ATTACHMENT C – DESIGN REFINEMENTS SINCE THE FEIS

Introduction and Methodology

The environmental and socioeconomic impacts in the Final Environmental Impact Statement (FEIS) were based on conceptual engineering plans. The City of Alexandria and the Washington Metropolitan Transit Authority (WMATA), in coordination with the Federal Transit Administration (FTA), refined the conceptual engineering plans of the Preferred Alternative to respond to more detailed engineering and architectural design and to reduce environmental and socioeconomic impacts in coordination with the National Park Service (NPS). Some of the refinements presented in **Table C-1** below were considered prior to the publication of the FEIS and were presented at City of Alexandria public meetings during the spring of 2016 related to the station design and City planning and zoning approvals. However, the refinements were not incorporated into the FEIS due to the need to coordinate with the public and agencies and complete the environmental analysis. The current architectural design that incorporates the refinements is documented in the *City of Alexandria Potomac Yard Metro and Parks Staff Report on the Master Plan Amendment, Rezoning and Development Special Use Permits* and *Plans for the Station (June 2016)* which are provided as attachments to the Section 106 Memorandum of Agreement, which is included as **Attachment B** of this Record of Decision (ROD). The current engineering design that incorporates refinements to retaining walls and earthen berms along the eastern face of the station and realigned track is based on the July 2016 engineering plans.

The design refinements are entirely within the FEIS Limits of Disturbance (LOD). In some cases, the design refinements do not change the LOD because the FEIS delineated the LOD to include areas that could be impacted by different design options and refinements. The refinements include additional architectural detail, shifting the locations of an entrance pavilion and pedestrian bridge, changes to the hours of public access for the pedestrian bridge between Potomac Yard and the Potomac Greens neighborhood, and revision of designs for earthen berms/retaining walls on the east-facing side of the station. Anticipated changes in environmental impacts from the FEIS resulting from the design refinements are presented in **Table C-2** below.

Table C-1: Commitments and Mitigation Measures

#	Design Refinement	Reason for Refinement and Relevant Supporting Coordination	Context / Setting	Effect of Refinement (changes in LOD are described in comparison to FEIS LOD)
Station and Track Design				
1	Design of the east-facing side of the station and realigned track has been refined as a hybrid of the two design options for the Preferred Alternative, incorporating both earthen berms and some smaller retaining walls. • The earthen berm extends up to the level of the station access road at approximately 20'. Above the berm, the height of the exposed station wall below the track level is approximately 3'. • A retaining wall is provided below the level of station access road along a portion of the road near the middle of the station platform. The wall has a length of approximately 170' and a height of approximately 13'. • Under a portion of the realigned Metrorail track north of the station, a retaining wall is provided along the east-facing side. The wall has a length of approximately 400' and a maximum height of 12' in the middle that tapers down to 0' at its north and south ends.	Design refinement, incorporating more detailed architectural and engineering design, was conducted to support preparation of Design-Build specifications and City of Alexandria planning and zoning applications. The refinements were developed in coordination with representatives of NPS, the City of Alexandria, and WMATA. The purpose of the refinements was to provide a higher level of design to minimize visual and ground-level resource impacts to the GWMP and Greens Scenic Area easement.	The refinement occurs within the permanent impact area east of the existing Metrorail tracks and overall construction Limits of Disturbance (LOD) of the Preferred Alternative identified in the FEIS.	The refinement does not change the LOD as presented in the FEIS. The proposed changes are within the range of the two design options in terms of the maximum dimensions and general locations they present for retaining walls and earthen berms. No effects beyond those evaluated in the FEIS.
2	Architectural design of the station was further elaborated in detail. Required design elements for the station are stated in the City of Alexandria's approved Development Special Use Permit #2016-0004 for the proposed station. In summary, the approach for the design is based on using materials that reflect both the design heritage of the GWMP as well as the natural,	Design refinement, incorporating more detailed architectural and engineering design, was conducted to support preparation of Design-Build specifications and City of Alexandria planning and zoning applications. The current design is the result of an extensive process involving the City of Alexandria, WMATA, and NPS. Regular meetings were set up with the City of	The architectural refinements occur within the building footprint and height envelope identified in the FEIS. These architectural design refinements are included in the Section 106 Memorandum of Agreement.	The overall massing of the station is similar to that presented in the FEIS. Colors and materials of the refined design generally blend in more with the surroundings compared to the brighter and uniform light gray generic station building used in the station renderings presented in the FEIS. This results in potentially less overall visual effects to the GWMP.

#	Design Refinement	Reason for Refinement and Relevant Supporting Coordination	Context / Setting	Effect of Refinement (changes in LOD are described in comparison to FEIS LOD)
	wooded environment in which the station will sit. The station is also designed to sit lightly in the landscape and not take a monumental approach, minimizing visual impacts to the GWMP.	Alexandria's Potomac Yard Implementation Group (PYMIG) and the Old and Historic Board of Architectural Review (BAR), as the principal conduits for public input and comments, as well as the regularly scheduled meetings with NPS.		
Pedestrian Bridges and Entrance Pavilions				
3	Public access between the neighborhoods via the pedestrian/ bicycle bridge at the south end of station will be available during Metrorail station operating hours rather than 24 hours.	Further review of the pedestrian bridge design and WMATA policies was conducted. WMATA indicated that owning and operating a facility with 24-hour access (which would extend beyond Metrorail operating hours) would require that the responsibility and cost associated with operating and maintaining the pedestrian bridge and all associated facilities would be borne by the City of Alexandria. The majority of feedback received by the City from the community at the community meetings favored the bridge being open only when the station was open. Based on Metrorail operating hours (5am-12am Mon-Thu, 5am-3am Fri, 7am-3am Sat, and 7am-12am Sun), the station would be open 80% of the time in a given week. The City decision to have the pedestrian bridge owned and maintained by WMATA and open during station operations was, thus, based on the concerns expressed by residents, the costs to be borne by the City for operating and maintaining the facilities, and consideration that the facilities would remain open 80% of the time. Constructing a separate freestanding pedestrian/bicycle bridge to provide 24-hour access would also incur additional cost and impacts to adjacent residential and park uses.	The change only pertains to the proposed hours of public access and does not include any changes to the proposed project facilities or LOD presented in the FEIS.	The change in public access to the bridge would not affect station users and would only impact a relatively low number of potential early morning or late night pedestrians or bicyclists traveling between the Potomac Yard and Potomac Greens neighborhoods. Those users would still be able to use existing public roadways that connect the two neighborhoods and provide pedestrian and bicycle accommodations (Slaters Lane, U.S. Route 1 bridge, and Potomac Avenue). No changes to effects and findings in the FEIS.

#	Design Refinement	Reason for Refinement and Relevant Supporting Coordination	Context / Setting	Effect of Refinement (changes in LOD are described in comparison to FEIS LOD)
4	South bridge entrance pavilion location shifted approximately 100 feet to the north to line up visually with the East Glebe Road intersection and fit in better with the design of Potomac Yard park.	Design refinement, incorporating more detailed architectural and engineering design, was conducted to support preparation of Design-Build specifications and City of Alexandria planning and zoning applications. City parks staff and the Parks and Recreation Commission were involved in the process.	The new location is within Potomac Yard Park, similar to the location presented in the FEIS. The new location remains within the project LOD presented in the FEIS.	The new location occurs within the project LOD presented in the FEIS. The FEIS description of the LOD in this area acknowledged that potential minor design modifications to the station entrance pavilions and pedestrian and bicycle access facilities within Potomac Yard Park could occur and that the LOD was delineated accordingly. The new location is shifted a relatively minor distance (100') further away from the southern extent of Potomac Yard, compared to the typical maximum walking distance for premium regional transit services (1/4 to 1/2 mile). It is still located within walking distance of much of the commercial and residential development in south Potomac Yard. The new location also minimizes adverse impacts to the design and function of the Potomac Yard Park, and situates the entrance pavilion so that it fronts one of the park's pedestrian plazas.
5	North pedestrian bridge was modified to have a perpendicular crossing of the CSXT tracks based on engineering considerations to shorten the length of the bridge span between piers.	Design refinement, incorporating more detailed architectural and engineering design, was conducted to support preparation of Design-Build specifications and City of Alexandria planning and zoning applications.	The location of the entry pavilion is in the same general location as previously indicated in the FEIS, within the parking lot of the existing movie theater. The new location remains within the project LOD presented in the FEIS.	The north entrance pavilion is still located within the North Potomac Yard redevelopment area, as presented in the FEIS. The exact location of the pavilion will be coordinated with the on-going planning effort in North Potomac Yard to tie into the future street grid and development program proposed for that area.

#	Design Refinement	Reason for Refinement and Relevant Supporting Coordination	Context / Setting	Effect of Refinement (changes in LOD are described in comparison to FEIS LOD)
Construction Access				
6	The conceptual plans for construction access at this point in the project development will no longer specify a single-direction circulation pattern for construction traffic at the northern end of the Potomac Greens neighborhood along Carpenter Road and Potomac Greens Drive. Instead, the exact routing and directionality along these two streets will be determined during later design phases to best minimize impacts to the residential community.	Design refinement, incorporating more detailed architectural and engineering design, was conducted to support preparation of Design-Build specifications and City of Alexandria planning and zoning applications. In addition, the City of Alexandria held community meetings with the Potomac Yard and Old Town Greens neighborhoods during late 2015 and early 2016 to solicit input on the construction process.	The change occurs within the construction access routes shown in the FEIS.	The change would not modify the construction traffic impacts described and access routes depicted in the FEIS. As stated in the FEIS, further details regarding construction access and traffic management will be developed during later design phases.

Table C-2: Summary of Anticipated Changes (positive and negative) in Environmental Impacts Associated with Design Refinements Outlined in Table C-1

#	Design Refinement	Transportation	Land Acquisition and Displacement	Land Use and Zoning	Consistency with Local and NPS Plans	Neighborhoods, Demographics, and Community Resources	Visual Resources	Cultural Resources	Parklands	Safety and Security	Construction Impacts	Notes
Station and Track Design												
1	Design of the east-facing side of the station and realigned track has been refined as a hybrid of the two design options for the Preferred Alternative, incorporating both earthen berms and some smaller retaining walls. • The earthen berm extends up to the level of the station access road at 20'. Above the berm, the height of the exposed station wall below the track level is approximately 3'. • A retaining wall is provided below the level of station access road along a portion of the road near the middle of the station platform. The wall has a length of approximately 170' and a height of approximately 13'. • Under a portion of the realigned Metrorail track north of the station, a retaining wall is provided along the east-facing side. The wall has a length of approximately 400' and a maximum height of 12' in the middle that tapers down to 0' at its north and south ends.						✓					The LOD remains the same as the FEIS LOD and the impacts will be within the range of impacts resulting from the design options within the FEIS. The impacts to resources of the GWMP and Greens Scenic Area easement have been minimized.

#	Design Refinement	Transportation	Land Acquisition and Displacement	Land Use and Zoning	Consistency with Local and NPS Plans	Neighborhoods, Demographics, and Community Resources	Visual Resources	Cultural Resources	Parklands	Safety and Security	Construction Impacts	Notes
2	Architectural design of the station was further elaborated in detail. Required design elements for the station are stated in the City of Alexandria's approved Development Special Use Permit #2016-0004 for the proposed station. In summary, the approach for the design is based on using materials that reflect both the design heritage of the GWMP as well as the natural, wooded environment in which the station will sit. The station is also designed to sit lightly in the landscape and not take a monumental approach, minimizing visual impacts to the GWMP.						✓	✓	✓			The LOD remains the same as the FEIS LOD and the impacts will be within the range of impacts resulting from the design options within the FEIS. The impacts to resources of the GWMP and Greens Scenic Area easement have been minimized. These architectural design refinements are included in the Section 106 Memorandum of Agreement.
Pedestrian Bridges and Entrance Pavilions												
3	Public access between the neighborhoods via the pedestrian/ bicycle bridge at the south end of station will be available during Metrorail station operating hours rather than 24 hours.	✓				✓						The LOD and project facilities remain the same as those described in the FEIS and will have no impacts to station users, but changes to public access of the pedestrian/ bicycle bridge would impact a relatively low number of potential early morning or late night pedestrians or bicyclists traveling between the Potomac Yard and Potomac Greens neighborhoods. Those users would still be able to use existing public roadways that connect the two neighborhoods and provide pedestrian and bicycle accommodations (Slaters Lane, U.S. Route 1 bridge, and Potomac Avenue).

#	Design Refinement	Transportation	Land Acquisition and Displacement	Land Use and Zoning	Consistency with Local and NPS Plans	Neighborhoods, Demographics, and Community Resources	Visual Resources	Cultural Resources	Parklands	Safety and Security	Construction Impacts	Notes
4	South bridge entrance pavilion location shifted approximately 100 feet to the north to line up visually with the East Glebe Road intersection and fit in better with the design of Potomac Yard park.	✓					✓		✓			The LOD remains the same as the FEIS LOD, but impacts to Potomac Yard Park are minimized by the new location of the south bridge entrance pavilion.
5	North pedestrian bridge was modified to have a perpendicular crossing of the CSXT tracks based on engineering considerations to shorten the length of the bridge span between piers.	✓										The new bridge location is within the FEIS LOD, and the new entrance pavilion would continue to be located in North Potomac Yard, but the exact location of the pavilion will be determined in later phases of design.
Construction Access												
6	The conceptual plans for construction access at this point in the project development will no longer specify a single-direction circulation pattern for construction traffic at the northern end of the Potomac Greens neighborhood along Carpenter Road and Potomac Greens Drive. Instead, the exact routing and directionality along these two streets will be determined during later design phases to best minimize impacts to the residential community.										✓	Changes to construction access will not modify construction traffic impacts as described in the FEIS. Future determination of routing and directionality will be used to minimize and mitigate the FEIS construction impacts.