, has been edited to identify more accurately and clearly the differences between what is a required measure, such as a regulatory permit, and what is a mitigation option.

(2) USACE Position: The applicant made the suggested correction.

a. Issue 9: The DEIS discusses wetlands compensatory mitigation in context of NEPA-required mitigation when it should also discuss how the proposed mitigation meets the requirements of the Compensatory Mitigation for Losses of Aquatic Resources Final Rule. NEPA requires that to the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with environmental impact analyses and related surveys and studies required by the Fish and Wildlife Coordination Act, the National Historic Preservation Act of 1966, the Endangered Species Act of 1973, and other environmental review laws and executive orders. The Compensatory Mitigation for Losses of Aquatic Resources Final Rule is considered to be a relevant "other environmental review law" as it is one of the CWA Section 404 implementing regulations. The FEIS should discuss and apply the Final Rule in its wetlands mitigation discussion.

(1) Applicants Response: The Installation utilized the Compensatory Mitigation Rule (33 CFR Part 332) when developing its mitigation plan for the proposed FY11 MPMGR, FY11 IPBC, FY13 QTR, and the FY13 DMPTR. Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Section 6.4.1.1 of the FEIS has been revised to clearly explain that a mitigation decision has not yet been made for the FY13 QTR and the FY13 DMPTR. For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs). Similar to the process outlined in the Compensatory Mitigation Rule, the

Installation's standard procurement processes conducts market research in accordance with the Federal Acquisition Regulation. This research requirement as it relates to contracting of off-post wetland credit purchases includes evaluating the current market and availability of primary and secondary service area mitigation credits. This process will also be implemented when seeking mitigation options for ranges beyond FY11.

According to 33 CFR 332, *Compensatory Mitigation for Losses of Aquatic Resources*, mitigation bank credits may be used if the project is in the service area of a mitigation bank. Section 332.3 (b)(2) has a description of why mitigation bank credits are acceptable in compensating for wetland impacts:

“Since an approved instrument (including an approved mitigation plan and appropriate real estate and financial assurances) for a mitigation bank is required to be in place before its credits can begin to be used to compensate for authorized impacts, use of a mitigation bank can help reduce risk and uncertainty, as well as temporal loss of resource functions and services. Mitigation bank credits are not released for debiting until specific milestones associated with the mitigation bank site's protection and development are achieved, thus use of mitigation bank credits can also help reduce risk that mitigation will not be fully successful. Mitigation banks typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation. Also, development of a mitigation bank requires site identification in advance, project-specific planning, and significant investment of financial resources that is often not practicable for many in-lieu fee programs. For these reasons, the district engineer should give preference to the use of mitigation bank credits when these considerations are applicable.” Fort Stewart followed these requirements during the development of its mitigation plan.

(2) USACE Position: See USACE Position on USEPA issue 7 above.

a. Issue 10: While EPA does not expect the precise replication of all wetlands adversely impacted by the proposed action, the FEIS should explain how the proposed mitigation will adequately compensate for lost wetland functions and values such that it results in no net loss of wetland functions and values. This discussion is absent from the DEIS. Furthermore, since the U.S. Army Corp of Engineers (USACOE) cannot issue a CWA 404 permit if there is a less damaging practicable alternative, the FEIS should discuss compliance with this provision.

(1) Applicants Response: The wetlands in the Wilkinson-Oconee Bank (WOB) are “in-kind” to the wetlands on Fort Stewart. Consistent with the fact that both areas are on Georgia’s Coastal Plain, wetlands within the WOB are very similar to those slated for impact by the proposed Fort Stewart range projects. Surveys of the proposed range sites by Fort Stewart determined that dominant vegetation communities consist of plants typical of wetlands in the Coastal Plain: mixtures of pond and bald cypress (*Taxodium ascendens* and *distichum*, respectively), water oak (*Quercus nigra*), water tupelo (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), green ash (*Fraxinus pennsylvanica*), privet (*Ligustrum sinense*), American hornbeam/ironwood (*Carpinus caroliniana*), highbush blueberry (*Vaccinium corymbosum*), fetterbush lyonia (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*) among many others including varied herbs and grasses. These plants occur with varying frequency depending on the landform and hydrology of particular areas, and essentially identical communities with similar distribution are found in the Wilkinson-Oconee’s Mitigation Bank. Animal communities also supported by these areas are: wading birds, such as the Great Egret (*Casmerodius albus*), the Snowy Egret (*Egretta thula*), and the Great Blue Heron (*Ardea Herodias*); amphibians, such as the Bullfrog (*Rana catesbeiana*) and Wood Frog (*Rana sylvatica*); and mammals, such as the Whitetail Deer (*Odocoileus virginiana*) were all observed during the surveys of the range project sites, and have been similarly reported in the Wilkinson-Oconee area. The American alligator (*Alligator mississippiensis*) is common throughout Fort Stewart and has also been observed at Wilkinson-Oconee. The locally endangered Wood Stork *Mycteria Americana* can also be found at both locations (though they are not expected to be impacted by the proposed projects).

Soil types were also consistent between the two areas. The Ellabelle, Bibb, Pelham, and Leefield types predominated in the proposed project areas. Analyses of the Natural Resources Conservation Service profiles show these to be comparable to the Chewacla, Chastain and Congaree soils which cover the Wilkinson-Oconee area. All are characterized by loamy surface layers and clayey or loamy subsoils, and all soils are on the National Hydric Soils list.

Although the area of the Coastal Plain in which the Wilkinson-Oconee area is situated features more relief than that of Fort Stewart, the specific area of the restoration situated as it is in the Oconee River floodplain, is flatter than the surrounding general topography,

resulting in a similar hydrologic profile to Fort Stewart. The bottomland hardwood wetland systems found at both locations share the typical functions of holding temporary storage surface water, maintenance of characteristic subsurface hydrology, removal and sequestration of elements, retention of particulates, export of organic carbon, maintenance of characteristic plant community, and habitat for wildlife. Based on this comparison, despite the distance between the two areas, wetlands on Fort Stewart and at the Wilkinson-Oconee restoration area are very similar and, therefore, their use for mitigation fully supports the requirement for “no net loss”. Text reflecting this information was incorporated into Section 6.4.1.1 of the FEIS.

(2) USACE Position: As discussed above, the mitigation proposed by the applicant would comply with the new mitigation rule. The USACE is preparing an analysis of the proposed project pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for this proposed project. This analysis would also confirm that the final proposed site development plan for this range, as well as the other three ranges being reviewed, was the least environmentally damaging practicable alternative that would meet the basic project purpose.

a. Issue 11: The DEIS states that the USACOE documents approximately 1,467,774 acres of wetlands impacted within 20 Georgia counties and by deducting 1,982.87 acres of wetlands impacts since 1990 there are at least 1,465,791.13 acres of wetlands remaining. According to the DEIS, this amounts to a loss of 0.14% of wetlands since 1990 - an insignificant amount." It is unclear if the USACOE document referenced in the DEIS is referring to the 1,467,774 acres of wetlands as being impacted in the 20 Georgia counties or existing (un-impacted) wetlands in these counties. This paragraph needs to be clarified in the FEIS.

(1) Applicants Response: There are 1,467,774 existing acres of existing wetlands within the 20 Georgia counties referenced, of which 1,465,791.13 acres of wetlands are un-impacted. This is how the Installation calculated a loss of 0.14% of wetlands since 1990 and the determination of “insignificant” derived. Text clarifying this information was incorporated into Section 5.3.3.2 of the FEIS.

(2) USACE Position: Fort Stewart corrected the FEIS, and clarified the information

that EPA questioned.

3. US Fish and Wildlife Service (USFWS): No comments received. The US Army, Fort Stewart is the lead federal agency for this proposed action and has completed consultation with the USFWS. The Final Biological Opinion can be found in Appendix B of the FEIS.
4. Georgia State Clearinghouse: By memorandum dated June 8, 2010, the Georgia State Clearinghouse stated that the request has been found to be consistent with state goals, policies, plans, objectives, and programs, with which the state is concerned.
5. Georgia Department of Natural Resources, Coastal Resource Division (Georgia CRD): No comments were received from Georgia CRD. However, this office must certify that the project is consistent with the Georgia Coastal Management Program prior to the USACE completing its review of the subject application.
6. Georgia Department of Natural Resources, Environmental Protection Division (Georgia EPD): No comments were received from Georgia EPD. Fort Stewart is in consultation with the Georgia Environmental Protection Division regarding a water quality certification pursuant to Section 401 of the Clean Water Act. The USACE would include a copy of the 401 water quality certification with any permit issued. In addition, the special condition of any permit issued would require the permittee to adhere to the conditions of the 401 water quality certification.
7. Southern Environmental Law Center (SELC): By letter dated May 21, 2010, the SELC provided the following comments on behalf of the Ogeechee Riverkeeper, Inc. (ORK):
 - a. Issue 1: The applicant's alternatives analysis in the DEIS includes alternative COA 3 which is a "heavily utilized" existing multipurpose range complex (MPRC) (*Fort Stewart note: the range proposed for construction is actually a Digital Multi-Purpose Training Range, or DMPTR*). DEIS, Appendix D at 10. This, of course, begs the question as to why the Applicant is including as an alternative a site that could never be used even if it determined that the site would have fewer environmental impacts. Alternative COA 3 is not a practicable alternative at all.

(1) Applicants Response: Transforming the existing MPRC was an option legitimately considered as a practical alternative but rejected due to current and expected

military operations and training demands. Transforming the existing MPRC and other operational ranges will remain a consideration on future range projects as the types of military training and weapon systems evolve over time and possibly render older ranges obsolete. An example of this is the COA 1 for the DMPTR, which involves the transformation of another existing range, Red Cloud Foxtrot. In siting the DPMTR over top of an existing range, we are attempting to minimize and avoid the wetland impacts that would be associated with constructing the DPMTR elsewhere on Fort Stewart.

(2) USACE Position: Given the amount of development on the base as a whole, the re-use of an existing range should be considered as a potential alternative. The elimination of alternatives as not being practicable is a standard part of the Section 404(b)(1) Guidelines.

b. Issue 2: The other alternative which the Applicant examined yielded wetlands impacts of 240 acres. It is difficult to accept that there were no other practicable alternatives at Fort Stewart for this proposed range. Two-hundred forty acres is more than the combined wetlands impacts of all four of the proposed ranges.

(1) Applicants Response: Based on the Installation's location in a relatively flat coastal plain and the location of pre-existing military training ranges and facilities on high ground, impacts to 240 acres of wetlands to build a new 995 acre range is not beyond the realm of reasonable consideration as a viable alternative. The fact that wetland impacts in the preferred alternative are less than five percent of the overall range size demonstrates the Installation's efforts to avoid and minimize wetland impacts associated with the siting of new military ranges and training facilities. Army Installations, including Fort Stewart, must maintain their training lands to fully sustain mission requirements for national security. The way the Army does this is through its master planning process. It is important to note that the Installation's planning efforts to minimize wetland impacts begins with attempts to select a site with the least amount of wetlands. At this point in the planning process, the range design is limited to placement on site of a footprint of the proposed range. This footprint shows the maximum number of wetland impacts and that is why we state "up to" so many acres; however, once a final site is selected, further attempts are made to avoid and minimize negative impacts to wetlands inside the range footprint through the range design process.

The final range design cannot be prepared prior to a site being selected. Also, despite

Fort Stewart's large size, much of its lands are already committed to other training, recreational, and environmental activities. Maneuver and dismounted maneuver training areas occupy large portions of the Installation, where the integration of large firing ranges is not suitable. The west side of the Installation is devoted to maneuver training and, in its entirety, is necessary to meet Brigade mission training requirements. Maneuver training is necessary in upland areas to reduce wetland impacts resulting from heavy wheeled and tracked military vehicles, as well as to avoid vehicles from getting stuck in wet areas. The southeast side of the Installation is devoted to dismounted maneuver training (i.e. training on foot) and also contains a wooded recreational area for campers. More than 100,000 acres are devoted to the restoration and management of environmentally sensitive areas, such as habitat for threatened and endangered species (including the red-cockaded woodpecker (RCW) and gopher tortoise) and wetlands.

During the planning process for the FY13 DMPTR, which Fort Stewart initiated in 2006, the Installation developed a total of eight siting alternatives. This process allowed both operational and environmental aspects, including impacts to wetlands, to be thoroughly analyzed in a collective manner by members of the Installation's Environmental Division, Range Control Division, and Master Planning Division. As the analysis progressed, these siting alternatives were ranked using screening criteria, as discussed in Chapter 2, *Description of the Proposed Action and Alternatives*, of the FEIS. Minimization of environmental impacts, including wetlands, was a factor in which alternatives were considered viable and which were not. One DMPTR discounted alternative, not discussed in the FEIS, contained 673 acres of wetlands impact. Another site, also not considered any further, contained 313 acres of wetland impact and would have resulted in the elimination of 683 acres of RCW habitat (compared to an RCW habitat loss of 22.4 acres and 31 acres as a result of Alternatives B and C, respectively). Even though these eliminated sites were operationally viable, they were removed from consideration after environmental impacts were determined to be significant.

(2) USACE Position: There are variety of safety, noise, and other constraints that limit where a live fire range could be located on Fort Stewart. The Army is the "expert" for siting ranges and conducted an intensive alternatives analysis for locating this, and the other three range projects; to avoid wetland impacts, while meeting other site constraints. The Section 404(b)(1) analysis to be prepared for this action will fully address this issue.

c. Issue 3: Multi Purpose Machine Gun Range (MPMGR). As an alternative for

this range, the Applicant proposed course of action (COA) 5 which would have yielded wetlands impacts of less than 9 acres had it been chosen as the preferred alternative. However, the Applicant eliminated this alternative because it emerged as the preferred alternative for DMPTR. As such, COA 5 should not be discussed as a viable alternative for the MPMGR.

(1) Applicants Response: As a large military training and deployment complex, Fort Stewart must examine and analyze the cumulative effects of all its proposed ranges within its training platform as constrained by the Installation borders, adjacent and associated training facilities, and surface danger zones relative to one another. This analysis is in addition to examining other resources, such as wetlands, to optimize training while minimizing the overall impact to our environment. The decisions made on the siting of each range and what are practical alternatives are inherently intertwined and interdependent. This may not have been reflected well in Section 404 permit applications, but is more fully explained in Section 6.4.1.1 of the FEIS. The possibility remains that the MPMGR could be selected to occupy that site currently under consideration for the DMPTR if the DMPTR is ultimately selected to occupy another site.

Also, many other impacts, in addition to wetland impacts, are examined and analyzed in the siting of new ranges and training facilities, including other environmental factors (such as threatened and endangered species) and non-environmental factors (such as the impact the site has on the ability to conduct timely and realistic military training based on current threats to our nation's armed forces when engaged in combat or peace keeping operations overseas). Both the MPMGR and DMPTR were approved for funding, and as has been noted, COA 2 for the DMPTR would have carried a level of wetland impact even greater than the current impacts from both the MPMGR and the DMPTR. Given the many constraints (see Appendix D for siting criteria) at play in siting both ranges, the preferred COAs for the two ranges were seen as a necessary compromise for ensuring all needed ranges are built and military training requirements met.

(2) USACE Position: See discussion for SELC issue 2 above.

d. Issue 4: Notwithstanding the above, the Applicant needs to more adequately explain why it did not select COA 5 as the preferred alternative for MPMGR considering it would have reduced the wetlands impacts from 116.7 acres down to 9 acres.

(1) Applicants Response: Unfortunately, it would not be possible to ignore the fact that the site was already selected as the preferred site for the DMPTR, as suggested. Two independently proposed ranges cannot have the same preferred site. The Installation agrees that nine acres of impact for a 250-acre range is far more desirable than 116.7 acres of wetland impacts (which we now have down to 103.3 acres); however, wetlands impacts for this specific range were only one factor examined and analyzed in selecting this site as the preferred alternative. Selection of this site as the preferred alternative helps the Installation's ability to avoid and minimize the overall and cumulative impacts to all wetlands associated with planned or reasonably anticipated range construction, as reflected in Sections 4.3.2, 5.3.3.2, and 6.4.1 of the FEIS.

(2) USACE Position: See discussion for SELC issue 2 above.

e. Issue 5: Qualification Training Range (QTR). For this proposed range, the Applicant discusses but then rules out COA 3, which would have less wetlands impacts than the Preferred Alternative B. The Applicant rules out this alternative site because it is the proposed location for a future Modified Record Fire (MRF) range, which is not before the Corps at this time. Again, given the significant size of Fort Stewart, alternatives for one range should not be eliminated for future potential ranges, or, such a site should never be discussed as an alternative. The Applicant is required under the Section 404(b)(1) guidelines to indentify "practicable alternatives," not alternatives that could never be chosen regardless of how favorable they might be from an environmental standpoint.

(1) Applicants Response: Again, as a large military training and deployment complex, Fort Stewart must examine and analyze the cumulative effects of all its proposed ranges within its training platform as constrained by the Installation borders, adjacent and associated training facilities, and surface danger zones relative to one another. This analysis is in addition to examining other resources, such as wetlands, to optimize training while minimizing the overall impact to our environment. The decisions made on the siting of each range and what are practical alternatives are inherently intertwined and interdependent. This may not have been reflected well in Section 404 permit applications; but is more fully explained in the FEIS. One reason the COA 3 was deemed unsuitable was the fact the site is currently an operational range that is projected for reuse or transformation as a future MRF range. While Fort Stewart has a large land

mass, much of its land mass is not environmentally or operationally suitable for range construction or for a number of considerations. Although significant, wetland impacts are only one of several significant factors considered when examining the suitability for siting of a range. The remaining lands that are suitable for future range construction are limited because the best locations are currently being used to capacity as military ranges or training areas. The Installation contains many sensitive resources, such as wetlands and protected species habitat, which limit the locations suitable for constructing new military training ranges that are capable of maximizing military training while minimizing environmental impacts. Because of the operational impacts examined and analyzed when siting ranges, and because the Installation was able to minimize impacts and mitigate those that did occur, the decision was made to retain the COA 3 site for a future project. The alternative was practicable but was not chosen in this instance.

(2) USACE Position: See discussion for SELC issue 2 above.

f. Issue 6: Inadequate Mitigation. Ogeechee Riverkeeper (ORK) is concerned with several flaws in the Application's proposed mitigation measures. Considering the Project's significant destruction and alteration of wetlands, it is imperative that the value and functions of wetlands on Fort Stewart are mitigated. ORK shares the concerns expressed by the Environmental Protection Agency (EPA) in its comments on the Draft Environmental Impact Statement dated May 14, 2010. First, the Applicant's usage of the Savannah District's Standard Operating Procedure (SOP) for calculation of mitigation credits is inconsistent with the district's position that the SOP should not be applied to projects with large wetlands impacts. Given the Project's substantial wetlands impact of 190 acres, we urge the Corps to apply the SOP, but do so with a scaling factor to address the cumulative impact of the Project, an approach that is followed by the Charleston District. The Applicant's use of the SOP without a scaling factor will not successfully and adequately replace the lost functions and values of wetlands impacted by the Project.

(1) Applicants Response: The implementation of the actions proposed in the preferred alternative (Alternative B Sitings) has the potential to negatively impact up to 0.2% of the Installation's nearly 91,000 acres of wetlands. More importantly, of the up to 0.2% of the Installation's wetlands being impacted, most of those impacts are not the result of adding fill to the wetlands, and as stated earlier, the Installation anticipates wetland impacts will be much less than projected through further avoidance and minimization incorporated during the design phases of each project after the site is

selected. It is important to note, that despite the large amount of military training activity that occurs on Fort Stewart, because of the Installation's proactive efforts to avoid, enhance and mitigate wetlands, its wetlands remain of a high quality, retaining and transmitting large amounts of fresh water and providing habitat for countless local species.

While a scaling factor may be appropriate to use in many large scale projects where a great deal of fill is being introduced into the wetland system and where the projects require large amounts of impermeable surfaces, neither of these considerations constitute significant components of any of the projects under consideration in the FEIS. Of this filled acreage only a small amount will include the introduction of impermeable surfaces. The only impermeable surfaces will consist of the range operations area and cover only 2% of each project footprint. As noted above, while maximum projected "up to" amounts have been provided, most of those impacts are not the result of adding fill to the wetlands, but rather vegetative maintenance for line-of-sight and grubbing/grading for target placement. This information is located in Section 4.3.2.2.

As a result, it is the Installation's position that use of any scaling factor is not necessary to compensate for the cumulative impacts associated with these types of projects and applying a scaling factor, as called for in the Charleston District's SOP, to these types of projects would appear to be arbitrary and capricious as it would not appear to be based on any sound engineering or hydrologic rational but would appear to be more punitive than compensatory in nature.

Moreover, the Installation always takes into account secondary wetland impacts. In reference to the MPMGR, which is the project that contains the majority of the 190 acres (now 179.03 acres) of wetlands to be potentially impacted, the Installation has evaluated potential secondary / cumulative impacts. In our planning process, as noted above, the Installation took a "worst case scenario" approach when determining how to compensate for the quantity of wetlands loss. The Installation is planning to off-set secondary / cumulative wetland effects from this range and has obtained an additional 287 mitigation credits from the Wilkinson-Oconee Bank. The Installation did account for the lost functions and values impacted by the project with respect to direct and indirect impacts.

As noted in Sections 3.4.5 and 4.3.2 of the FEIS, the Savannah District is a cooperating agency to this EIS, and was consulted with regard to the factors noted above.

Additionally, Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Having reviewed these documents and the associated 404(b)(1), the Savannah District did not suggest a need to utilize a scaling factor.

(2) USACE Position: The USACE does not require the usage of the Savannah District's Standard Operating Procedure (SOP) for calculation of mitigation credits for projects of this size. The USACE does not use any scaling factor in association with the USACE SOP. The present total proposed wetland impact for the four proposed ranges is 179.03 acres. As discussed by the applicant above, not all of these proposed impacts are for fill, but a certain percentage would involve mechanized land clearing impacts. Clearing wetlands of vegetation and maintaining them in scrub/shrub vegetation results in a change in function, but not a total loss in function. The mitigation credits proposed by Fort Stewart are assuming a total loss in function. The proposed mitigation plan is to purchase 1,391 credits to compensate for a total of 179 acres of wetland impact for all four ranges. This is a credit to impact ratio of 7.8:1. On average, three credits are generated for each acre of wetland restoration at the Wilkinson/Oconee Mitigation Bank, where credits will be purchased for the FY11 ranges. Therefore, the effective mitigation ratio for the FY11 Multipurpose Machine Gun Range and FY11 Infantry Platoon Battle Course projects would be approximately 2.6:1 of wetland restoration. The Applicant has not ruled out other acceptable compensatory mitigation alternatives to mitigate wetlands impact (provided through mitigation banks or in-lieu fee programs) for the FY13 Digital Multipurpose Training Range and the FY13 Qualification Training Range. Therefore, it is the position of the USACE that the mitigation proposed for this QTR project would meet the requirements of the new mitigation rule.

g. Issue 7: Second, the Applicant's choice of the Wilkinson-Oconee Mitigation Bank conflicts with the policy and purpose of mitigation required by the CWA. Under the Corp's regulation, the Applicant's "compensatory mitigation should be located within the same watershed as the impact site" 33 C.F.R. § 332.3. The purpose of this rule is to preserve and maintain water resources within a watershed, and ensure that wetlands lost are compensated by wetlands with similar characteristics, values, and functions. The Application, however, proposes mitigation outside of Fort Stewart and in another

watershed at the Wilkinson-Oconee Mitigation Bank. This choice not only conflicts with the Corps' policy but also ignores the available 160 credits contained in Fort Stewart's on-site mitigation bank. ORK believes that the Corps should require the Applicant's use of the on-site mitigation.

(1) Applicants Response: Mitigation credits generated from the on-Post compensatory mitigation bank are not being used because there are insufficient credits available to satisfy requirements associated with the projects and the Installation needs to retain the few credits remaining for potential use to compensate for last minute and unanticipated Congressional add-on projects that occur on the Installation on a not-infrequent basis. Regarding use of mitigation banks, the Compensatory Mitigation for Losses of Aquatic Resources Final Rule states, "In many cases, the environmentally preferable compensatory mitigation may be provided through mitigation banks or in-lieu fee programs because they usually involve consolidating compensatory mitigation projects where ecologically appropriate, consolidating resources, providing financial planning and scientific expertise (which often is not practical for permittee-responsible compensatory mitigation projects), reducing temporal losses of functions, and reducing uncertainty over project success." The rule then lists types of compensatory mitigation measures in order of preference. The rule states that "[in] general, the required compensatory mitigation should be located within the same watershed as the impact site." But mitigation bank credits may be used if the project is in the service area of the bank. Section 332.3 (b)(2) has a description of why mitigation bank credits are given in the regulation:

"Since an approved instrument (including an approved mitigation plan and appropriate real estate and financial assurances) for a mitigation bank is required to be in place before its credits can begin to be used to compensate for authorized impacts, use of a mitigation bank can help reduce risk and uncertainty, as well as temporal loss of resource functions and services. Mitigation bank credits are not released for debiting until specific milestones associated with the mitigation bank site's protection and development are achieved, thus use of mitigation bank credits can also help reduce risk that mitigation will not be fully successful. Mitigation banks typically involve larger, more ecologically valuable parcels, and more rigorous scientific and technical analysis, planning and implementation than permittee-responsible mitigation. Also, development of a mitigation bank requires site identification in advance, project-specific planning, and significant investment of financial resources that is often not practicable for many in-lieu fee

programs. For these reasons, the district engineer should give preference to the use of mitigation bank credits when these considerations are applicable.” Fort Stewart followed these requirements during the development of its mitigation plan.

Under the Savannah District’s SOP, the Wilkinson-Oconee Bank is “grandfathered” as a pre-existing bank created prior to the Compensatory Mitigation Final Rule. As such, the Wilkinson-Oconee Bank is an acceptable mitigation alternative that is in full compliance with the policy and purpose of mitigation required by the CWA, the Savannah District SOP, and the Compensatory Mitigation Final Rule. Fort Stewart’s use of the Wilkinson-Oconee Bank as mitigation for the proposed FY11 range projects was fully coordinated with the Savannah District, which was a cooperating agency on the EIS.

The wetlands in the Wilkinson-Oconee Bank are “in-kind” to the wetlands on Fort Stewart. Consistent with the fact that both areas are on Georgia’s Coastal Plain, wetlands within the Wilkinson-Oconee are essentially identical to those slated for impact by the proposed Fort Stewart range projects. Surveys of the proposed range sites by Fort Stewart determined that dominant vegetation communities consist of plants typical of wetlands in the Coastal Plain: mixtures of pond pine (*Pinus serotina*), pond cypress (*Taxodium ascendens*), water oak (*Quercus nigra*), water tupelo (*Nyssa aquatica*), sweetgum (*Liquidambar styraciflua*), loblolly bay (*Gordonia lasianthus*), green ash (*Fraxinus pennsylvanica*), American hornbeam (*Carpinus caroliniana*), Highbush blueberry (*Vaccinium corymbosum*), fetterbush lyonia (*Lyonia lucida*), and sweetbay (*Magnolia virginiana*) among many others including varied herbs and grasses. These plants occur with varying frequency depending on the landform and hydrology of particular areas, and essentially identical communities with similar distribution are found in the Wilkinson-Oconee’s Mitigation Bank. Animal communities also supported by these areas are: wading birds, such as the Great Egret (*Casmerodius albus*), the Snowy Egret (*Egretta thula*), and the Great Blue Heron (*Ardea Herodias*); amphibians, such as the Bullfrog (*Rana catesbeiana*) and Wood Frog (*Rana sylvatica*); and mammals, such as the Whitetail Deer (*Odocoileus virginiana*) were all observed during the surveys of the range project sites, and have been similarly reported in the Wilkinson-Oconee area.

Soil types were also consistent between the two areas. Hydric sand-loam mixtures of the Ellabelle, Bibb, Pelham, and Leefield types predominated in the proposed project areas. Analyses of Natural Resources Conservation Service profiles show these to be comparable to the Chastain and Congaree soils which cover the Wilkinson-Oconee area.

All soils are on the National Hydric Soils list. Although the area of the Coastal Plain in which the Wilkinson-Oconee area is situated features more relief than that of Fort Stewart, the specific area of the restoration is flatter than the surrounding general topography, resulting in a similar hydrologic profile to Fort Stewart. The bottomland hardwood wetland systems found at both locations share the typical functions of holding temporary storage surface water, maintenance of characteristic subsurface hydrology, removal and sequestration of elements, retention of particulates, export of organic carbon, maintenance of characteristic plant community, and habitat for wildlife. Based on this comparison, despite the distance between the two areas, wetlands on Fort Stewart and at the Wilkinson-Oconee restoration area are very similar and, therefore, their use for mitigation fully supports the requirement for “no net loss”. Text reflecting this information was incorporated into Section 6.4.1.1 of the FEIS.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. At the time of the pre-application meeting, the USACE agreed to allow the applicant to purchase credits from the secondary mitigation zone of the Wilkinson-Oconee Bank, which was the only bank with available credits. The agreement was made with the applicant in order to allow them time to procure funds necessary to provide mitigation when needed. The on-base Pond Four Mitigation Bank will be used to mitigate smaller on-post projects in the future that would likely be on a short time line for planning, permitting and construction. The Army procurement process takes too long to allow for the purchase of mitigation credits for these small, short-time-line projects. Therefore, the USACE agrees with the applicant to save Pond Four credits for these future small projects.

h. Issue 8: Before seeking compensatory mitigation in a different watershed, the Applicant should explore the use of existing and new mitigation banks in Ogeechee River Watershed. According to the DEIS's evaluation of mitigation banks in 2009, the Ogeechee River/Margin Bay and Black Creek Banks may now have available credits. DEIS at 6-8. Also, given the significant amount of wetlands within the boundaries of Fort Stewart as well as Fort Stewart's experience in the creation of mitigation banks, the Corps should require the Applicant to take a hard look at a potential onsite mitigation bank that would ensure the compensation of the wetlands' lost values and functions.

(1) Applicants Response: Existing and new mitigation banks within this watershed

were not available at the time Fort Stewart was required to begin planning for the required wetlands credit acquisition for its FY 2011 range projects with known and/or anticipated wetlands impacts (see answer to Issue #9, below, for additional details). On-site wetlands mitigation was not a viable option because, as discussed in Section 5.3.3.2 of the FEIS, although Fort Stewart has an existing mitigation bank and an on-site wetlands restoration project, it is running out of new places where additional on-site mitigation can be conducted. If credits are available in the primary service area in the future, however, then Fort Stewart will work to try and obtain these credits, in accordance with the Compensatory Mitigation Rule For Losses of Aquatic Resources (33 CFR 332) and the Federal Acquisition Regulation. For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs).

After exploring and selecting reasonable site alternatives for the proposed FY11-FY14 range projects, the Installation determined that the last remaining on-site mitigation bank (Pond 4) could not support the wetland mitigation requirements for these facilities and sustain itself for mitigation of proposed and future garrison construction, and other unplanned projects that arise out of mission changes. The remaining acres within the Installation Wetland Bank allows Command to respond to emergency range training requirements which surface from “In Theater” conditions and scenarios, or award Congressional garrison or training additions that must be executed by Fort Stewart within one year or less. If Commanders did not have this flexibility, Installation projects with unavoidable wetland impacts would be cancelled or held up in significant delays awaiting Congressional funding to purchase “off-Post” wetland credits.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. The credits purchased were in the secondary service area of the Wilkinson-Oconee Bank which was the only bank with available credits. The on base Pond Four Mitigation Bank would not have enough acreage needed for these projects. Fort Stewart has conducted an in-depth review of potential wetland mitigation sites on the base and is in the process of developing additional areas connected to the existing Pond Four Mitigation Bank; however, no additional mitigation is available at this time.

h. Issue 9: The Applicant's proposed mitigation plan is based on mitigation credits

purchased a year ago from the Wilkinson-Oconee Bank which was the "only bank that provided an offer to the solicitation...." DEIS at 6-8. It is our understanding that Section 404 permit applicants are discouraged from procuring mitigation credits in advance of receiving a permit so that the Applicant is not limited in its mitigation options, such as the use of new mitigation banks. This reasoning is at play here. It has been a year since the Applicant solicited a mitigation contract and, according to the Applicant's DEIS mitigation bank table 6.1, at least two Ogeechee River Watershed banks may now have credits available.

(1) Applicants Response: The timeline associated with Congressional Budget approval and Federal Appropriation process for military construction requires advance planning to enable construction to be implemented in the timeframe appropriation was made. The timeline for planning and construction of these projects is quite early (two years out or more) and did not allow for a later solicitation. To secure the funds necessary to build a proposed range, Headquarters-Department of the Army (HQDA) requires the Installation to budget for wetland impacts that will be unavoidable at least two years prior to the proposed project's anticipated contract award date. If an Installation fails to provide this to HQDA within the given timeline, the project is not funded. In the past, Fort Stewart has been able to mitigate using its on-Post wetland mitigation bank; however, as mentioned above, the on-Post bank no longer has an adequate amount of credits available to support these ranges while also meeting the requirements of the Installation's "In-Theater" mission requirements. The Installation utilized the Compensatory Mitigation Rule (33 CFR Part 332) when developing its mitigation plan for the proposed FY11 MPMGR, FY11 IPBC, FY13 QTR, and the FY13 DMPTR. Fort Stewart participated in pre-application meetings with the Corps to discuss potential mitigation requirements and information needs. Section 6.4.1.1 of the FEIS has been revised to clearly explain that a mitigation decision has not yet been made for the FY13 QTR and the FY13 DMPTR.

(2) USACE Position: The USACE met with the applicant in preapplication during which the use of existing banks was discussed and the USACE determined that the Wilkinson-Oconee Bank was an acceptable mitigation alternative. The USACE recognized the time restraints associated with the proposed projects and the military's appropriation and allocation of funds needed for potential wetland impacts and agreed to the use of the Wilkinson-Oconee Bank for these projects. Any future projects mitigation requirements would fall within the guidelines and mitigation availability in place at that

time.

i. Issue 10: Furthermore, we share EPA's concerns that the Applicant is not sufficiently mitigating impacts on streams. It is our understanding that Fort Stewart's projects in the past have significantly affected streams that were not mitigated. ORK urges the Corps to ensure that stream impacts are assessed separately from wetlands impacts and that the loss of streams is compensated appropriately. Overall, ORK is concerned that the Applicant's proposed mitigation plan simply does not include adequate compensation for Fort Stewart's wetlands and streams that will be significantly impacted by the Project.

(1) Applicants Response: No streams will be lost as a result of the proposed project. The footprints of the MPMGR and IPBC on the 7.5-minute USGS topographic quads show "blue line" streams in the areas; however, a site visit by Fort Stewart and the Georgia Environmental Protection Division (GA EPD) on January 20, 2010, found no streams. The Savannah District also did not identify any streams within the range footprints. This information was added to Section 4.3.1, of the FEIS.

Over the years, Fort Stewart has worked diligently to mitigate impacts – direct and indirect, as well as cumulative – to the Installation's streams, as well as wetlands. During the development of the Installation's wetland bank, for example, thousands of feet of Canoochee Creek and Strum Bay were restored without being credited to the Installation's mitigation bank. The Installation takes pride in that fact and welcomes working with ORK and other local environmental stakeholders on future projects.

(2) USACE Position: The USACE has completed an expanded preliminary jurisdictional determination for the project site. This determination verified there are no jurisdictional streams located on the project site.

j. Issue 11: Failure to Minimize Impacts to Marine Resources. Section 404(b)(1) guidelines prohibit issuance of a permit where "[t]he proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem." 40 C.F.R. § 230.12(a)(3)(iii) (emphasis added). None of the information that we have reviewed demonstrates that the Applicant has tried to adequately minimize the impacts of the Project. The Applicant repeatedly contends that because it is utilizing existing range footprints the Project will "avoid and minimize impacts to more pristine

and un-fragmented wetlands systems" on Fort Stewart. See e.g. Public Notice at 3. While ORK appreciates the Applicant's utilization of existing ranges for the Project, this reuse of range areas does not ensure minimization of harm to aquatic ecosystems or satisfy the regulation's mandate that the Project includes "all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem." 40 C.F.R. § 230. 12(a)(3)(iii).

(1) Applicants Response: In addition to avoiding and minimizing impacts to more pristine and un-fragmented wetlands systems, as noted in the comment, Fort Stewart consistently seeks to minimize and avoid wetland impacts at each stage of the design process. It is also important to note that the proposed ranges would be constructed on existing ranges that are operational and already cleared of vegetation. First, much of the avoidance and minimization process takes place before actual site selection. (See response to Issue #2.) Training ranges of this kind have fairly specific requirements and it is not always possible to build them without impacting every wetland in the footprint; however, site designers may alter certain aspects in response to environmental concerns during various stages of the design process (10%, 35%, 60%, 90%, and 100% stages of design completion). This is easiest if they can do so while still meeting the operational and training requirements of the range. For example, the currently on-going design process reduced the wetland impacts from the IPBC to a third of what they were at the time of writing the DEIS. Impacts from the MPMGR were also slightly reduced during that time and several proposed range projects were sited without wetland impacts of any kind. It is hoped that impacts from the QTR and DMPTR may be reduced, but as they are not yet in the design process, this cannot be precisely determined.

To ensure compliance with the Georgia (GA) Erosion and Sedimentation Control Act (ESCA) and the CWA on existing and future training ranges, Fort Stewart mandates full utilization of Timber Harvest best management practices (BMPs), National Pollutant Discharge Elimination System (NPDES) permit requirements, site-specific Erosion and Sedimentation Pollution Control Plans (ESPCPs), and pre- and post-construction BMPs to reduce the potential adverse impacts to water bodies, such as streams. The projects discussed in the JPN and FEIS have not undergone complete design. During this process, however, Fort Stewart stormwater specialists review ESPCPs for compliance with the GA ESCA and the CWA. The Installation also utilizes the Natural Resources Conservation Service (NRCS) to provide technical expertise during preparation of ESPCPs prior to Fort Stewart providing construction approval. Fort Stewart stormwater compliance assessors and NRCS consistently inspect and monitor on-going construction

actions. They will also do this during the construction of these proposed projects to ensure adherence to associated ESPCPs. Fort Stewart inspectors also routinely inspect tank trails, range access roads, range course roads, and dirt roads/trails to see if any damage is occurring (such as hardened tank trails or water crossings need repairs, to prevent sedimentation of adjacent streams).

(2) USACE Position: The USACE is preparing an analysis of the proposed project pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for this proposed project. This analysis will document that all requirements of the Guidelines have been met.

k. Issue 12: The Applicant-specifically, in Appendix D to the DEIS, fails to adequately describe measures intended to minimize impacts besides asserting that the ranges will be placed in existing disturbed areas. The proposed plans for MPMGR and QTR consist of wetlands impacts of 116.7 acres and 26.7 acres, respectively. Contrary to the Applicant's assertion that these proposed impacts are not extensive, the two ranges impact all wetlands within MPMGR and QTR areas. Thus, when all wetlands in each project area are destroyed or altered, the Applicant has failed to demonstrate that it has adequately minimized impacts to the aquatic ecosystem. The Applicant's failure to offer measures to minimize impacts to wetlands and streams violates the Section 404(b)(1) guidelines and the CWA. ORK urges the Corps to require the Applicant to set forth specific measures intended to minimize wetlands impacts on each of the four proposed ranges.

(1) Applicants Response: As noted in previous response, Fort Stewart attempts to avoid and minimize wetland impacts throughout the siting and design process. The most substantial avoidance and minimization occurs during the siting process as part of the site alternatives to carry forward for detailed analysis. Please note that, at the initial siting phase, the amount of wetland acres impacted attributed to each range is simply a total of all wetland acres that *would be located within the range footprint that could potentially be impacted*, and it is likely not *all of the wetlands within the footprint will be impacted by the project because avoiding and minimizing negative impacts wetland are carried forward as a consideration into the actual range design process after the site is selected*. Efforts are made to reduce these impacts as the design progresses and, it is anticipated

that, as design proceeds, additional wetlands avoidance and minimization of effect will be achieved. Again as an example, the currently on-going design process for the IPBC range has reduced the wetland impacts to a third of what they were at the time of writing the DEIS. Design efforts for the MPMGR have produced similar results, as well. Furthermore, little-to-no impervious surfaces will exist on these ranges, so runoff will not increase appreciably. The primary areas of “hardened surfaces” will consist of concrete turning pads, hardened stream crossings, etc., but not hardened roads and/or completely paved areas. The range surfaces will still be permeable, and, after construction, will acquire a covering of grasses and light herbaceous vegetation. Furthermore, wildlife may still traverse the ranges and graze during periods (sometimes weeks or more) the ranges are not in use.

In regard to the general issues of siting ranges and orienting them to avoid wetlands, further mention must be made of the Surface Danger Zone, or SDZ. Every range has an SDZ, an area within which people, property, and wildlife are in danger of being struck by projectiles during live fire exercises. Because of this danger, safety of Fort Stewart personnel, the public, and wildlife is a primary consideration in range siting. As previously noted, an SDZ may cover hundreds or even thousands of acres, and ranges must be sited to ensure areas of habitation, daily operations, traffic, and environmental sensitivity do not fall within them. A further limitation to siting is the fact that Fort Stewart is essentially cut into quarters by two major Georgia highways conveying regular civilian traffic. Injury or loss of human life during live fire exercises due to an improperly placed SDZ would be unacceptable to any party. Therefore, all organizations involved in siting ranges are forced to site ranges and their attendant SDZs very carefully. Efforts are made to ensure SDZs overlap. This maximizes land use and minimizes areas impacted by live fire; in part this is itself an environmental consideration as vegetation and animal populations may suffer losses from carelessly directed live fire.

(2) USACE Position: The USACE is preparing an analysis of the proposed project pursuant to the Section 404(b)(1) Guidelines of the Clean Water Act. This analysis will not be completed prior to finalization of the EIS. However, this analysis will be completed prior to the USACE signing a Record of Decision for the EIS; which would be the final permit decision for this proposed project. This analysis will document that all requirements of the Guidelines have been met.

1. Issue 13: Deposition of Munitions. Finally, to our knowledge the Applicant fails

to discuss the impact to water quality of any munitions landing in any waters of the United States on the proposed ranges. Under the Section 404(b)(1) guidelines, the Corps has an independent duty to evaluate water quality impacts before it issues a permit. The deposition of the munitions in such waters will be an indirect impact of the proposed Project.

(1) Applicants Response: The Military Munitions Rule states that used or fired munitions are considered a solid waste only when they are removed from their original landing spot (www.epa.gov/epaoswer/hazwaste/military/index.htm). Therefore, since the proposed ranges will utilize existing impact areas and the munitions will be used for their intended purposes and will be left where they land, the munitions are not considered solid waste. The best practices to minimize the impact of lead on the environment are stormwater and erosion controls, vegetation management, soil amendments, bullet traps, and soil pH modifiers which are utilized.

(2) USACE Position: A certain percentage of the munitions that are used or fired on this range, and the other three ranges under review, would likely land in waters of the United States. The USACE would assume that most of this exploded ordinance would be comprised of lead, copper, zinc and other inert metals. Fragments of inert metal would not dissolve in water or otherwise become bio-available. Therefore, there would be a very low probability of munitions resulting in a more than minimal impact on water quality. The Georgia Environmental Protection Agency is reviewing the proposed project under Section 402 of the Clean Water Act, for compliance with the state's Water Quality Certification program. Prior to the USACE issuing a final permit for this proposal, the Georgia EPD must first issue Water Quality Certification. With issuance of Water Quality Certification, Georgia EPD would confirm that the proposed project would meet all applicable state standards.

PART III - ALTERNATIVES/SECTION 404(b)(1) ANALYSIS

A. ALTERNATIVES:

1. No Action: Under this course of action the Army would not construct a QTR. Current ranges are not adequate enough to provide the throughput required for modernized M4 and M16, machine guns, sniper weapons and standard issue pistol training. Consequently,

some Soldiers may not be able to obtain the required small arms marksmanship training resulting in a decrease in the readiness posture and overall deployability of a unit.

2. Off-Post Locations: Consideration was given to siting the QTR in an Off-Post location. Duplicating the infrastructure at a location Off-Post would incur considerable costs beyond the capability of the applicant's budget constraints. The QTR would at a minimum require a large tract of land in an appropriate shape to co-locate the surface danger zones (SDZs) and associated facilities (see further discussion below). Estimates and surveys have shown to acquire such a track of land would require an Environmental Impact Statement. An Off-Post facility would be difficult to locate and still meet the Proximity requirements, especially given the logistics, cost, and scheduling required. Additionally, there are no other Public Lands available nearby that would be compatible with the QTR training requirements.
3. On-Post Locations: The proposed project would not isolate useful maneuver terrain, cut off impact areas, create a new impact area, or make Unexploded Ordnance (UXO) clearance operations difficult.

The applicant identified three potential QTR sites on Fort Stewart. Each of these sites contains the area needed to support the range and accompanying SDZ. The three sites, which are discussed in more detail below, were identified and evaluated using the following criteria:

1. Allow Anti-Terrorism and Force Protection. The site must be able to accommodate appropriate anti-terrorism measures and standoff distances.
2. Compatibility with Wildfire and Control (Prescribed) Burning Programs. The risk of wildfires is taken into consideration when siting projects. Areas to be avoided are those that are infrequently burned, because of safety concerns and for adherence to protected species habitat management plans include parcels near major highways (State and Interstate) and adjacent communities. Constructing facilities in locations that hinder Fort Stewart's prescribed burn program must be avoided.
3. Minimization of Environmental Impacts. Consideration of environmental impacts when siting projects include the following: avoid or minimize impacts to cultural and natural resources (such as wetlands and protected species); avoid direct impacts to creeks and streams; limit expansion of noise cones into existing residential areas and off-post

communities; minimize adverse air quality impacts; and limit new metal contamination in standing timber (ranges).

4. Further Sustainability Goals. The Army incorporates sustainability principals into the planning, development, and upgrade of its facilities. From the outset, site selection and design follow sustainability principals, starting with design “charrettes” to ensure stakeholder collaboration toward optimal design, fiscal constraints, local characteristics and constraints, environmental issues, and consideration of functional adjacencies/relationships and land use compatibility. Site selection is based on functional adjacencies/relationships and land use compatibility. Ensure development near Fort Stewart’s Garrison/cantonment (living and working) areas flow well with existing infrastructure, protecting green fields and preserving habitat and natural resources. Minimize negative impacts on the site and on neighboring properties and structures; avoid or mitigate excessive noise, shading on green spaces, additional traffic, obscuring significant views, etc.

The Army Range Requirements Model (ARRM) is an Army-wide planning tool used by Army Headquarters to determine range requirements at each Army Installation. The ARRM provides an automated capability to take doctrinal requirements and accurately calculate live training throughput capacities and throughput requirements for each Installation. Ranges must be identified in the Installation’s ARRM for it to receive Department of the Army (DA) funding. In addition to the four siting criteria listed above, which are applicable to all facilities at Fort Stewart, the QTR has been identified in the ARRM and was sited based the following Range-specific criteria:

1. Ability to Meet Training Requirements. There should be sufficient range capacity to ensure each unit meets its training requirements as set forth in the following: Army regulation (AR) 350-1, *Army Training and Leader Development*; Training Circular (TC) 7-9, *Infantry Live-Fire Training*; DA Pamphlet (PAM) 350-38, *Standards in Weapons Training*; TC 25-8, *Training Ranges*; the 3rd Infantry Division’s Live Fire Guidance; and the unit’s related Mission Essential Task List.
2. Range Design. Based on each proposed range’s training purpose, each range must be of sufficient acreage to accommodate the SDZs for use of the specified munitions, as required by DA PAM 385-64, *Ammunition and Explosive Safety Standards*. The SDZ is a temporary safety boundary that surrounds the firing range and associated impact area

that provides a buffer to protect personnel from the non-dud producing rounds that may be ricocheted during operation of the range. It includes an ordnance dispersion area, ricochet area, and an added safety buffer zone. This area is closed to all unauthorized personnel during each training exercise on the range. In addition, each range must have an existing impact area sufficient to support live-fire munitions used at Fort Stewart and be configured (e.g., course and targets) in a manner lending itself to achieving offensive and defensive training objectives.

3. Proximity. Range assets must be available for access by all Fort Stewart-stationed units to meet their reoccurring training requirements and to achieve combat readiness status before they deploy. This means sufficient ranges must be available within a geographic distance that allows each unit to get equipment to and from range locations to complete essential tasks in a timely manner. The time and cost of transporting units to a training area must not interfere with the overall training levels for a unit. Each unit has a limited amount of time and cost resources to achieve training requirements. The time and cost of transport cannot be so excessive that it compromises the unit's ability to meet all mission essential tasks and readiness requirements. Quality of life may be affected if troops have to travel too far for training.

The USACE has performed an analysis of the three identified Courses of Action (COAs) and determined that COA 1 is the preferred alternative because it minimizes operational constraints. Impacts to wetlands would be avoided and minimized as discussed in Section B of this document. A table is shown below, for each proposed range, comparing each COA against the operational feasibility criteria is shown below. The overall screening criteria discussed in more detail below.

Table 2. Summary of Screening Analysis for FY1 QTR

Criteria	No-Action	COA 1	COA 2	COA 3 Eliminated
Can the Army standard design in TC 25-8 for this range be accommodated under this course of action within allowable waivers or modifications?	✗	✓	✓	✓
Can the Surface Danger Zone (SDZ) for this range be accommodated without infringing on adjacent training facilities or ranges?	n/a	✓	✓	✗

Has the range been sited to maximize use of the Installation's Training Area for future requirements by leaving the maximum amount of suitable contiguous land mass available for future needs?	n/a	✓	✓	✗
Is the terrain susceptible to wildfires which could cause safety issues to nearby Interstates or State Highways or lengthy shutdowns?	n/a	✓	✓	✓
Does this course of action avoid and minimize adverse environmental impacts?	✓	•	⊙	•
Does this course of action require either electrical power lines or fiber optic cable in excess of 10,000 feet, or for water lines to be constructed?	n/a	✓	✓	✓
Does this course of action require a new duded impact area to be established?	n/a	✓	✓	✓
Does this course of action minimize construction costs for the range? ¹	✓	•	•	•
Does this course of action meet Force Protection and Anti-Terrorism measures?	n/a	✓	✓	✓
Summary of Course of Action Feasibility	✗	•	⊙	✗

¹ For this criterion, that may arise for mitigating potential environmental impacts. It represents only the relative cost of construction for each particular location.

LEGEND:

- ✗ = Not Feasible – Unacceptable limitations
- ⊙ = Feasible – Moderate limitations and challenges
- = Feasible – Minor limitations and challenges
- ✓ = Feasible – No limitations or challenges
- n/a = Not Applicable

The Directorate of Public Works (DPW) Environmental Division, working in conjunction with the Directorate of Plans, Training, Mobilization, and Security (DPTMS) Training Division, the DPW Fish & Wildlife Branch, the DPW Forestry Branch, and the DPW Master Planning Division were able to identify 3 separate locations on Fort Stewart for the placement of this QTR. Each of the three sites is discussed in more detail below:

- a. **COA 1 is located in the D-7 Training Area (Within Alternative B) and is the preferred site.**

Allow Anti-Terrorism and Force Protection. Appropriate anti-terrorism measures and standoff distances are met by siting QTR at COA 1.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the QTR at COA 1 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities.

Minimization of Environmental Impacts. COA 1 would have an SDZ that overlaps 75 to 85 percent of the SDZs associated with existing and proposed adjacent ranges, which reduces new adverse environmental impacts. The COA 1 site would impact 26.7 acres of jurisdictional wetlands and would require wetland mitigation and 404 permitting, but impacts were avoided as much as possible during placement of the QTR. COA 1 may affect, but is not likely to adversely affect, the following protected species: Red-Cockaded Woodpecker (RCW), Frosted Flatwoods Salamander, Eastern Indigo Snake, and Wood Stork. No RCW cavity or start trees have been detected in COA 1, but a portion of the existing RCW habitat unit would be impacted. No Frosted Flatwoods Salamanders, Eastern Indigo Snakes, or Wood Storks have ever been identified in the action area. A portion of COA 1 intersects buffers of potential breeding ponds, but project design will incorporate protection measures to prevent significant erosion, run-off, or other off-site impacts that may affect habitat. In addition, COA 1 would not impact any gopher tortoise burrows that eastern indigo snakes might use as winter refugia, nor will it impact wetlands that may be used as summer foraging habitat. Fort Stewart is currently preparing a Biological Evaluation (BE) for consultation with the United States Fish and Wildlife Service (USFWS) for this QTR COA and all other COA 1 facilities. The QTR sited in the existing Delta Small Arms Impact Area would keep metal contamination in this general location. Cultural resources would not be impacted.

The preferred QTR COA does not change the total distance of existing noise zones extending off the Installation. The Noise Zone II contour would remain extended beyond the boundary, but with a different shape and location resulting in a new receiver area for small arms noise. Environmental impacts were minimized while meeting operational requirements when siting.

Further Sustainability Goals. As discussed above, COA 1 was sited to include significant overlaps of multiple SDZs to avoid development of an inappropriate site and reduce environmental impacts. COA 1 was selected based on compatibility with the adjacent land use.

Ability to Meet Training Requirements. COA 1 would be accessible to meet annual training requirements and to achieve combat readiness status before they deploy. The location of the COA 1 SDZ would allow live-fire training without the closure of training areas needed for maneuver of units. COA 1 would be available and would not interfere with the training requirements of other military units. COA 1 would not result in live fire rounds crossing other ranges or State highways or result in the SDZ extending beyond the Installation's boundaries.

Range Design. The QTR at this location is within an existing small arms impact area, within the Delta Training Area. COA 1 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use on Fort Stewart. COA 1 was configured to achieve offensive and defensive training objectives. This location does not constrain training within Fort Stewart. The proposed range does not create new impact areas through placement within existing SDZ and does not impact existing flight routes. Additionally, the range is in close proximity to existing utilities. When the proposed range requires maintenance, the site should provide easy access when adjacent ranges are active since it is sited off of an existing tank trail (FS 36), similar to existing and proposed ranges in the Delta Small Arms Impact Area. The SDZs of the existing Sniper Range and FY11 MPMG may interfere with the maintenance of the QTR beyond 1500 meters; however, this is not a substantial problem as it would not remove the range from the training rotation.

Proximity. Transporting units to COA 1 would not have a major impact on the overall training levels for a unit. COA 1 was sited within a geographic distance that allows each unit to deploy its Soldiers logistically and equipment to and from the QTR to complete essential life-fire tasks within established timeframes.

Advantages/Disadvantages: Based upon the information gathered, advantages of this site are that it does not isolate useful maneuver terrain, cut off impact areas, create a new impact area, or make UXO clearance operations difficult. Although greater environmental impacts would occur under COA 1, this site is the preferred alternative.

b. COA 2 is located in the Small Arms Impact Area in D-9 TA (Within Alternative C)

Allow Anti-Terrorism and Force Protection. Appropriate anti-terrorism measures and standoff distances are met by siting QTR at COA 2.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the QTR at COA 2 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities.

Minimization of Environmental Impacts. The QTR COA 2 location would also have an SDZ that overlaps 75 to 85 percent of the SDZs associated with existing and proposed adjacent ranges, which reduces new adverse environmental impacts. The COA 2 site would impact 24.7 acres of jurisdictional wetlands and would require wetland mitigation and permitting. The BE is pending for COA 2; however, the siting is expected to have similar impacts to protected species as COA 1. Based on draft data collection, no RCW cavity or start trees have been detected in COA 2. The project would remove 124.6 acres of existing RCW habitat. No Frosted Flatwoods Salamanders or Eastern Indigo Snakes habitat units have ever been identified in COA 2. The QTR sited in the existing Delta Small Arms Impact Area would keep metal contamination in this general location. One cultural resource was identified within the proposed footprint, but was determined ineligible for the National Register of Historic Place (NRHP). Therefore, no direct impacts to historic properties will occur under COA 2. The QTR COA 2 site would extend Noise Zone II further outside of the Installation's boundary than COA 1. Environmental impacts were minimized while meeting operational requirements when siting. However, this COA has greater adverse environmental impacts than the preferred QTR COA 1.

Further Sustainability Goals. As discussed above, COA 2 was sited to include significant overlaps of multiple SDZs to avoid development of an inappropriate site and reduce environmental impacts. COA 2 was selected based on compatibility with the adjacent land use.

Ability to Meet Training Requirements. COA 2 would be accessible to meet annual training requirements and to achieve combat readiness status before they deploy. Similar to COA 1, the QTR at this location is within the Delta Small Arms Impact Area. COA 2 for the QTR would not result in live fire rounds crossing major roads nor would it result in the SDZ extending beyond the Installation's boundary. COA 2 provides sufficient capacity to support a QTR. COA 2 would be available and would not interfere with the training requirements of other military units.

Range Design. The QTR at this location is within an existing small arms impact area, within the Delta Training Area. COA 2 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use at Fort Stewart. COA 2 was configured to achieve

offensive and defensive objectives. This location does not constrain training within Fort Stewart. The proposed range does not create new impact areas through placement within existing SDZ and does not impact existing flight routes. Additionally, the range is in close proximity to existing utilities. When the proposed range requires maintenance, the site should provide easy access when adjacent ranges are active since it is sited off of an existing tank trail (FS 36), similar to existing and proposed ranges in the Delta Small Arms Impact Area. However, during live fire of adjacent ranges, maintenance beyond 1000 meters could not be conducted. In addition, the proposed FY11 MPMG would interfere with the maintenance of the QTR beyond 1000 meters at this location.

Proximity. Transporting units to COA 2 would not have a major impact on the overall training levels for a unit. COA 2 was sited within a geographic distance that allows each unit to deploy its Soldiers logistically and equipment to and from the QTR to complete essential life-fire tasks within established timeframes.

Advantages/Disadvantages: Construction at COA 2 would result in more environmentally adverse impacts than COA 1, resulting in extensive mitigation costs and requirements.

c. COA 3 is located at the D-9 TA

Allow Anti-Terrorism and Force Protection. Appropriate anti-terrorism measures and standoff distances are met by siting QTR at COA 3.

Compatibility with Wildfire and Control (Prescribed) Burning Programs. Locating the QTR at COA 3 would not create additional wildfire or control burning issues since the site is not in close proximity to highways or residential communities.

Minimization of Environmental Impacts. COA 3 would have similar environmental impacts as compared to COA 2. The QTR COA 3 location would also have an SDZ that overlaps 75 to 85 percent of the SDZs associated with existing and proposed adjacent ranges, which reduces new adverse environmental impacts.

Further Sustainability Goals. As discussed above, COA 3 was sited to include significant overlaps of multiple SDZs to avoid development of an inappropriate site and reduce environmental impacts. COA 3 was selected based on compatibility with the adjacent land use.

Ability to Meet Training Requirements. COA 3 would be accessible to meet annual training requirements and to achieve combat readiness status before they deploy. Similar to COA 1, the QTR at this location is within the Delta Small Arms Impact Area. COA 3 for the QTR would not result in live fire rounds crossing major roads nor would it result in the SDZ extending beyond the Installation's boundary. COA 3 provides sufficient capacity to support a QTR. COA 3 would be available and would not interfere with the training requirements of other military units.

Range Design. This QTR siting option is similar to the COA 2 site except that it is oriented northeast to prevent the associated SDZ from leaving the Installation boundary. The QTR at this location is within an existing small arms impact area, within the Delta Training Area. COA 3 was sited to provide sufficient acreage to accommodate the SDZs for use of the specified munitions and would have an existing impact area sufficient to support the live-fire munitions contemplated for use at Fort Stewart. The design of COA 3 would cause operational constraints, not meeting outlined screening criteria. COA 3 would impact the preferred COA location for the FY13 Modified Record Fire (MRF) range. Essentially, if the QTR were sited here, the FY13 MRF range's preferred site would not be a viable option for the Installation.

Proximity. Transporting units to COA 3 would not have a major impact on the overall training levels for a unit. COA 3 was sited within a geographic distance that allows each unit to deploy its Soldiers logistically and equipment to and from the QTR to complete essential life-fire tasks within established timeframes.

Advantages/Disadvantages: This QTR siting option is similar to the Alternative C site except that it is oriented northeast to prevent the associated SDZ from leaving Fort Stewart's boundary. Because of this, the QTR SDZ would affect the preferred alternative location for the FY13 MRF range. Essentially, if the QTR were sited here, the FY13 MRF range's preferred site would not be a viable option for Fort Stewart. Therefore, the QTR at this location was determined unfeasible and is not carried forward for detail review.

B. AVOIDANCE:

1. Total wetland avoidance on-site is not possible based on the layout and size of range complexes. Also, the layout of adjacent wetland areas made total avoidance impossible. Any further reduction in proposed impacts would not meet the applicant's purpose and would not be practicable.

2. The applicant has not completed final site design for the proposed project. The standard site layout for this type of range would require the filling and/or mechanized clearing of all 26.7 acres of bottomland hardwood wetlands on the 223-acre project site. The applicant will likely be able to avoid some of the wetlands on the project site as final site design is completed for the project. However, for the purposes of this permit evaluation, the US Army Corps of Engineers (USACE) will assume that all 26.7 acres of wetlands on the proposed project site would be impacted. As an additional avoidance measure, the USACE would include the following special condition in any draft permit issued for this project:

The site design for this project has not been finalized. Authorized wetland impacts are based on a standard range design. Prior to conducting any work in wetlands on this project site, the permittee shall submit final site development plans to the USACE for review and approval. No work in wetlands can occur until the USACE has reviewed and approved the final plan in writing; this concurrence letter needs to document that the 404(b)(1) process has been adequately demonstrated. It is anticipated that once final design is completed, there will be a minor reduction in the amount of wetland area that will be impacted by the project. This anticipated change in the footprint of authorized wetland impact is authorized under this permit and modification of the permit will not be required for this change in site design.

C. MINIMIZATION ALTERNATIVES:

1. Minimizing Wetland Footprint: As required by Section 404(b) 1 of the CWA, minimization of adverse impact to wetlands was documented within the footprint the project site, based on the current design configuration of the proposed project. As the project continues through the design process, to the point of final design, it is anticipated that there will be the potential for avoiding impacts to some wetland areas. Side slopes of wetland fills will be at a 3:1 minimum, to avoid unnecessary impacts. Wetland boundaries and project limits will be clearly marked to prevent inadvertent impacts to adjacent wetland areas.
2. Erosion Control Techniques: The applicant has indicated that best management practices (BMPs) would be utilized while performing any construction activities on the subject

property. In addition, the applicant has indicated that activities would be performed in a manner to minimize turbidity and/or erosion. Any permit that would be issued by the USACE would also include the following special condition, "All work conducted under this permit shall be located, outlined, designed, constructed and operated in accordance with the minimal requirements as contained in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. Utilization of plans and specifications as contained in "Manual for Erosion and Sediment Control, (Latest Edition)," published by the Georgia Soil and Water Conservation Commission or their equivalent will aid in achieving compliance with the aforementioned minimal requirements."

D. COMPENSATORY MITIGATION: Using Savannah District's Standard Operating Procedure (SOP), for calculating compensatory mitigation requirements, Fort Stewart determined that at least 216.27 credits would be required to compensate for the proposed impacts. Fort Stewart will evaluate acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs) for the FY13 QTR. Similar to the process outlined in the Compensatory Mitigation Rule, the Installation's standard procurement processes conducts market research in accordance with the Federal Acquisition Regulation. This research requirement as it relates to contracting of off-post wetland credit purchases includes evaluating the current market and availability of primary and secondary service area mitigation credits. This process will be implemented when seeking mitigation options for ranges beyond FY11.

E. CONCLUSIONS: Based on the above, an off-post facility would be difficult to locate and still meet the proximity requirements, especially given the logistics, cost, and scheduling required. Also, duplicating the infrastructure at a location off-post would incur considerable costs beyond the capability of the applicant's budget constraints. The applicant provided an adequate analysis of on-post locations for sighting this range and mitigation, as well as three other proposed new ranges.

F. SECTION 404(b)(1) ANALYSIS: This project must be evaluated for compliance with the Section 404(b)(1) Guidelines (40 CFR Section 230). The goal of the 404(b)(1) Guidelines is "to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredges or fill material." An expanded 404(b)(1) analysis will be conducted prior to making any permit decision.

PART IV - PUBLIC INTEREST REVIEW

A. ENVIRONMENTAL SETTING/EXISTING CONDITIONS: The DA owns and manages the area in which the proposed QTR is located. The preferred COA is located with Delta Small Arms Impact Area, specifically located to the west of the existing Garrison at Fort Stewart.

B. ENVIRONMENTAL IMPACTS: The USACE's Regulatory Program considers the full public interest, reflecting the protection and utilization of important resources. Table 3 is a summary of our public interest review for the proposed activity, which assesses the impacts of the proposed permit action on environmental and other public interest factors (33 CFR 320.1(a)(1), 320.4 and 325.3(c)).

Table 3. Summary of Project Impacts

FACTORS	No Effect	Negligible	Undetermined	Beneficial Major/ Minor		Adverse Major/ Minor	
1. Economics/Social	X						
2. Education/Scientific	X						
3. Aesthetics	X						
4. Food-Fiber Production	X						
5. Historical/Architectural/ Archaeological	X						
6. Recreation	X						
7. Land Use	X						
8. Mineral Resources	X						
9. Soil Conservation							X
10. Water Supply Conservation	X						
11. Water Quality		X					
12. Air Quality		X					
13. Noise Levels							X
14. Public Safety		X					
15. Energy Needs							X
16. National Security	X						
17. Navigation	X						
18. Shoreline Erosion Accretion	X						
19. Flood Hazards	X						
20. Flood Plain							X
21. Wetlands							X
22. Refuges	X						
23. Fish	X						
24. Wildlife			X				
25. Food Chain Organisms	X						
26. Shellfish Production	X						
27. Threatened and Endangered Species			X				
28. General Environmental Concerns							X
29. Property Ownership	X						
30. Mineral Needs	X						
31. Other	X						

C. DISCUSSION: We have evaluated the permit application regarding the need for the proposed activities, the practicability of project alternatives, and the beneficial and detrimental effects, including cumulative impacts. Complete descriptions of the 31 public interest factors can be found in the Range and Garrison Construction EIS (RGCEIS) for Fort Stewart. Each public interest factor is referenced to specific sections within the EIS.

1. Economics/Social – The proposed project will have no effect to the local economy or local social environment. (RGCEIS Section 4.11 Social and Economics)
2. Education/Scientific – The proposed project will have no effect to educational or scientific resources. The project footprint is within an Army Installation small arms impact area. (RGCEIS Section 4.11 Social and Economics)
3. Aesthetics – The proposed project will have no effect to aesthetics. The project footprint is within an Army Installation small arms impact area and is off-limits to unauthorized personnel. (RGCEIS Section 4.7 Land Use)
4. Food-Fiber Production – The proposed project will have no effect to food or fiber production. The project site is within an existing small arms impact area. (RGCEIS Section 4.4.3 Forestry Management)
5. Historical/Architectural/Archaeological – The US Army, Fort Stewart is the lead federal agency for this proposed action. Impact analysis for historic properties follow guidelines set forth in Section 106 of the National Historic Preservation Act (NHPA) implementing regulations (36 CFR 800), Fort Stewart's Programmatic Agreement with the Georgia SHPO. Fort Stewart would complete required consultation and make any necessary Section 106 of the NHPA determination, if required, prior to any work occurring in waters of the US subject to the jurisdiction of the USACE on a project site where cultural resources have been identified. (RGCEIS Section 4.5 Cultural Resources).
6. Recreation – The proposed project will have no effect to recreational areas. The footprint is located with a land use designated for range and training lands. (RGCEIS Section 4.7 Land Use)
7. Land Use – The proposed project is compatible to the existing land use category of range and training lands. Therefore, there will be no effect to land use. (RGCEIS Section 4.7 Land

Use)

8. Mineral Resources – The proposed project is located within the confines of an Army Installation that is designated for Soldier training. There are no minerals mined at Fort Stewart. Therefore, there will be no effect to mineral resources at the project site. (RGCEIS Section 4.1 Geology and Soils)
9. Soil Conservation – The project will undergo tree removal and grubbing and grading during construction of the proposed range. However, standard erosion and sedimentation (E&S) control measures will be implemented to prevent sedimentation from leaving the confines of the project site. E&S control best management practices (BMPs) will also be implemented throughout the duration of the project and after construction to ensure stormwater leaving the range has been filtered before reaching nearby wetland areas. Furthermore, an E&S control plan will be prepared for this project. A National Pollution Discharge Elimination System (NPDES) permit will be obtained for this project. At a minimum, a Level 1A E&S Control Certified or Subcontractor Awareness E&S trained individual is required to be on site during any land disturbance activity. Adverse impacts to soil are expected to be minor and temporary in nature until construction is completed. (RGCEIS Section 4.1 Geology and Soils)
10. Water Supply Conservation – The proposed project will not require use of the Installation's water supply. Therefore, water supply will have no effect. (RGCEIS Section 4.3 Water Quality and Resources)
11. Water Quality – During the construction phase of the proposed project, wetland areas will be filled within the range footprint. All necessary permitting and mitigation will be conducted. See number 21, Wetlands, for additional information regarding impacts to wetland areas. Impacts to nearby surface water would likely not be impacted since necessary E&S control measures, as required by the Georgia Environmental Protection Division, will be implemented to prevent sedimentation from leaving the site. Turbidity samples will be taken during and after construction to ensure sedimentation in outfall areas do not increase from what the area currently experiences. Total Maximum Daily Load (TMDL) regulations require maintaining predevelopment time of concentration by strategically routing flows to maintain travel time, improve water quality, and to control the stormwater discharge. Flow calculations will also be conducted during preparations of the E&S control plan to ensure

concentrated stormwater runoff flows from peak rain events will not impact nearby water bodies. The proposed project footprint will be filled during construction activities; therefore, adverse impacts to groundwater are not anticipated.

Fort Stewart is in consultation with the Georgia Environmental Protection Division regarding a water quality certification pursuant to Section 401 of the Clean Water Act. The USACE would include a copy of the 401 water quality certification with any permit issued. In addition, the special condition of any permit issued would require the permittee to adhere to the conditions of the 401 water quality certification. (RGCEIS Section 4.3 Water Quality and Resources)

12. Air Quality – Adverse impacts to air quality is not anticipated. Only minor and temporary amounts of dust generation during timber harvesting and construction are expected; however, no regulatory air quality thresholds would be exceeded. (RGCEIS Section 4.2 Air Quality)
13. Noise Levels – The proposed project and its location will not change the total distance of Noise Zone II (87 dB PK15) that currently extends beyond the southwestern portion of the Installation boundary (1400 meters). However, the shape of the contour will change as a result of this project and a new receiver area for small arms noise will be generated. Noise Zone III (104 dB PK15) will not extend beyond the Installation boundary. (RGCEIS Section 4.6 Noise)
14. Public Safety – During the timber harvest, prescribed industrial safety standards would be followed. No specific aspects of the proposed project would create any unique or extraordinary safety issues. The project location is outside of current explosive safety quantity distance clear zones and the inhabited building distance clear zones. An unexploded ordnance survey will be conducted prior to timber harvesting and construction activities. If necessary, an unexploded ordnance avoidance plan will be prepared. (RGCEIS Section 4.9 Safety)
15. Energy Needs – Within the area of potential effect, there are existing utilities into which new lines from the range can tie in, minimizing the potential ground disturbing activities associated with the establishment of all-new utility systems. This proposed project would also not result in a substantial increase in utility usage. Executive Order 13423 sets as a goal for all federal agencies the improvement of energy efficiency and the “reduc[tion] of

greenhouse gas emissions of the agency, through reduction of energy intensity by (i) 3 percent annually through the end of fiscal year 2015, or (ii) 30 percent by the end of fiscal year 2015, relative to the baseline to the agency's energy use in fiscal year 2003." The U.S. Army Energy Strategy for Installations (U.S. Army Energy Strategy for Installations, 8 July 2005, available at <http://army-energy.hqda.pentagon.mil/docs/strategy.pdf>), also contains strategies to reduce energy waste and improve efficiency. Taking these policies into account, this action does not represent a net incrementally addition to the global climate change problem. (RGCEIS Section 4.8 Infrastructure)

16. National Security – The proposed project will have no effect to national security. The requirement for this range has been validated by the Range and Training Land Program Development Plan prepared for Fort Stewart and the Forces Command Live Fire Training Investment Strategy. This project has been coordinated with the Installation physical security plan, and all physical security measures are included in the project. All required antiterrorism protection measures are included in the project, per DA PAM 190-51 (*Risk Analysis for Army Property*) and Training Manual 5-853-1 (*Security Engineering Project Development*). (RGCEIS Section 4.9 Safety)
17. Navigation – Navigable waters will not be impacted by this project. (RGCEIS Section 4.3 Water Quality and Resources)
18. Shoreline Erosion Accretion - The site is many miles from the coast and the project will not add to shoreline erosion accretion. (RGCEIS Section 4.1 Geology and Soils)
19. Flood Hazards – The site does not present an unusual flood hazard for this area (see below.) (RGCEIS Section 4.3 Water Quality and Resources)
20. Flood Plain – The site is located in the Federal Emergency Management Administration (FEMA) 100 year flood zone, meaning that the flood elevation in that area has a 1- percent chance of being equaled or exceeded each year. This does not present an unusual flooding hazard for this area, and as the site will be used only for military training, does not present an appreciable hazard to property or human safety. (RGCEIS Section 4.3.1 Surface Water and Floodplains)
21. Wetlands – The project, as currently proposed, would impact 26.7 acres of bottomland hardwood wetlands, either through direct filling or by mechanized land clearing. However,

the applicant has not completed final site design for the proposed project. The standard site layout for this type of range would require the filling and/or mechanized clearing of all 26.7 acres of bottomland hardwood wetlands on the 223-acre project site. The applicant will likely be able to avoid some of the wetlands on the project site as final site design is completed for the project. However, for the purposes of this permit evaluation, the US Army Corps of Engineers (USACE) will assume that all 26.7 acres of wetlands on the proposed project site would be impacted. As an additional avoidance measure, the USACE would include the following special condition in any draft permit issued for this project: The site design for this project has not been finalized. Authorized wetland impacts are based on a standard range design. Prior to conducting any work in wetlands on this project site, the permittee shall submit final site development plans to the USACE for review and approval. It is anticipated that once final design is completed, there will be a minor reduction in the amount of wetland area that will be impacted by the project. This anticipated change in the footprint of authorized wetland impact is authorized under this permit and modification of the permit will not be required for this change in site design.

The present total proposed wetland impact for the four proposed ranges is 179.03 acres. As discussed by the applicant above, not all of these proposed impacts are for fill, but a certain percentage would involve mechanized land clearing impacts. Clearing wetlands of vegetation and maintaining them in scrub/shrub vegetation results in a change in function, but not a total loss in function. The mitigation credits proposed by Fort Stewart are assuming a total loss in function. The proposed mitigation plan is to purchase 1,391 credits to compensate for a total of 179 acres of wetland impact for all four ranges. This is a credit to impact ratio of 7.8:1. On average, three credits are generated for each acre of wetland restoration at the Wilkinson/Oconee Mitigation Bank, where credits will be purchased for the FY11 ranges. Therefore, the effective mitigation ratio for the FY11 Multipurpose Machine Gun Range and FY11 Infantry Platoon Battle Course projects would be approximately 2.6:1 of wetland restoration. The Applicant has not ruled out other acceptable compensatory mitigation alternatives to mitigate wetlands impact (provided through mitigation banks or in-lieu fee programs) for the FY13 Digital Multipurpose Training Range and the FY13 Qualification Training Range. Therefore, it is the position of the USACE that the mitigation proposed for this QTR project would meet the requirements of the new mitigation rule.

Even with implementation of the applicant's proposed compensatory wetland mitigation plan, the project would result in an overall loss in aquatic function within the watershed and

on Fort Stewart. Therefore, the USACE has determined that the project would result in a minor adverse impact to wetlands. (RGCEIS Section 4.3.2 Wetlands)

22. Refuges - The site will not impact any areas specifically devoted to wildlife refuge. (RGCEIS Section 4.4 Biological Resources)
23. Fish – The site will not impact any fish species. The Canoochee and Ogeechee rivers are approximately 20 miles from the proposed project site. (RGCEIS Section 4.4 Biological Resources)
24. Wildlife – There were no RCW cavity or start trees detected in the footprint. The site will impact RCW foraging habitat. This site will also impact a potential breed pond for the flatwoods salamander. However, there has never been a salamander found in this pond. Formal consultation with the USFWS has been conducted for these impacts. (RGCEIS Section 4.4 Biological Resources)
25. Food Chain Organisms – No specific or unique food chain organisms are known or suspected to exist on the site. (RGCEIS Section 4.4 Biological Resources)
26. Shellfish Production – The site is many miles from the coast and the project will not affect local shellfish production. (RGCEIS Section 4.4 Biological Resources)
27. Endangered Species – The US Army, Fort Stewart is the lead federal agency for this proposed action. The site will impact RCW foraging habitat. This site will also impact a potential breed pond for the flatwoods salamander. However, there has never been a salamander found in this pond. Fort Stewart has completed formal consultation with the USFWS. The USFWS has made the necessary Section 7 of the Endangered Species Act determinations for the proposed project.
28. General Environmental Concerns – The project is expected to incur only the most minimal adverse impact to the local ecosystem. Sites are chosen to include the goal of avoiding and/or minimizing such impacts. Where possible and appropriate, impacts will be mitigated. Fort Stewart is generating an Environmental Impact Statement detailing these impacts.
29. Property Ownership – The property is owned by the United States Army for the primary purpose of military training. RGCEIS Section 4.7 Land Use)

30. Mineral Needs – No particularly valuable or unique minerals are known or suspected to exist at the site. (RGCEIS Section 4.1 Geology and Soils)
31. Other – No notable environmental aspects not covered by the preceding will be impacted by this project.

D. US ARMY CORPS OF ENGINEERS' WETLAND POLICY: The proposed wetland alteration is necessary to realize the project's purpose and should result in minimal adverse environmental impacts. The benefits of the project would outweigh the minimal detrimental impacts. Therefore, the project is in accordance with USACE's Wetland Policy (33 CFR 320.4(b)).

E. TITLE III OF THE CIVIL RIGHTS ACT OF 1964 AND EXECUTIVE ORDER 12898: The proposed action would not directly, or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin, nor would it have a disproportionate effect on minority or low-income communities.

F. CUMULATIVE IMPACTS: The Council on Environmental Quality (CEQ) defines cumulative impacts as the “impact on the environment which results from the incremental impact of the action(s) 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” (40 CFR 1508.7).

Geographic Scope/Region of Influence (ROI): the National Environmental Policy Act (NEPA) requires that the impacts of each proposed project be considered within the appropriate geographical area/region of influence. The geographic area/ROI for purposes of consideration of proposed projects within the boundaries of Fort Stewart are: the Altamaha watershed and United States Geological Service, Georgia Hydrologic Unit Code (HUC) 03070106 encompassing portions of Appling, Evans, Glynn, Jeff Davis, Long, McIntosh, Montgomery, Tattnall, Toombs, and Wayne County; the Lower Ogeechee River watershed HUC 03060202, encompassing portions of Bryan, Bulloch, Chatham, Effingham, Emanuel, Jenkins, and Screven Counties; the Little Ogeechee watershed HUC 03060204, encompassing portions of Bryan, Chatham, Effingham, Liberty, Long and McIntosh Counties; and the Canoochee Creek watershed HUC 03060203, encompassing portions of Bryan, Liberty, Evans, Tattnall, Candler, Emanuel, and Bulloch Counties. The USACE determined that actions taken in the “Fort Stewart Watersheds”

would be sufficiently similar in location, topography, watershed impacts, habitat types, etc., to be considered in a cumulative impacts assessment. To properly scope this analysis the USACE has identified target resources for evaluation based on public and agency comments. Target resources are important resources that could be cumulatively affected by activities in the identified scoping area.

The USACE identified the following target resources because of their scarcity and regional importance: (1) wetlands; (2) water quality; (3) aquatic species, and (4) mitigation. Below we have assessed the cumulative impacts of the proposed project on these target resources. In doing this, we considered the impacts of this project, past projects, as well as all reasonably foreseeable impacts in the above identified watersheds.

The proposed action, in addition to other projects in the geographic areas of consideration (i.e., HUC's 03070106, 03060202, 03060204, and 03060203), have the possibility to result in either negative or positive impacts in a cumulative manner. Cumulative impacts are most likely to occur when a relationship exists between a proposed action, or alternative, and other actions expected to occur in a similar location, time period, and/or involving similar actions, i.e. past, present, and reasonably foreseeable future actions.

There are numerous projects in the watersheds associated with Fort Stewart, which are part of typical urban activities/development. These projects can be categorized generally as construction, maintenance, or demolition. This analysis takes into account the proposed project/action along with the larger projects in the ROI.

1. Wetlands: The following table provides information on all wetland impacts permitted by the Savannah District between January 1, 1990, and July 6, 2005, and the acres of wetland mitigation required for these impacts. This information was generated by the Savannah District Regulatory Analysis and Management System (RAMS) database. There has undoubtedly been some additional loss of wetland during this time period from activities not regulated by the USACE, but no data exist on these losses.

Table 4. Wetland Impacts from January 1, 1990, through July 6, 2005, in the Counties Included in the Fort Stewart Watersheds

Wetland Acres Requested	Wetland Acres Permitted	Wetland Acres Mitigated
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County	Acres			
Bryan	111509	38.15	41.81	236.29
Bulloch	81797	114.67	119.28	205.28
Chatham	162459	701.13	666.91	4298.24
Effingham	127318	175.13	205.08	633.59
Emanuel	42158	67.78	67.78	269.26
Jenkins	35292	55.74	55.74	230.22
Screven	85270	47.99	57.19	92.08
Liberty	139558	55.74	55.74	230.22
Long	93629	117.9	117.9	1343.68
McIntosh	149942	16.86	16.85	69.64
Appling	39963	34.02	34.02	70.39
Evans	12493	21.28	21.28	34.81
Glynn	134011	210.8	210.13	1496.65
Jeff Davis	23394	2.68	2.68	3.75
Montgomery	14426	8.78	8.78	6.96
Tattnall	33959	31.49	31.49	73.08
Toombs	21718	3.45	3.45	2.43
Wayne	99669	189.6	188.5	1499.45
Candler	17051	4.98	10.48	4.78
Emanuel	42158	67.78	67.78	269.26
	1467774	1965.95	1982.87	11070.06
TOTALS				

In summary, the USACE can document that in 1990 there were approximately 1,467,774 acres of wetlands in HUC's 03070106, 03060202, 03060204, and 03060203 within Bryan, Bulloch, Chatham, Effingham, Emanuel, Jenkins, Screven, Liberty, Long, McIntosh, Appling, Evans, Glynn, Jeff Davis, Montgomery, Tattnall, Toombs, Wayne, Candler and Emanuel Counties. By deducting 1,982.87 acres of wetland impacts since 1990 (RAMS database), there are at least 1,465,792 acres of wetlands remaining in this area. This amounts to a loss of 0.2 percent of the wetlands in HUC's 03070106, 03060202, 03060204, and 03060203 since 1990. The largest percent loss by county would be Chatham County, where 0.4 % of the wetlands have been impacted since 1990. The USACE can also document that 11,070.06 acres of wetland mitigation were provided to offset the post 1990 wetland impacts in this area.

In addition to the impacts described above, Fort Stewart itself has experienced some wetland impacts associated with various projects since the close of the review period in 2005. Some major restoration projects, employed to mitigate wetland impacts, have also occurred within and after the review period, but have not been integrated into the data described above. The effects of

these projects are outlined in the table below.

Table 5. Fort Stewart Wetland Impacts Post-2005

	Wetland	Wetland	Wetland
	Acres	Acres	Acres
County	Requested	Permitted	Mitigated
Bryan	4.23	4.23	0
Liberty	214.77	214.77	3230
Long	0	0	0
Evans	0	0	0
Tattnall	0	0	0
TOTALS	219	219	3230

The following is a list of Fort Stewart projects authorized by the USACE within Fort Stewart watersheds outside the review period.

a. Department of the Army Permit 940000880 (modification), issued June 29, 1995, authorized the enhancement of approximately 1,300 acres of wetlands in the A11 training area of Fort Stewart, to mitigate for 2.1 acres of wetlands impacted by the earlier construction (under the same Permit number) of rail pass tracks in an adjacent training area.

b. Department of the Army File Number 200007600 refers to the restoration and enhancement of approximately 1,200 acres of wetlands to create Fort Stewart's Canoochee Creek Reservoir (or "Pond 4") Mitigation Bank.

c. Department of the Army Permit 200601665, issued December 6, 2006, authorized impacts to 4.23 acres of wetlands in Bryan County for improvements to the road in Fort Stewart's existing Convoy Live Fire Range. Mitigation consisted of a debit of 12.7 credits from the Installation's on-post wetland mitigation bank.

d. Department of the Army Permit 200501852, issued March 12, 2007, authorized impacts to 206.9 acres of wetlands in Liberty County for the construction of the Digital Multipurpose Range Complex (DMPRC). 4.0 acres of jurisdictional wetland were impacted through direct filling; the remaining 202.9 acres were impacted through cutting of vegetation to meet line-of-sight

requirements. Mitigation was accomplished through the Strum Bay Restoration, which (under the same Permit) restored and enhanced approximately 730 acres of wetlands adjacent to the project area by correcting previously impacted hydrology.

e. One project for which a DA Permit is pending, vehicle maintenance facilities in support of 2nd BCT operations, will impact a total of 7.87 acres of wetlands. Although no DA Permit number has yet been assigned to these projects as they are still in the planning stages, the Fort Stewart Wetland Mitigation Bank has been debited in anticipation of them, so the impacts have been included in this analysis.

Fort Stewart has implemented an aggressive mitigation program in order to offset wetland impacts on the Installation. These projects include wetland enhancement and wetland restoration projects on large scale areas that provide higher quality mitigation than smaller patchwork single permit mitigation products. The following are current wetland mitigation projects located within the boundaries of Fort Stewart:

Pond 4 Mitigation Bank (USACE File Number 200007600): This single user bank was permitted for projects located within the boundaries of the Fort Stewart Installation. Approximately 1200 acres of wetlands were restored within the Canoochee Creek and Strum Bay wetland systems. This project is mostly comprised of deepwater and hardwood swamp habitat. Additional areas upstream of Pond 4 are currently being studied that would increase the total amount of wetland enhancement and restoration (see Strum Bay Mitigation Area below).

A-11 Mitigation Area (USACE File Number 940000880): This project specific mitigation area is comprised of approximately 1300 acres of wetland enhancement/restoration. Hydrologic enhancement/restoration was completed through the reintroduction of hydrology that had been previously diverted around the project area. It is comprised mostly of pine/cypress flatwoods and hardwood drainages.

Strum Bay Mitigation Area (USACE File Number 200501852): This project specific mitigation was originally developed to mitigate impacts associated with the DMPPRC. Subsequent studies realized a much larger restoration/enhancement was obtained by re-directing hydrology back into the Strum Bay wetland system. This project has now identified enhancement and restoration of wetland hydrology to approximately 730 acres. This portion of the Strum Bay wetland system is located upstream from the Pond 4 Mitigation Bank, thus creating additional benefits to water quality and habitat to the entire Strum Bay wetland system and Pond 4 Mitigation Bank.

Summary: These effects, when combined with other projects in the ROI, do have the potential to result in adverse cumulative impacts; however, it is expected that other projects in the ROI will be implemented as follows: projects will use erosion control measures, silt fencing, and other Best Management Practices (BMPs); sufficient storm water management structures will be constructed as part of new construction; erosion and sedimentation control plans will be filed in accordance with Georgia's Sedimentation Pollution Control Act; and all projects will be conducted in accordance/in compliance with federal, state, and local laws. This includes obtaining and adhering to appropriate wetland permits, including compliance with compensatory wetland mitigation requirements outlined in the wetland permit(s).

2. Water Quality: Water quality is affected by changes to the environment (referred to as stressors) that adversely affect aquatic life or impair human uses of a water body. Point sources are municipal and industrial wastewater discharge. Non-point sources consist of sediment, litter, bacteria, pesticides, fertilizers, metals, oils, grease, and a variety of other pollutants that are washed from rural and urban lands by storm water. Expected growth in population and employment in the basin will mean more potential stress from storm water runoff as well as non-point source loading.

Wetland Loss: The impacts to wetlands discussed above would be expected to have an adverse impact on water quality due to the loss of associated aquatic functions (flood water retention, filtration, contaminate removal, sediment retention, etc.). The mitigation for these impacts would help to offset these impacts to water quality.

Point Source Discharges: Impacts from municipal wastewater, agricultural, and industrial discharges were greater prior to the 1970's. Due to increased regulation, these discharges have been reduced but continue to introduce pollutants into the system, which lower water quality when considered cumulatively. Georgia's "2004 303(d) List" for Bryan, Evans, Liberty, Long, and Tattnall counties have 3 waterways listed as impaired or partially impaired; they are listed in the table below with the causes of impairment.

Table 6.

Waterway	Cause of Impairment
Canoochee River	Trophic-weighted residue value (mercury in fish tissue)
Peacock Creek	Low dissolved oxygen and fecal coliform bacteria

Taylor's Creek	Low dissolved oxygen
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Non-point Source Discharges: Residential, commercial and industrial development results in an increase in impervious surfaces (roof tops, paved roads, parking lots, etc.), which affects storm water discharges. Development results in an increase in non-point source contaminant loading through associated increases in urban landscaping (pesticides and fertilizers), increased traffic (oil, grease and metals), and other associated activities. There would be an anticipated incremental increase in adverse impacts to water quality as impervious surfaces increase. The following table is a summary of anticipated population growth-induced increases in impervious surfaces in the Altamaha watershed. The amount of impervious surface coverage is increasingly recognized as a valuable predictor of overall water quality within a watershed. In general, as population increases, so does impervious surface. As impervious surface area increases, water quality decreases. Table 4.1 shows population and impervious surface area growth over time for the Lower Ogeechee watershed; Table 4.2 shows population and impervious surface area growth over time for the Canoochee watershed; Table 4.3 shows population and impervious surface area growth over time for the Little Ogeechee watershed; Table 4.4 shows population and impervious surface area growth over time for the Altamaha watershed.

The impervious surface data was generated by the USEPA and provided to the USACE via a table titled "Total Impervious Area Calculations by 12-Digit HUC Watershed (based upon National Land Cover Data, 1993). Using simple linear regression analysis, the USACE utilized county population projection data to estimate percent increase in impervious surface, by county. The data contained in Tables 4.1 thru 4.4 indicates that as the population of each county continues to increase, there will be an associated increase in impervious surfaces. All counties in the study area would be anticipated to experience an increase of less than one percent impervious surface by the year 2050. However, each county is responsible for regulating non-point source storm water discharges pursuant to Section 402 of the CWA. These county storm water management programs should help to minimize the anticipated adverse impacts to water quality.

Table 7. Projected Population Growths and Associated Approximate Impervious Surface Increases
Lower Ogeechee - HUC 03060202

County		Year						
		2007	2008	2010	2020	2030	2040	2050
Bryan	Population / square mile	66	69	70	88	106	124	142
	% impervious Surface							
	Coverage	2.33	2.37	2.39	2.68	2.97	3.26	3.55
Bulloch	Population / square mile	96	98	101	120	139	157	176
	% impervious Surface							
	Coverage	2.81	2.84	2.89	3.20	3.50	3.79	4.09
Chatham	Population / square mile	385	389	386	410	434	457	481
	% impervious Surface							
	Coverage	7.33	7.39	7.35	7.71	8.07	8.42	8.78
Effingham	Population / square mile	105	108	111	142	173	204	234
	% impervious Surface							
	Coverage	2.95	3.00	3.05	3.55	4.04	4.53	5.00
Emanuel	Population / square mile	32	33	33	34	36	37	38
	% impervious Surface							
	Coverage	1.77	1.79	1.79	1.81	1.84	1.85	1.87
Jenkins	Population / square mile	24	24	25	25	25	25	26
	% impervious Surface							
	Coverage	1.64	1.64	1.66	1.66	1.66	1.66	1.68
Screven	Population / square mile	23	23	24	25	26	27	28
	% impervious Surface							
	Coverage	1.63	1.63	1.64	1.66	1.68	1.69	1.71
Watershed Average								
Lower Ogeechee	Population / square mile	104	106	107	121	134	147	161
	% impervious Surface							
	Coverage	2.92	2.95	2.97	3.18	3.39	3.60	3.81

Table 8. Projected Population Growths and Associated Approximate Impervious Surface Increases
Canoochee - HUC 03060203

County		Year						
		2007	2008	2010	2020	2030	2040	2050
Bryan	Population / square mile	66	69	70	88	106	124	142
	% impervious Surface							
	Coverage	2.33	2.37	2.39	2.68	2.97	3.26	3.55
Bulloch	Population / square mile	96	98	101	120	139	157	176
	% impervious Surface							
	Coverage	2.81	2.84	2.89	3.20	3.50	3.79	4.09
Candler	Population / square mile	42	43	44	50	56	62	67
	% impervious Surface							
	Coverage	1.94	1.95	1.97	2.07	2.16	2.26	2.34
Emanuel	Population / square mile	32	33	33	34	36	37	38
	% impervious Surface							
	Coverage	1.77	1.79	1.79	1.81	1.84	1.85	1.87
Evans	Population / square mile	61	62	65	74	84	93	102
	% impervious Surface							
	Coverage	2.24	2.26	2.31	2.46	2.62	2.76	2.91
Jenkins	Population / square mile	24	24	25	25	25	25	26
	% impervious Surface							
	Coverage	1.64	1.64	1.66	1.66	1.66	1.66	1.68
Liberty	Population / square mile	100	97	105	109	114	119	124
	% impervious Surface							
	Coverage	2.87	2.83	2.95	3.02	3.10	3.18	3.26
Long	Population / square mile	28	28	31	38	46	53	60
	% impervious Surface							
	Coverage	1.71	1.71	1.76	1.87	2.00	2.11	2.23
Tattnall	Population / square mile	47	48	50	57	63	70	76
	% impervious Surface							
	Coverage	2.02	2.03	2.07	2.18	2.28	2.39	2.49
Watershed Average								
Canoochee	Population / square mile	55	56	58	66	74	82	90
	% impervious Surface							
	Coverage	2.15	2.16	2.20	2.33	2.46	2.58	2.71

Table 9. Projected Population Growths and Associated Approximate Impervious Surface Increases Little Ogeechee - HUC 03060204

County		Year						
		2007	2008	2010	2020	2030	2040	2050
Bryan	Population / square mile	66	69	70	88	106	124	142
	% impervious Surface							
	Coverage	2.33	2.37	2.39	2.68	2.97	3.26	3.55
Chatham	Population / square mile	385	389	386	410	434	457	481
	% impervious Surface							
	Coverage	7.33	7.39	7.35	7.71	8.07	8.42	8.78
Effingham	Population / square mile	105	108	111	142	173	204	234
	% impervious Surface							
	Coverage	2.95	3.00	3.05	3.55	4.04	4.53	5.00
Liberty	Population / square mile	100	97	105	109	114	119	124
	% impervious Surface							
	Coverage	2.87	2.83	2.95	3.02	3.10	3.18	3.26
Long	Population / square mile	28	28	31	38	46	53	60
	% impervious Surface							
	Coverage	1.71	1.71	1.76	1.87	2.00	2.11	2.23
McIntosh	Population / square mile	20	20	21	24	26	29	32
	% impervious Surface							
	Coverage	1.58	1.58	1.59	1.64	1.68	1.72	1.77
Watershed Average								
Ogeechee Coastal	Population / square mile	117	119	121	135	150	164	179
	% impervious Surface							
	Coverage	3.13	3.15	3.18	3.41	3.64	3.87	4.10

Table 10. Projected Population Growths and Associated Approximate Impervious Surface Increases
Altamaha - HUC 03070106

Appling	Population / square mile	35	35	36	38	41	43	46
	% impervious Surface Coverage	1.82	1.82	1.84	1.87	1.92	1.95	2.00
Evans	Population / square mile	61	62	65	74	84	93	102
	% impervious Surface Coverage	2.24	2.26	2.31	2.46	2.62	2.76	2.91
Glynn	Population / square mile	128	130	129	141	152	164	175
	% impervious Surface Coverage	3.32	3.36	3.34	3.53	3.71	3.90	4.07
Jeff Davis	Population / square mile	40	40	40	42	44	47	49
	% impervious Surface Coverage	1.90	1.90	1.90	1.94	1.97	2.02	2.05
Long	Population / square mile	28	28	31	38	46	53	60
	% impervious Surface Coverage	1.71	1.71	1.76	1.87	2.00	2.11	2.23
McIntosh	Population / square mile	20	20	21	24	26	29	32
	% impervious Surface Coverage	1.58	1.58	1.59	1.64	1.68	1.72	1.77
Montgomery	Population / square mile	36	36	38	42	45	49	53
	% impervious Surface Coverage	1.84	1.84	1.87	1.94	1.98	2.05	2.11
Tattnall	Population / square mile	47	48	50	57	63	70	76
	% impervious Surface Coverage	2.02	2.03	2.07	2.18	2.28	2.39	2.49
Toombs	Population / square mile	75	76	76	81	87	92	97
	% impervious Surface Coverage	2.47	2.49	2.49	2.57	2.67	2.75	2.83
Wayne	Population / square mile	45	45	46	52	58	63	69
	% impervious Surface Coverage	1.98	1.98	2.00	2.10	2.20	2.28	2.37
Watershed Averages								
Altamaha	Population / square mile	52	52	53	59	65	70	76
	% impervious Surface Coverage	2.09	2.10	2.12	2.21	2.30	2.39	2.48

Summary: This effect, when combined with other projects in the geographical area of influence, does have the potential to result in adverse cumulative impacts; however, it is expected that future projects would be implemented as follows: projects will use erosion control measures, silt fencing, and other BMPs; sufficient storm water management structures will be constructed as part of new construction; erosion and sedimentation control plans will be filed in accordance with Georgia's Sedimentation Pollution Control Act; and all projects will be undertaken in accordance with federal, state, and local laws.

Fort Stewart's role in general and project-specific oversight to ensure compliance with environmental legislation and the overall health of the local ecosystem have certainly played a role in mitigating adverse impacts to water quality. Also, the use of this large (~ 280,000 acres) area of land for military training has and will continue to ensure that the vast majority of the Installation remains managed wilderness. This allows natural processes to operate in support of water quality to a degree not seen in many surrounding areas which have experienced a great deal of development, and is the primary contributor to good water quality relative to those areas. Also, it must be noted that many projects related to military training (ex: firing ranges) do not feature impervious surfaces to the same degree as many civilian and private projects, and will not experience human activity and traffic of the same frequency and intensity, which might otherwise worsen local water quality. Furthermore, through the oversight of Environmental Compliance Officers, Army units self-monitor their training activities to avoid and minimize potentially harmful activities. A 1999 water quality survey performed by Fort Stewart determined that the quality of water leaving Fort Stewart's geographic boundaries was of equal or better quality than that which entered the Installation.

In view of the above, the USACE determined that the proposed project, with proposed special permit conditions, would have minimal impacts on water quality when considered alone or in concert with the other past, present and reasonably foreseeable future projects in the basin.

3. Aquatic Species: Permitted impacts to wetlands and water quality as discussed above have affected fish and other aquatic species such as mussels and aquatic insects.

The proposed project would not result in a direct adverse impact to any stream or river, or to aquatic species in the waterways. Rather, the project would result in an unavoidable impact to 26.9 acres of wetland, and a loss of the aquatic habitat function provided by these wetlands. However, this project-related wetland loss would be minor when considered cumulatively with

all other past and planned wetland losses discussed above. In addition, the applicant's proposed wetland mitigation plan would help to offset the aquatic habitat function loss that would result from this project. Furthermore, Fort Stewart Fish & Wildlife monitors and maintains the quality of Fort Stewart aquatic habitats as part of their fisheries program.

Overall, the proposed projects will not have a significant impact on Fort Stewart aquatic habitats and species.

4. Compensatory Mitigation: As defined in the NEPA regulations, compensatory mitigation is "*compensation for the impact by replacing or providing substitute resources or environments*" (40 C.F.R. Part 1508.20). The Installation utilized the Compensatory Mitigation Rule (33 CFR Part 332) when developing its mitigation plan for the proposed FY11 Multipurpose Machine Gun Range, FY11 Infantry Platoon Battle Course, FY13 Qualification Training Range, and the FY13 Digital Multipurpose Training Range. For projects beyond FY 2011, Fort Stewart has not precluded the use of other acceptable compensatory mitigation alternatives (provided through mitigation banks or in-lieu fee programs). Similar to the process outlined in the Compensatory Mitigation Rule, the Installation's standard procurement processes conducts market research in accordance with the Federal Acquisition Regulation. This research requirement as it relates to contracting of off-post wetland credit purchases includes evaluating the current market and availability of primary and secondary service area mitigation credits. This process will also be implemented when seeking mitigation options for ranges beyond FY11.

Proposed project: The proposed project supporting military training will adversely impact 26.7 acres of jurisdictional wetland. To mitigate for these impacts the applicant would purchase 216.27 mitigation credits from a USACE approved mitigation bank that services the project area. Additionally, some small projects will be mitigated through debits from the Installation's on-post wetland mitigation bank. As such, any adverse impacts to wetlands and other waters of the U.S. caused by this project would be offset by the proposed mitigation.

Summary: The main public detriment that would result from this project would be the loss of 26.7 acres of jurisdictional wetlands. Many of the wetland functions and values important to the public, such as flood attenuation, sediment retention, fish and wildlife habitat, and others, would be replaced by the applicant's mitigation plan. Additionally, Fort Stewart's past mitigation efforts (approximately 3,230 acres) have adequately offset impacts within the boundaries Fort Stewart. Mitigation for the current projects will be offset through additional mitigation efforts,

including the use of off-site USACE approved wetland mitigation banks. The mitigation plan would also provide adequate compensation for the impacted wetlands through the implementation of wetland restoration, creation, enhancement and preservation. The proposed projects would not impact federal or state protected species or critical habitat. Cultural resources have been considered and it has been determined that they would not be impacted. Overall, the public benefits of the proposed project would outweigh the public detriments.

In view of the above, the USACE has determined that the proposed project, with proposed special permit conditions, would not have a significant impact on wetlands and/or other waters of the U.S. when considered alone or in concert with the other past, present and reasonably foreseeable future projects in the Fort Stewart watersheds.

F. SECONDARY/INDIRECT IMPACTS: See Section E above and the Range and Garrison Construction Environmental Impact Statement, prepared by Fort Stewart.

G. IRREVERSIBLE AND IRRETRIEVABLE RESOURCE COMMITMENTS: Authorization of the applicant's preferred alternative, or any other build alternative, could result in an irreversible and irretrievable commitment of a range of natural, physical, human and fiscal resources. The fossil fuels, labor and construction materials that would be expended, if the project is constructed, are generally not considered irretrievable resources. In addition, these resources are not in short supply and their use would not have an adverse effect upon their continued availability.

H. EFFECT ON FEDERAL PROJECTS: We have determined the proposed activity would not have an adverse effect on any Federal Project (33 CFR 320.4(g)).

PART V - PERMIT ACTION ALTERNATIVES

A. TO ISSUE THE PERMIT IN ACCORDANCE WITH THE PLANS SUBMITTED BY THE APPLICANT: This course of action by itself would be inappropriate because it does not include provision for special conditions (See D. below).

B. TO DENY THE REQUEST FOR A PERMIT: Denial of the permit would not be an appropriate course of action. The proposed activity would not have significant adverse effects

on navigation, the environment or other public interest factors.

C. TO ISSUE THE PERMIT AFTER SUBMITTAL OF MODIFIED PLANS BY THE APPLICANT WITH SPECIAL CONDITIONS: This course of action would not be warranted. Our review of the applicant's plans and alternatives showed the applicant's proposed activity to be the most practicable way to accomplish the applicant's overall purpose.

D. TO ISSUE THE PERMIT IN ACCORDANCE WITH THE PLANS SUBMITTED BY THE APPLICANT WITH SPECIAL CONDITIONS: This would be the appropriate course of action to follow. In order to protect the public interest the following special conditions would be placed on any permit issued:

1. All dredged or borrowed material used as fill on this project will be from clean, uncontaminated sources and free from cultural resources.

2. That no construction activity or stockpiling will occur in waters of the United States, including wetland areas, outside of the areas authorized for filling under this permit.

3. Prior to the commencement of construction activities for this project, the limits of the proposed fill areas in jurisdictional waters shall be clearly flagged and staked by you and/or your contractors. All construction personnel shall be shown the location(s) of all wetland and/or stream areas outside of the construction area to prevent encroachment from heavy equipment into these areas.

4. Borrow site or sites for stockpiling fill dirt shall be prohibited within 200 feet of streambanks, 50 feet of wetlands and open waters or elsewhere runoff from the site would increase sedimentation in waters of the United States unless specifically authorized by this permit. Normal grading activities such as cutting and filling within 200 feet of streams or 50 feet of wetlands/open waters are authorized.

5. Construction debris, liquid concrete, old riprap, old support materials, or other litter shall not be placed in streams or in areas where migration into streams and/or wetlands could reasonably be expected.

6. Staging areas and equipment maintenance areas will be located at least 200 feet from streambanks to minimize the potential for wash water, petroleum products, or other contaminants

from construction equipment entering the streams.

7. The permittee shall ensure that the project's master drainage plan is designed and implemented to avoid inadvertent drainage of wetlands and inadvertent water diversion resulting in a reduction of hydrology in wetlands. The permittee shall also ensure that secondary road ditches and/or small after-project drainage ditches do not inadvertently impact wetlands or waters of the US.

8. The permittee shall minimize bank erosion and sedimentation in construction areas by utilizing BMPs for stream corridors, installing and maintaining significant erosion and sediment control measures, and providing daily reviews of construction and stream protection methods. Check dams and riprap placed in streams and wetlands as erosion control measures are considered a fill and not authorized under this permit unless they were specifically authorized by this permit.

9. All work conducted under this permit shall be located, outlined, designed, constructed and operated in accordance with the minimal requirements as contained in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. Utilization of plans and specifications as contained in "Manual for Erosion and Sediment Control, (Latest Edition)," published by the Georgia Soil and Water Conservation Commission or their equivalent will aid in achieving compliance with the aforementioned minimal requirements.

10. You shall obtain and comply with all appropriate Federal, state, and local authorizations required for this type of activity. A stream buffer variance may be required. Variances are issued by the Director of the Georgia Environmental Protection Division (EPD), as defined in the Georgia Erosion and Sedimentation Control Act of 1975, as amended. It is our understanding that you may obtain information concerning variances at the Georgia EPD's web site at www.gaepd.org or by contacting the Watershed Protection Branch at (404) 675-6240.

11. If you or your contractors discover any federally listed threatened or endangered species and/or their habitat while accomplishing the activities authorized by this permit, you must immediately STOP work in the area and notify the issuing office of what you have found. We will initiate the Federal and state coordination required to determine if the species and/or habitat warrant further consultation with the USFWS.

12. Prior to the commencement of construction activities for this activity, the permittee

shall insure that this project complies with all applicable rules, requirements, and/or regulations of the FEMA and/or the Georgia Floodplain Management Office with regard to construction activities in designated floodplains and/or floodways prior to commencement of work activity, to include revisions to the National Flood Insurance Program maps if required.

13. Prior to the commencement of any work in jurisdictional waters of the United States for this activity, you will purchase wetland mitigation credits from an approved wetland mitigation bank. You or the mitigation bank sponsor must provide this office with documentation of this purchase before any work may commence. The notice should reference the USACE file number assigned to this project.

14. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the NRHP.

15. The permittee, US Army Fort Stewart, is the lead federal agency for this proposed action. The permittee shall meet all lead federal agency responsibilities pursuant to Section 7 of the Endangered Species Act, prior to any work occurring in waters of the US subject to the jurisdiction of the USACE.

16. The permittee, US Army Fort Stewart, is the lead federal agency for this proposed action. Fort Stewart shall meet all lead federal agency responsibilities pursuant to Section 106 of the National Historic Preservation Act, prior to any work occurring in waters of the US subject to the jurisdiction of the USACE.

17. The site design for this project has not been finalized. Authorized wetland impacts are based on a standard range design. Prior to conducting any work in wetlands on this project site, the permittee shall submit final site development plans to the USACE for review and approval. No work in wetlands can occur until the USACE has reviewed and approved the final plan in writing; this concurrence letter needs to document that the 404(b)(1) process has been adequately demonstrated. It is anticipated that once final design is completed, there will be a minor reduction in the amount of wetland area that will be impacted by the project. This anticipated change in the footprint of authorized wetland impact is authorized under this permit and modification of the permit will not be required for this change in site design.

18. If a conditioned Water Quality Certification has been issued for your project, you must comply with conditions specified in the certification as Special Conditions to this permit.

PART VI – COURSE OF ACTION FIGURES



Figure Redacted

USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
GLENNVILLE NE 7.5 MINUTE QUADRANGLE



VICINITY MAP - PREFERRED COA

1" = 4,000'
0 2,000 4,000 8,000 Feet

PROJECT: QTR - QUALIFICATION
TRAINING RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

FIGURE: 1 OF 5

DATE: NOVEMBER 2009



Figure Redacted

USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
GLENNVILLE NE 7.5 MINUTE QUADRANGLE



VICINITY MAP - CONSIDERED COAS

1" = 4,000'
0 2,000 4,000 8,000 Feet

PROJECT: QTR - QUALIFICATION
TRAINING RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

FIGURE: 2 OF 5

DATE: NOVEMBER 2009

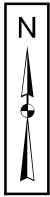


Figure Redacted

USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
GLENNVILLE NE 7.5 MINUTE QUADRANGLE



LOCATION MAP - PREFERRED COA

1" = 2,000'
0 1,000 2,000 4,000 Feet

PROJECT: QTR - QUALIFICATION
TRAINING RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

FIGURE: 3 OF 5

DATE: NOVEMBER 2009



Figure Redacted

USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
GLENNVILLE NE 7.5 MINUTE QUADRANGLE



LOCATION MAP - COA 2

1" = 2,000'

0 1,000 2,000 4,000 Feet

PROJECT: QTR - QUALIFICATION
TRAINING RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

FIGURE: 4 OF 5

DATE: NOVEMBER 2009



Figure Redacted

USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
GLENNVILLE NE 7.5 MINUTE QUADRANGLE



LOCATION MAP - COA 3

1" = 2,000'
0 1,000 2,000 4,000 Feet

PROJECT: QTR - QUALIFICATION
TRAINING RANGE

COUNTY: LIBERTY

SURVEY DATUM: UTM

FIGURE: 5 OF 5

DATE: NOVEMBER 2009

PART VII – PERMIT FIGURES



Figure Redacted

USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE
GLENNVILLE NE 7.5 MINUTE QUADRANGLE

PURPOSE: CONSTRUCT, OPERATE,
AND MAINTAIN A QUALIFICATION
TRAINING RANGE TO TRAIN
SOLDIERS IN COMBAT PROFICIENCY

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

PROJECT VICINITY MAP

1" = 4,000'

0 2,000 4,000 8,000 Feet

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: TRIBUTARY
OF TAYLORS CREEK

COUNTY: LIBERTY

FIGURE: 1 OF 6

DATE: NOVEMBER 2009



Figure Redacted

USGS TOPOGRAPHIC MAPS
TAYLORS CREEK 7.5 MINUTE QUADRANGLE

PURPOSE: CONSTRUCT, OPERATE,
AND MAINTAIN A QUALIFICATION
TRAINING RANGE TO TRAIN
SOLDIERS IN COMBAT PROFICIENCY

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

PROJECT LOCATION MAP

1" = 1,000'

0 500 1,000 2,000 Feet

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: TRIBUTARY
OF TAYLORS CREEK

COUNTY: LIBERTY

FIGURE: 2 OF 6

DATE: NOVEMBER 2009



Figure Redacted

LEGEND



PROJECT BOUNDARY



JURISDICTIONAL WETLAND



NON-JURISDICTIONAL WETLAND

PURPOSE: CONSTRUCT, OPERATE,
AND MAINTAIN A QUALIFICATION
TRAINING RANGE TO TRAIN
SOLDIERS IN COMBAT PROFICIENCY

ADJACENT PROPERTY OWNERS:
1. SEE ATTACHED

SURVEY DATUM: UTM

EXISTING CONDITIONS

1" = 625'

0 312.5 625 1,250 Feet

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: TRIBUTARY
OF TAYLORS CREEK

COUNTY: LIBERTY

FIGURE: 3 OF 6

DATE: NOVEMBER 2009

Figure Redacted

Figure Redacted

PURPOSE: CONSTRUCT, OPERATE, AND MAINTAIN A QUALIFICATION TRAINING RANGE TO TRAIN SOLDIERS IN COMBAT PROFICIENCY

ADJACENT PROPERTY OWNERS:

1. SEE ATTACHED

SURVEY DATUM: UTM

CROSS-SECTION

NOT TO SCALE

APPLICANT:
FORT STEWART DPW

PROPOSED: WETLAND FILL

NEAREST WATERBODY: TRIBUTARY OF TAYLORS CREEK

COUNTY: LIBERTY

FIGURE: 5 OF 6

DATE: NOVEMBER 2009

PART VII – PERMIT FIGURES

Master List of Past, Present, and Future Actions

Project or Activity	Time Frame	Spatial Extent (if known)
FSGA (then known as Camp Stewart) established as an anti-aircraft training base, and a number of small arms and artillery ranges were constructed.	1940-1941	
Camp Stewart reopens as the Third Army Antiaircraft Artillery Training Camp at the onset of the Korean War.	1950	
The Army authorized construction of tank firing ranges and maneuver areas and the following year the base was renamed Camp Stewart Antiaircraft Artillery and Tank Training Center.	1953	
Army designated base as Fort Stewart, a permanent Installation.	1956	280,000 acres
Fort Stewart became the Advanced Flight Training Center (AFTC), part of the Army's Aviation School, based out of Fort Rucker, Alabama. In conjunction with HAAF, acquired by the Army in 1967, the AFTC trained both fixed and rotary wing pilots in advanced flight, gunnery, and tactical courses. Many of the smaller cantonment areas originate from this time, including Evans Field and the NCO Academy (originally TAC X). Liberty Field was also completely redeveloped in support of fixed wing training, and renamed Wright Army Airfield.	1966	
Training areas and ranges greatly expanded, along with massive building programs constructing permanent barracks, motorpools, family housing, community, and recreation facilities. In 1974 base became home to the 24 th Infantry Division [reflagged in 1996 as the Third Infantry Division (Mechanized)].	1970s – 1980s	
Brigade Marshalling Area and Tank Trail	1993	
Tank Commanders Proficiency Course, FS 40 Road bridge, and Railroad pass tracks	1994	
Training Area A-11 Wetlands Restoration	1996	
Canoochee Creek Reservoir ("Pond 4") Mitigation bank established.	2000	
Multipurpose Training Range	2000	
15 th Street Access Control Point	2001	
Convoy Live Fire Ranges	2004	
4 th Unit of Action (now 2 nd BCT) Facilities	2004	
Bridge 30/E12	2005	

Convoy Live Fire Road Widening	2006	
Digital Multipurpose Range Complex	2007	
Strum Bay Restoration	2008	
Fort Stewart WWII Wood Buildings Demolition	1992-2008	958,156 SF
Fort Stewart WWII Wood Buildings Demolition	2009-2014	45,928 SF
Fort Stewart WWII Wood Buildings Demolition	Beyond 2014	122,683 SF
Cantonment construction and expansion	Past-present	7,567 acres
Construction activities to support garrison and training functions (including tenant unit mobilizations) and projects that have already been analyzed by NEPA (see Table 5-X).	2008-present	
New and ongoing construction associated with the Installation Priority Board (IPB) (see Table 5-X for FY10 IPB projects list):	2010	
FY11-FY14 Range, Cantonment, and Traffic Improvement construction.	Proposed Action	
New and continuous training and major construction (see Table 5-X for complete project list). Training would continue to support Third Infantry Division training as required by Command to include live-fire, mounted, and dismounted training; Tenant Unit Mobilizations, and UAS training.	Future	FSGA Range and Maneuver Areas
Arrival of the EN BN (see Table 5-X for population totals)	2010	Up to 50-acre expansion of FSGA cantonment area; 417 Soldiers
Arrival of the Warrior UAS Unit (see Table 5-X for population totals)	2012	Up to 130-acre expansion of WAAF; 17 Soldiers
ITAM Projects, including low water crossings	Ongoing	
Range and Training Land Assessment Monitoring	Ongoing	
FSGA ICRMP and PA	2001-future	
FSGA INRMP and ESMP	1997-future	FSGA Range and Maneuver Areas for the purposes of timber harvesting, mowing, prescribed burning, data collection, etc.

2008-Present Projects and Projects with NEPA completion

Fiscal Year	Project	NEPA Type
2008	Stockton Circle upgrades near existing PX.	REC, project was categorically excluded using C-1.
2008	Modular Child Development Centers (CDCs) near Fort Stewart housing areas.	REC, projects were categorically excluded using C-1.
2008	Holbrook recreation area RV storage expansion and pet boarding facility.	REC, project were categorically excluded using C-1.
2008	Unaccompanied Personnel Housing near Fort Stewart's housing area.	EA that covered construction and operation of the facility.
2008	Echelons Above Brigade (EAB) Barracks to support QM and EOD units.	REC, project was categorically excluded using C-1. Project was sited to avoid impacts to sensitive environmental resources.
2008	Warrior Transition Complex in Fort Stewart's cantonment area.	REC, project was categorically excluded using C-1 and C-2
2009	Reuse Water Pipeline (Purple Pipe) from City of Hinesville to Fort Stewart's Central Energy Plant and Golf Course.	REC, project was categorically excluded using C-1.
2009	QM and HR Tactical Equipment Maintenance Facilities located near Fort Stewart's existing motorpool complex.	EA that covered construction, operation, and wetland mitigation and permitting.
2009	4IBCT Complex in B-5.	EA that covered construction, operation, wetland mitigation and permitting, and impacts to RCW clusters and habitat.
2009	Recycling Center near existing processing station.	REC, project was categorically excluded using C-1.
2009	Fort Stewart Fire Station off 15 th Street.	REC, project was categorically excluded using C-1.
2009	WAAF Fire Station.	REC, project was categorically excluded using C-1.
2009	Replace Chilled Water Distribution System at Fort Stewart's Central Energy Plant.	REC, project was categorically excluded using C-2.

2009	Renovation of Army Lodging building 4950.	REC completed to cover asbestos abatement requirements.
2009	Renovation of Stewart Lanes Bowling Alley.	REC completed to cover asbestos abatement requirements.
2009	Improvised Explosive Device (IED) Course at Fort Stewart.	REC, project was categorically excluded using C-1. Facades and overpasses were constructed to avoid sensitive resources.
2009	56 th Infantry Brigade Combat Team Mobilization at Fort Stewart	REC, project was categorically excluded using I-3, Training and Testing.
2009	Army Community Services building.	REC, project was categorically excluded using C-1.
2010	NCO Academy Tank Trail in Training Area F-20.	EA that covered construction, operation, wetland permitting, and impacts to RCW habitat.
2010	Liberty County Middle School on 15 th Street.	EA that covered construction, operation, wetland mitigation and permitting, and impacts to RCW habitat.
2010	DoD Elementary School near existing housing area in Fort Stewart's cantonment area.	EA that covered construction of greater than 5 acres of new disturbance.
2010	Winn Army Community Hospital addition and alterations.	REC, project was categorically excluded using C-1.
2010	Sniper Field Fire Range in Delta Small Arms Impact Area.	EA that covered construction, operation, wetland mitigation and permitting, and impacts to RCW habitat.
2010	Mobile Vehicle and Cargo Inspection System relocation to HWY 119. Project is also on FY10 IPB list.	EA that covered construction, operation, and impacts to RCW habitat.
2010	Range Control Operations Complex located near Holbrook Pond. Project is also on FY10 IPB list.	EA that covered construction, operation, and impacts to RCW habitat. Wetland impacts will likely be avoided during design.
2010	Name Brand Casual Dining Facilities for Fort Stewart.	REC, project was categorically excluded using C-1. ECP and ROA-C completed for lease.

2011	Training Support Center near existing Range Control facilities.	REC, project was categorically excluded using C-1 and will not have cumulative impacts. Project was sited to avoid sensitive environmental resources.
2012	Battle Command Training Center (BCTC) at Evans Army Airfield. Project was originally an FY10 project.	EA that covered construction, operation, potential wetland impacts and impacts to RCW habitat.
2012	2 nd BCT Physical Fitness Facility near existing 2 nd BCT complex.	REC, project was categorically excluded using C-1 and will not have cumulative impacts. Project was sited to avoid sensitive environmental resources.
2013	Soldier Service Center Addition in Fort Stewart's cantonment area.	REC, project was categorically excluded using C-1. Project will not impact any sensitive resources.
2013	Kennel Complex at WAAF	REC, project was categorically excluded using C-1. Project will not impact any sensitive resources.
2014	Hero Road Expansion in Fort Stewart's cantonment area.	REC, project was categorically excluded using C-1.

FY10 Installation Priority Board (IPB) Projects

FY10 IPB PRI	QMB PRI	QMB ACTION	Project Description	Status	OMNI	STRATEGIC FOCUS
1	1	PP&R 2.3.1.1.13	Motor Pool Enhancement Project	Motorpools (priorities 1-5), VMF renovation requirements (SRM) at FS - Bldg 1201 4th BCT 3/7 IN BN, PN 56284 LR, Bldg 1220 4th BCT 3/7 IN BN, PN 56271 LR, Bldg 1259 4th BCT 3/7 IN BN, PN 56284 LR, Bldg 1840 3rd SUST 135 QM CO PETRO, Bldg 1245 1st BCT 6/9 AR BN FY 09 VMF renovations: Bldg 1205 awarded 11 Aug. Bldg 1208 awarded 19 Aug. Bldg 1209, 1211, 1215 in DOC	120	Life, Health, and Safety; Impacts Facility ISR ratings, Support ARFORGEN.
2	1	S&S 5.1.3.16.2	Repair of Fire Hydrants	YB-00153-9J, DPW to submit action to hire A-76 contractor personnel to complete non-critical hydrant repairs.	114	Life/Health/Safety
3	1	TS 1.1.1.6.18	Construct Range Branch Operations and Training Facility.	IJO YG9-09-9J. Facility to be located in Training Area A-17.	105	A key facility in providing operational and training support capabilities for our customers. Safety issue.
4	1	WB 3.2.6.15.9	Construct Marne Admin Law and Tax Center.	DD-015-9J.	105	Swing space. Customer Service.
5	3	S&S 5.1.4.2.11	Relocate Access Control Point to HWY 119 (Middle School)	YB-001549-J	105	Life/Health/Safety. Relocation of the MVACIS Facility
6	1	OR 4.5.1.1.13	Construct facility to house Residential Community Initiative (RCI) personnel.	RCI personnel were displaced when their WWII wood facility was taken down. They currently occupy space in a Balfour Beatty facility that is scheduled to be taken down.	51	Reduce WWII Wood Facilities.
7	2	PP&R 2.4.3.5.6	Correct QAE Taxiway Sign findings	IJO# JA-17-8J, JA-15-8J, JA-16- 8J	36	Deployment readiness, Regulatory, Safety Management.
8	2	TS 1.3.3.4.2	Renovate Evans Dining Facility.	IJO YGB 5-5J.	171	Impact on Military Training and Safety. ARFORGEN.
9	4	S&S 5.1.3.12.8	Renovation/expansion of the Fire Station in WAAF	IJO Y.B. -001529J	105	Renovation to house personnel expansion. Life/Health/Safety

10	5	PP&R 2.3.4.2.25	Construct Army Combat Uniform ACU / Rapid Fielding Initiative RFI facility	IJO# YG-0011-8J Construct a facility for RFI mission to replace facility at WAAF	75	Division Readiness, ARFORGEN.
11	2	S&S 5.1.3.17.2	Upgrade of the transceiver radio to narrowband		126	Army Mandated
12	2	OR 4.4.5.1.5	Construct New Multimedia Visual Information Center (MVIC).	Leave DAPS in Building 136. Eliminates Temp Facilities Building 136 and 137 (doublewide trailer), two storage shed sitting in the shadow of the Main Post Chapel.	105	Grow the Army, Quality of Life, Customer Service.
13	2	WB 3.4.1.4.47	Construct Outdoor Rec Bldg – HAAF	FA-01-8J, In design at COE.	66	Army Family Covenant
14	3	PP&R 2.3.4.2.28	Security Cage in DOL Bldg 2916	IJO# S6S-16-9J Storage Issue of Securing Equipment	132	Sensitive Storage Accountability Issues, ARFORGEN.
15	3	TS 1.2.3.4.22	Construct Urban Compound.	YG9-70-7J, vicinity Obstacle course, PAT recommendation.	78	CLOSE-IN Training. Impact on Military Training and Readiness. ARFORGEN.
16	3	WB 3.4.1.4.54	Renovate Caro Fitness Center & turn Basketball Court into Combative Room	SF-70-8J Expecting stimulus dollars for renovation but not for combative room	66	Army Family Covenant / Improves Appearance
17	4	PP&R 2.3.1.2.11	DOL Small Arms Repair Facility, Hunter AAF. Actions were dropped from original contract	IJO# DB-002-9J, DB-003-9J Install security fence and pour crush and run. Actions were dropped from original contract	102	Impact RESET and Readiness. ARFORGEN
18	4	TS 1.2.3.5.6	Construct Urban Town #1 (St Lo).	YGB 5-5J. Design complete.	78	Impact on Military Training and Readiness. ARFORGEN.
19	4	WB 3.4.6.10.1	Rebuild Vale Chapel (Replaces the action to renovate Vale Chapel Youth Ministry)	SC-14-7J, 5,000 sq ft. In design at COE.	45	Army Family Covenant
20	5	S&S 5.2.1.1.49	Construct Running Path - HAAF	C3-0029-9J	117	Life/Health/Safety. Running path along North Lightning Road.
21	5	TS 1.3.2.4.11	Construct CFFT and EST Facility Complex, HAAF.	JD-2-6J, Design complete.	105	Impact on Military Training and Readiness. ARFORGEN.
22	6	TS 1.1.1.9.1	Purchase Wetland Mitigation Credits in support of FY11 Machinegun Range construction.	Estimated costs for wetland credits is needed to mitigate the impact of no credits for future range development.	183	131 funds. ARFORGEN. Increase Wetland bank to accommodate ranges in the FYDP. Will run out of credits in FY12 when the 50 CAL Range is completed.

23	6	PP&R 2.4.1.1.10	Reader Boards for the Truscott Air Terminal	IJO# JA-06-8J Mass notification system for DAACG	93	Mission Readiness
24	6	WB 3.4.1.4.43	Renovate Adult Sports Complex Fields	SF-33-8J	45	Army Family Covenant
25	6	S&S 5.1.2.14.1	Expansion of detention cells FS/HAAF	YB-00031-9J	114	Expansion of detention cells to add more square footage to existing capabilities.
26	7	TS 1.2.7.7.9	Construct Tactical UAS Hanger at Evans AAF.	YG9-16-9J.	132	PAT Team recommendation. Eliminates transportation mishaps and provides shelter for storage and maintenance. ARFORGEN.
27	7	PP&R 2.4.1.1.11	Connect HVAC to additional generator at Truscott Air Terminal	IJO# JA-11-6J (backup power)	69	Crisis Support (backup power) Life/Health/Safety
28	7	WB 3.4.1.15.15	Expansion of Rocky's Parking Lot by 50 spaces	SF 100-7, Expansion of lot for patrons. Ready by Year End for funding	48	Army Family Covenant/ Increases access
29	7	S&S 5.1.1.1.19	Relocate non decal vehicle access at FS Gate 1	IJO# YB-00149-9J	33	Quality of Life. Improves access for vehicles with decals.
30	8	TS 1.1.3.6.6	Construct tower, run utilities, make improvements to SA-N	YG9-61-8J	75	CLOSE-IN Training opportunity. Impact on Readiness. ARFORGEN
31	8	PP&R 2.2.3.5.4	Recoat and install security lights at the TMP Hunter AAF	IJO# DC-043-8J Action initiated to satisfy Safety infraction.	72	Safety/Security
32	8	WB 3.4.1.4.72	Replace Wooden Floor at Newman Gym	SF-00202	60	Customer Satisfaction

33	8	S&S 5.1.2.12.5	Construct additional Law Enforcement admin facility vic bldg 280	IJO# YB-00031-7J Design complete ???	96	Life/Health/Safety
34	9	S&S 5.2.1.1.25	Construct new Safety Center Building	IJO# SQ-6-7J	102	Operational readiness, safety. Renovate safety office with classrooms.
35	9	TS 1.2.3.5.10	Construct Urban Town #6 (Moody)	YG9-27-8J Design Funded	78	Impact on Military Training and Readiness. ARFORGEN.
36	9	PP&R 2.2.3.5.5	Expand TMP parking area at Fort Stewart	IJO# S3S-044-8J This action will satisfy a security issue addressed by DES, Physical Security.	72	Grow the Army, ARFORGEN
37	9	WB 3.7.1.10	Construct an FRC Center adjacent to ACS	SF 00309 9J	42	Army Family Covenant
38	10	S&S 5.2.1.1.48	Construct new safety training facility - HAAF	IJO # FM-002--9J	156	Operational readiness, safety. Dedicated Facility will address ASTC training availability shortfalls at HAAF.
39	10	TS 1.1.3.6.4	Construct tower, run utilities, make improvements to SA-O	YG9-62-8J	75	Impact on Readiness. ARFORGEN
40	10	PP&R 2.3.4.3.1 & 2.3.4.3.7	Renovate Bldg 1036 @ HAAF to accommodate Laundry Pick-Up Point, Sew Shop, renovate CIF and add 50 parking spaces	IJO# DB-66-4J Renovate Bldg 1036, to relocate laundry pickup point, Sew Shop and update CIF IJO# DD-034-8J Increase parking spaces at Bldg 1036	57	Grow the Army, Customer Service.
41	10	WB 3.1.3.3	Repave Area parking around Ft. Stewart Logdging #4950	S3 00005	21	Army Family Covenant
42	11	WB 3.4.1.4.77	Replace Bleachers at Newman	SF-00219	99	Customer Satisfaction

43	11	PP&R 2.3.4.3.9	AVN BDE Open Shed Storage Facility (Pole Barn)	IJO# LB-08-8J	48	Mission Readiness.
44	11	S&S 5.1.2.12.17	Construct DES Motor park.	IJO# YB-00013-9J, Patrol Vehicles & Dispatching Office between Bldg 283 and Gate 1.	27	Operational Readiness, maintenance of a Safe/Secure environment.
45	12	PP&R 2.3.4.2.29	Repair ASP road leading up to the Warehouse	IJO# S6S-71-7J, \$30K design cost funded	99	Training and Deployment Readiness, ARFORGEN.
46	12	WB 3.4.1.4.71	Add an additional sports field at Sports Complex (HAAF)	TBD	21	Increases efficiency and meet demand
47	13	PP&R 2.3.4.2.30	Concrete Slab between Bldg 1146 & Bldg 1150 (Hazmart / Bulk Class III)	IJO# DD-15-9J	54	Grow the Army, Support ARFORGEN.
48	13	WB 3.4.1.4	Repave RV parking at Lott's Island	IJO# FA 00126 8J	21	Army Family Covenant
49	14	PP&R 2.2.3.5.6	Construct TMP office / drivers testing facility	IJO# S3S-045-8J	117	Grow the Army, Division Readiness.
50	14	WB 3.4.1.4.59	Repave Circle/Road leading into Lott's Island	IJO# FA 0012 78 J	21	Army Family Covenant
51	15	PP&R 2.3.1.1.16	Scrape and Paint Bldg 1170, DOL Maintenance Facility	IJO# S6S-38-5J Design status 100% complete	87	Life/Health/Safety.
52	15	WB 3.5.1.7.12	Construct Permanent Latrine Facilities at Marne Gardens & Cottrell Field	Design and Build	60	Quality of Life, Army Family Covenant
53	16	PP&R 2.3.4.3.10	Crush and Run DOL Storage yard Bldg 1036 – Hunter AAF	IJO# DD-118-8J	99	Grow the Army, ARFORGEN, Customer Service
54	16	WB 3.5.1.7.5	Renovate Bldg #623	WG-33-8J, In design at COE.	89	Increases availability of Admin Space
55	17	WB 3.5.1.7.6	Renovate Bldg #620	WG-34-8J, Scheduled after bldg #623, Will not be funded until late FY09	81	Increases Availability Of Admin Space

56	17	PP&R 2.1.2.1.21	Construct a Container Handling Facility office	IJO# S3S-039-8J	75	Division Readiness
57	18	PP&R 2.3.4.2.19	Construct a roof over the Residue Yard, Ammunition Supply Point (ASP), DOL	IJO# S6S-018-8J	84	Environmental Management
58	18	WB 3.4.6.1.7	Construct Chapel Annex for Admin Support	SC-1-6J, Site approved at Mar 06 Planning Board. In Design complete/ ready to be executed	54	Army Family Covenant
59	19	PP&R 2.5.2.1.2	Pave the Donovan Field Parking Lot	IJO# S6S-033-8J	114	Life/Health/Safety, Installation event support, improves mobility for handicap
60	20	PP&R 2.4.1.1.14	Install Backup Generator for Saber Hall	IJO# JA-05-9J	54	Deployment Readiness (backup power)
61	21	PP&R 2.4.1.1.13	Renovate Airfield Operations Facility, Bldg 1252, Hunter AAF	IJO# JA-0002-09	66	Life/Health/Safety, Deployment Readiness.
62	22	PP&R 2.3.4.2.22	Crush N Run Class VII Yard	IJO# S5S-35-8J	114	Grow the Army, ARFORGEN.
63	23	PP&R 2.3.1.1.22	Add rest room, break room, and office to Bldg 1065, DOL Maintenance	IJO# S6S-63-7J Union issue	72	Life/Health/Safety. Union Issues.
64	24	PP&R 2.4.3.5.10	Correct ERDC findings East side of POL Island	IJO# JA-20-8J T17B cost \$3.5m, A14B cost \$1.7m, T13B cost \$2.5m replace portion of T14B \$308K.	99	Regulatory, Safety Management.
65	25	PP&R 2.3.1.1.21	Build a Commo / NVD Repair Facility, DOL Maintenance Division	IJO# S5S-026-8J	72	Grow the Army, ARFORGEN.

66	26	PP&R 2.3.1.1.23	Construct Open Shed Storage Facility, DOL Maintenance Div	IJO# S5S-046-8J	66	Environmental Management.
67	27	PP&R 2.1.1.1.17	Deployment Assembly Area DAA	IJO# S3S-20-9J	126	Deployment Readiness, ARFORGEN
68	28	PP&R 2.3.1.1.24	Construct engine / transmission storage facility, DOL Maintenance Division	IJO# S6S-049-8J	48	Environmental Management
69	29	PP&R 2.2.2.4.11	Construct Parts Storage Facility for DOL Maintenance Division	IJO# S5S-040-8J Replace 2 sprung shelters	69	Grow the Army, ARFORGEN
70	30	PP&R 2.3.1.1.28	DOL Maintenance Generator / Small End Items Repair Facility	IJO# S5S-07-9J	54	ARFORGEN.
71	31	PP&R 2.3.4.3.3	Construct a Chemical Defense Equipment (CDE) Storage Facility, Hunter AAF	IJO# DD-032-8J	93	Division Readiness, ARFORGEN.
72	32	PP&R 2.3.1.1.12	Replace Paint Prep Booth (sprung shelter) with pre-engineered metal building, DOL Maintenance Division	IJO# S6S-04-6JRequirement identified and coordinating with AMC to fund	78	ARFORGEN.

Future Major Construction Projects

Fiscal Year	Project
2016	Multipurpose Machine Gun Range (#2)
2016	Infantry Squad Battle Course (#2)
2017	Light Demo Range
Long Range	Known Distance Range (#2)
Long Range	Digital Multipurpose Training Range (#2)