Existing View 8

Simulation 8

Figure 4-2 (8): From Pentagon Mall Entrance Parade Field (roof of Remote Delivery Facility).

Existing View 9

Simulation 9 (Note: Because the proposed AFM is not visible, it is indicated in red.)

Figure 4-2 (9): From Navy Marine War Memorial (located 1.1 mile away) on George Washington Memorial Parkway.

Existing View 10

Simulation 10 (Note: Because the proposed AFM is not visible, it is indicated in red.)

Figure 4-2 (10): From Washington Monument (located 2.3 miles away).

Existing View 11

Simulation 11 (Note: Arrow identifies location of the proposed Memorial)

Figure 4-2 (11): From the Tidal Basin area looking west.

Existing View 12

Simulation 12 (Note: Arrow identifies location of the proposed Memorial)

Figure 4-2 (12): From the western side of the Jefferson Memorial (located 1.8 miles away).

Existing View 13

Simulation 13 (Note: Because the proposed AFM is not visible, it is indicated in red.)

Figure 4-2 (13): From the western side of the US Capitol.

Existing View 14

Simulation 14 (Note: Because the proposed AFM is not visible, it is indicated in red.)

Figure 4-2 (14): From the Lincoln Memorial area (located 1.7 miles away) looking southwest.

4.3 Transportation Systems

4.3.1 Roadway Traffic

Alternative Concept A

The introduction of a Memorial at the Naval Annex site would not require a change or alteration to the existing roadway network in the study area. However, the internal circulation system within the site would change under Alternative A. During the interim period, the northern Naval Annex parcel would function as two areas. The portion to the west would remain as a secure federal office area with entrances off Columbia Pike and Southgate Road. Under Alternative A, a new curb-cut would be introduced off the northern edge of Columbia Pike. An internal circulation road, perpendicular to Columbia Pike would provide access to a drop-off area and parking for the Memorial. Other alterations, including new pedestrian pathways, would be as described in Section 2.2. Subsequent to the proposed expansion of Arlington National Cemetery, the proposed access to the AFM precinct off Columbia Pike would be retained, as well as internal vehicular and pedestrian connections with proposed streets and sidewalks within the Cemetery would be established to ensure a strong link with the Cemetery's circulation system.

During the construction period, a temporary entrance would be established along Columbia Pike. The location of this entrance is anticipated to be to the south of Wing 8. A temporary construction fence would separate the construction site from the remaining portion of FOB #2. A separate entrance to the construction area is proposed to minimize construction related traffic from impacting the remaining Naval Annex users.

During construction of the proposed Memorial, some disruption to the existing transportation routes in the surrounding study area are anticipated due to construction vehicles carrying materials to and from the site. A traffic management plan would be developed and implemented so that construction traffic would have a minimal impact on the surrounding streets. Due to security considerations at the Pentagon, trucks would probably use Interstate 395 and exit the highway at Washington Boulevard to the west of the Naval Annex site. From there, these would take Columbia Pike to access the site. Vehicles leaving the site would turn right on Columbia Pike and then join I-395 via Washington Boulevard.

Once the proposed Memorial and associated parking and transportation improvements are completed, and the Memorial is operational, it is estimated to draw approximately 750,000 annual visitors. These visitors average approximately 2,000 per day. Given that there would likely to be a greater number of people visiting on the weekends compared to the weekdays, visitation is assumed to be approximately 1,000 visitors per weekday (at 50 percent of daily average) and approximately 4,000 visitors per weekend day and holidays (at 200 percent of the daily average).

Assuming that all visitors drive, and that two persons occupy each car on average, this would result in approximately 500 vehicular trips to and from the Memorial on weekdays. Similarly, there would be approximately 2,000 vehicular trips to and from the Memorial on weekends. This

is a conservative estimate since a large number of visitors would also arrive by other modes of transportation, including tour buses and Metrorail.

Assuming a uniform distribution of weekday traffic during non-peak hours (after 9:00AM and before 4:00 PM, and then from 6:00 PM to 9:00 PM), this would result in approximately 50 cars arriving and departing the site per hour.

Columbia Pike currently carries a total of between 30,000 and 40,000 vehicles per day. An addition of 1,000 trips during the weekday would represent an increase of approximately 3.3 percent. However, the proposed action would also result in a reduction of on-site office space due to the removal of Wing 8, thereby reducing the number of vehicular trips to the site. Therefore, since the existing roads handle a significantly larger number of vehicles during the peak hours, the difference in the estimated non-peak hour vehicular trips added to the site due to the proposed AFM and those peak hour trips reduced due to the demolition of Wing 8, would not result a significant impact on the local roadway system.

During periods of heightened activity, such as ceremonies, performances, and other special events at the proposed Memorial, that are likely to be held on non-work days, the surrounding road network should be adequate to handle the increase in traffic.

Alternative Concept B

Similar to Alternative A, there would be a proposed construction entrance off Columbia Pike, since such an entrance would not be feasible off Southgate Road due to the steep incline between the road and the promontory area. Therefore, during construction, Alternative B is anticipated to have similar potential impacts.

Unlike Alternative A, Alternative B proposes an entrance to the Memorial off Southgate Road. There would be an increase in the amount of traffic accessing Southgate Road from its intersection with Columbia Pike. As described earlier, the traffic during weekdays is estimated to be approximately 50 cars arriving and departing the site per hour. These are not anticipated to have a significant impact on the existing intersection. During weekends, the existing traffic would be greatly reduced, therefore, an increase in traffic accessing the proposed Memorial is not anticipated to have an adverse impact. Other potential impacts on the traffic patterns in the area would be similar to those under Alternative A.

Alternative Concept C

The No-Action Alternative would not result in changes to the existing traffic conditions.

Mitigation for Alternatives A and B

To minimize short-term construction related impacts on surrounding streets, a traffic management plan should be developed and implemented.

4.3.2 Parking Availability and Proximity

Alternative Concept A

It is anticipated that on-site construction related personnel would reach a maximum of approximately 75 workers. It is anticipated that these workers would park off-site and be transported to and from the construction site on a daily basis. A limited number of parking spaces would be provided on-site for the duration of construction activities.

Under Alternative A, 20 parking spaces and four spaces for persons with disabilities would be added, adjacent to the proposed Memorial. In addition, there would be a bus drop-off and turnaround area and parking spaces for three buses. These areas would be screened from the remainder of the FOB #2 by an earthern berm and new vegetation. During the interim period, while the remainder of the FOB #2 continues to function as office spaces, visitors to the proposed Memorial would park in the existing parking area to the south of Columbia Pike. Approximately 25 spaces, located close to the AFM entrance, would be earmarked for visitors to the proposed Memorial. As a replacement, 25 additional parking spaces would be paved further to the south in this parking area. Also, during this period, a bus drop off is proposed near the Memorial entrance gate. Parking during the interim period, that will be located to the south side of Columbia Pike, would be accessible to public at all hours, similar to the current conditions. However, the gates of the Memorial would remain closed from late in the evening to early morning. Subsequent to the demolition of the FOB #2 facility, visitors to the AFM would use the proposed parking adjacent to the Memorial. The parking would be accessible during the operating hours of the Memorial. It is anticipated that the proposed AFM would be accessible for longer hours during the day and evening, than Arlington National Cemetery.

Under Alternative A, approximately 220 existing parking spaces to the east of Wing 7 would be eliminated. The existing available parking spaces are substantially less than that required by the existing tenant population at the Naval Annex site[1]. Even though Wing 8 would be eliminated, the resulting reduction in parking need would not offset the loss of the existing parking spaces. Therefore, this net reduction of parking is anticipated to be a minor impact on the availability of parking for FOB #2.

During the interim period, most visitors who drive are anticipated to visit the site for a brief period before continuing their visitation of other monuments and memorials in the area. Therefore, the 24 spaces at the site should be sufficient to accommodate these visitors. During weekends, when the demand for parking may be greater, there would be additional parking available at the Naval Annex site south of Columbia Pike. Subsequent to the expansion of Arlington National Cemetery, the proposed Memorial is likely to be added to the Cemetery's shuttle route allowing overflow parking to be accommodated at the existing parking area within the Cemetery.

During special events and performances, there would be a substantially greater demand for parking. Measures such as utilizing parking areas immediately adjacent to the Pentagon City

[1] Comments from DOD dated December 20th, 2002.

Mall and the DOD parking lot on Army Navy Drive, and providing a shuttle between these and the Memorial are currently being explored to manage the parking demand during such occasions.

Alternative Concept B

Under Alternative B, parking for the AFM is proposed off Southgate Road. This would require visitors to walk a greater distance to access the proposed Memorial from the parking area compared to Alternative A. However, unlike Alternative A, visitors would park at this location during the interim period, as the parking area is a significant distance away from the remainder of FOB #2, and therefore would not be required to cross Columbia Pike to access the Memorial.

Alternative Concept C

The No-Action Alternative will not result in changes to existing parking conditions.

Mitigation for Alternatives A and B

During the interim period, a stop light and a crosswalk are planned between the interim parking area and the Memorial entrance. Provision of these should be coordinated with VDOT and Arlington County. Also, measures such as utilizing parking areas immediately adjacent to the Pentagon City Mall and the DOD parking lot on Army Navy Drive, and providing a shuttle between these and the Memorial, should be adopted to mitigate potential parking impacts during special events and functions.

4.3.3 Public Transportation

Alternative Concept A and B

It is not anticipated that there would be an increase in utilization of the public transportation system during the construction phase of the proposed project. Once the proposed Memorial is open to public, it is anticipated that there would be a slight increase in utilization of the Metrorail stations at Pentagon and Pentagon City by visitors using public transportation. Subsequent to the expansion of Arlington National Cemetery, it is anticipated that some visitors may access the proposed Memorial via the Cemetery and may use the Arlington National Cemetery station. Some visitors may also use the Metrobus service and access the site via the existing bus-stop on Columbia Pike.

It is not anticipated that public transportation systems including the Metrorail or Metrobus service would be adversely impacted by increases resulting from the establishment of the proposed AFM.

Alternative Concept C

The No-Action Alternative would not result in changes to existing public transportation systems.

Mitigation for Alternatives A and B

No mitigation measures would be required to develop the proposed Memorial under Alternatives A and B.

4.3.4 Pedestrian/Bicycle Circulation

Alternative Concept A

The proposed Memorial would provide a destination for the general public in an area where most of the existing pedestrian movement consists of employees working at the Naval Annex site. Once the Memorial is open to the public, there would be some visitors who would access the site using public transportation systems. There is a bus-stop along Columbia Pike, to the west of the proposed entrance to the Memorial. Visitors using public buses are anticipated to disembark at this stop and use the existing sidewalk adjacent to Columbia Pike to access the Memorial.

During the interim period, visitors using Metrorail are anticipated to disembark at either the Pentagon Metrorail station or the Pentagon City Metrorail station. Similar to existing pedestrian traffic, these visitors would use existing sidewalks to access the Memorial. Pedestrians walking to the proposed Memorial from the Pentagon Metrorail station would follow the same pattern of movement that is used by current pedestrians to access the Naval Annex site. This includes walking through the Pentagon's south parking area and using existing sidewalks along Columbia Pike that pass below Route 27, cross the off-ramp and on-ramp providing access to Route 27 and cross Southgate Road. Of these, only the latter is signalized. The movement from Pentagon City Metrorail station would require pedestrians to cross Army Navy Drive and walk along Joyce Street before crossing Columbia Pike to walk to the proposed Memorial. Both the intersections, across Army Navy Drive and across Columbia Pike, provide a signalized crossing for pedestrians. The other alternative movement from the Pentagon City Metrorail station would require pedestrians to use the existing tunnel below I-395 to access the Pentagon south parking area before proceeding to the Naval Annex site. Also, during the interim period, visitors would park in the existing parking lot to the south and would be required to cross Columbia Pike to access the proposed Memorial.

Subsequent to the proposed expansion of the Arlington National Cemetery, it is anticipated that a pedestrian connection would be established to the proposed AFM from existing and proposed pedestrian paths within the Cemetery. These would allow people to walk from the Cemetery to the proposed Memorial.

The proposed Memorial would also provide a destination for bicyclists. As indicated earlier, the area surrounding the Naval Annex site is accessible to bicyclists, with Joyce Street providing on-street access and a dedicated bike trail parallel to Route 27, providing off-street access. The *Columbia Pike Initiative* recommends widening the bike trail between Southgate Road and the Pentagon. The plan also recommends designating an on-street bike route along Southgate Road and South Orme Street. If these recommendations materialize, a bicyclist could avoid the on-street, steep climb along Columbia Pike and could approach the proposed Memorial from South

Orme Street. This condition may also be improved during the future condition if Columbia Pike is realigned.

The proposed project under Alternative A is not anticipated to have an adverse impact on existing pedestrian and bicycle movement in the area.

Alternative Concept B

Under Alternative B, visitors would access the site from Southgate Road. Although, this entrance is nearer to the Pentagon City and the Pentagon Metrorail stations, pedestrians would still be required to walk up to the main portion of the Memorial. Also, as mentioned earlier in this section, Alternative B proposed parking is located off Southgate Road. This would require visitors to walk a greater distance to access the proposed Memorial from the parking area compared to Alternative A. However, unlike Alternative A, visitors would park at this location during the interim period, since the parking area is a significant distance away from the remainder of FOB #2, and therefore, would not be required to cross Columbia Pike to access the Memorial. Bicyclists would access the site off Southgate Road and would probably park at the lower level before walking up to the main portion of the Memorial. Similar to Alternative A, the proposed project as Alternative B is not anticipated to have an adverse impact on the existing pedestrian and bicycle movement in the area.

Alternative Concept C

The No-Action Alternative would not result in changes to the existing pedestrian and bicycle movement in the area. Under this alternative, a new destination for bicyclists and pedestrians would not be established at the Naval Annex site.

Mitigation for Alternatives A and B

No mitigation measures would be required to develop the proposed Memorial under Alternatives A and B.

4.4 Physical/Biological Resources

4.4.1 Air Quality

Alternative Concept A and B

The proposed Memorial site is open and exposed, with good air circulation. However, the development of the proposed AFM would result in short-term construction related impacts on air quality resulting from demolition activities and the operation of construction equipment. Emissions from heavy equipment operating on petroleum fuel would be the principal pollutant during construction. It is estimated that site preparation and the actual construction of the Memorial would last approximately 27 months. It is estimated that construction equipment would operate eight hours per day over this time period. The impact on air quality would be most evident to employees and visitors at the remaining offices in FOB #2, but is anticipated to have a

negligible effect on carbon monoxide concentrations in the larger study area. A secondary short-term impact would be related to the demolition of Wing 8 and the parking area, which has the potential to emit dust and other particulates into the air. No negative long-term effects would result once these activities have been completed. All activities would be required to conform to DOD's excavation permit for such demolition and construction.

During the interim period, while the Memorial is operational and the remaining portions of FOB #2 are in use, there may be a slight increase in traffic arriving and departing the site. However, as discussed under Section 4.3.1 of this document, the increase in traffic during the interim period is anticipated to be minimal. Long-term impacts on air quality from vehicular traffic would be negligible since the anticipated traffic generated by visitors to the proposed Memorial would be reduced compared to the volume currently generated by the Naval Annex site.

The most substantial long-term effect on air quality would potentially result from idling buses emitting carbon monoxide, as well as hydrocarbons and oxides of nitrogen. However, the estimated length of stay and the anticipated number of vehicles entering the site would have a negligible impact on carbon monoxide concentration levels in the area. In addition, reduction in vehicular traffic and the elimination of HVAC equipment due to the demolition of the Naval Annex site would likely balance any increase in emissions resulting from the proposed Memorial. Overall, the air pollutant emissions generated due to the proposed Memorial would have very little impact on air quality, and the proposed project would comply with all applicable Federal, state and local air quality regulations. Further, the addition of vegetation to an area that is largely paved and developed would improve the microclimate of the area, both in the interim period and particularly after the Cemetery expands on to the Naval Annex site.

Alternative Concept C

The No-Action Alternative would not require the demolition of Wing 8 or the remainder of the structures on the Naval Annex site, nor would it result in construction activities at the site. Therefore, it would have no impacts on air quality resources beyond the existing conditions.

Mitigation for Alternatives A and B

Demolition and construction impacts should be minimized through the implementation of best management practices as part of a demolition/construction management plan. Such best management practices include measures such as the use of commercial power instead of portable generators wherever feasible, and the spreading of water on grading areas and unpaved roads to eliminate visible dust plumes.

4.4.2 Noise Levels

Alternative Concept A and B

The proposed project would generate intermittent short-term noise impacts during the construction phase. The construction-related noise would vary daily depending on the type of construction activity taking place. The basic construction activities associated with the proposed

project are demolition, excavation, grading and construction of the Memorial elements. These activities are likely to involve the use of bulldozers, scrapers, backhoes, pile drivers, concrete mixers and pumps, saws, hammers and cranes. Noise levels generated by various construction activities range from 78 dBA (saws) to 101 dBA (pile drivers) as reported by the Environmental Protection Agency (EPA, 1971). Noise would be also generated during construction by heavy trucks transporting demolished material and excavated soil from the site and building materials to the site.

During the demolition and construction phase of the proposed action, office employees at the remaining wings of FOB #2 would likely experience periods of increased noise due to the operation of construction vehicles and equipment. Arlington County limits construction-related noise to 90 dBA L_{eq}. The construction equipment expected to be used on-site is capable of achieving this noise limit. There are no sensitive noise receptors on the site. The closest off-site noise receiver is Arlington National Cemetery, located approximately 250 feet from where the construction activities would occur. The distance between the construction activity and the Cemetery, along with other noise generators in the area, such as Southgate Road, would reduce the potential noise impact on that receptor. The movement of heavy trucks transporting materials could cause an adverse noise impact to residences along Columbia Pike that are on or adjacent to the designated travel route for construction vehicles.

A construction management plan should be prepared and implemented to comply with the County's noise regulations to insure that short-term construction-related noise is mitigated and noise levels do not exceed 90 dBA at a distance of 25 feet outside the construction site boundary. Short-term construction-related noise would be mitigated by controlling noise at the sources through implementation of best management practices, as necessary, to meet these standards. Noise barriers will be used as necessary to attenuate noise within the construction site. It is recommended that construction specifications require the selection of truck routes that would minimize the potential for noise impacts from trucks during construction, particularly during the demolition period.

The proposed Memorial would have minimal long-term noise-related impacts. Traffic and ceremonies that may be held at the Memorial are the only anticipated noise generators that may occur due to the development of the proposed Memorial. As discussed previously with respect to transportation, the proposed Memorial would result in a similar number of vehicles arriving and departing the site during the interim phase relative to existing conditions. Therefore, vehicle-related noise impacts would be minimal. Ceremonies that would occur at the site are likely to be sporadic and would probably take place during weekends and holidays when background traffic volumes are substantially reduced. Therefore, the traffic volumes generated by ceremonies would not produce significant negative long-term impacts on adjacent uses.

Alternative Concept C

The No-Action Alternative would not require the demolition of Wing 8 at this time, nor would it result in construction activities at the site. Therefore, it would have no impacts on noise resources beyond the existing conditions.

Mitigation for Alternatives A and B

Construction specifications should require the selection of truck haul routes that would minimize the potential for truck noise impact during transportation of demolition and construction materials.

4.4.3 Water Resources

Alternative Concept A and B

Construction of the proposed Memorial would not have a direct impact on surface water bodies, floodplains, or wetlands since none are present in the immediate vicinity of the site. During demolition and excavation, there is a slight potential for soil erosion along the promontory area that may increase the sediment load of stormwater runoff. However, appropriate soil erosion and sediment control measures implemented during the construction phase would minimize or eliminate any impact on water resources resulting from the proposed project. Therefore, there would be no impact on the quality of receiving waters as a result of the construction of the proposed AFM.

Once the proposed Memorial is constructed, the overall amount of impervious surfaces within the AFM precinct would be reduced considerably relative to existing conditions. Under the proposed action, proposed landscape improvements, parking for the Memorial, and the various Memorial elements would replace Wing 8 and its associated parking area (which currently cover nearly 90 percent of the precinct). As a result, of the proposed improvements, approximately 40 percent of the total precinct area would consist of impervious surfaces, a substantial increase in natural ground cover. The net increase in pervious surfaces would help decrease the amount of surface run-off from the site. Therefore, the proposed Memorial would not have an adverse impact on the existing stormwater system in the area.

Alternative Concept C

The No-Action Alternative would not require the demolition of Wing 8, nor would it result in construction activities at the site. Therefore, it would result in no changes to the existing stormwater system.

Mitigation for Alternatives A and B

No mitigation measures would be required to develop the proposed Memorial under Alternatives A and B.

4.4.4 Geology, Soils and Topography

Alternative Concept A

There are no unique geological features within the proposed AFM precinct. Therefore, the proposed Memorial under Alternative A would have no significant effect on such resources. Construction of the primary elements of the Memorial (the spires) would occur near the edge of the promontory and along a portion of the steeply sloping area. Soil borings conducted at the site for geotechnical studies indicate the occurrence of clay within the subsurface that would likely require deep concrete caissons/ drilled piers foundations to support the proposed structures. A final geotechnical study and a detailed structural analysis would be prepared prior to commencement of construction to ensure the stability of the Memorial. Most of the soil excavated for the foundation work is anticipated to be used for grading purposes within the site.

Since the site is mostly disturbed, the proposed Memorial would not contribute to adverse soil impacts. However, construction along steeper portions of the site would require appropriate soil stabilizing and erosion control measures.

The site's main characteristic is the promontory area that offers spectacular views towards the east. The proposed site design, under Alternative A, retains this characteristic of the site and only proposes slight alterations to the existing topography. Therefore, the development of the proposed Memorial is not anticipated to have a significant impact on the existing topographical condition of the site.

Alternative Concept B

The development of the proposed Memorial under Alternative B would have a similar impact under Alternative A. This alternative would also require regrading along Southside Road and along the existing slope below the promontory area to establish the proposed parking and pedestrian access to the AFM.

Alternative Concept C

The No-Action Alternative would not require site regarding activities and would not result in impacts to the existing geology, soils or topography of the site.

Mitigation for Alternatives A and B

A final geotechnical study and a detailed structural analysis should be prepared to ensure that measures, such as a deep concrete caisson/drilled pier foundation, would be adequate to support the proposed Memorial at the edge of the promontory area. Also, appropriate soil stabilizing, including appropriate subsurface drainage and erosion control measures, should be incorporated in the proposed development and implemented throughout the course of construction and operation of the proposed Memorial.

4.4.5 Vegetation and Wildlife Habitat

Alternative Concept A

As part of demolition and construction activities, the movement of construction vehicles and the storage of materials on site would likely disrupt some of the vegetation at the periphery of the promontory area and towards the north of the precinct area. Also, proposed improvements to the site would require the removal of some of the shrubbery along the edge of the promontory.

Under the proposed site design, new buffer plantings would be added between the main portion of the Memorial and the parking area to the west, between the parking area and Wing 7 of FOB #2, and at the northern edge of the precinct.
Because there is relatively little wildlife currently residing within the Naval Annex site, and since the proposed project would result in minor changes to the natural environment, the proposed Memorial would not have an adverse impact on wildlife. In the long-term, after the proposed expansion of the Arlington National Cemetery, the proposed improvements to the AFM precinct would become part of a larger vegetative area and would contribute to open space that would be available to existing wildlife in the Cemetery.

Overall, under Alternative A, the proposed Memorial would not have an adverse impact on existing vegetation and wildlife conditions in the AFM precinct as well as in the surrounding area.

Alternative Concept B

Since Alternative B proposes a parking area adjacent to Southside Road, there would be less vegetation in that area. However, there would be opportunities for additional planting separating the Memorial from Wing 7 of FOB #2 under Alternative B. Despite the locational differences, the proposed Memorial under Alternative B would have a similar impact on vegetation and wildlife resources as under Alternative A.

Alternative Concept C

The No-Action Alternative would not require the demolition of Wing 8, nor would it result in construction activities at the site. Therefore, there would be no impact on existing vegetation and wildlife.

Mitigation Measures

Buffer planting should be added to the west and north of the proposed Memorial to provide a separation from FOB #2 and Southgate Road during the interim period. Efforts will be made to add native plant species to the extent possible.

4.4.6 Hazardous Materials

Alternative Concept A and B

Implementation of Alternatives A and B would require demolition of Wing 8. Given the age of the building, some of the solid waste generated during demolition would likely contain asbestos and/or lead. The existing hazardous waste storage area, located adjacent to Wing 7, is not anticipated to be disturbed due to the development of the proposed Memorial.

Also, the proposed development under Alternative A would result in disturbing soil in the area of Boring B-1 (see Figure 3-3). Since an environmental analysis of one of the samples from this location identified a higher concentration of arsenic, excavated material should be handled in accordance with applicable regulations.

Alternative Concept C

The No-Action Alternative would not require the demolition of Wing 8, and therefore, would not have impacts on hazardous materials.

Mitigation for Alternatives A and B

Asbestos- or lead-bearing wastes should be collected, transported and disposed by a specially licensed contractor, in accordance with the requirements of Title 40 CFR Part 763 or other applicable federal regulations. Also, materials excavated in the vicinity of the location of soil boring B-1 should be handled in accordance with applicable regulations.

4.5 Utilities/Infrastructure

Alternative Concept A and B

The development of the proposed Memorial would require the relocation of existing utility infrastructure. These include relocating the existing underground stormwater pipe located to the east of Wing 8, the existing 16-inch sanitary connection that runs from the eastern end of Wing 8 to the Arlington County sewer system and the existing water infrastructure that loops around FOB #2. Other utilities that currently service the site include natural gas, steam, electricity and telecommunication lines. The demolition of Wing 8 and the development of the proposed Memorial would also require the relocation of these utilities.

The anticipated needs of the proposed Memorial include a sewer connection to the service building, water connections to the building and water fountains around the site, stormwater drains to accommodate stormwater run-off generated due to the proposed Memorial and parking area, feature lighting for the various elements of the Memorial, lighting for parking areas and pedestrian safety, and telecommunication lines to the service building.

The proposed Memorial would result in a reduction in the amount of impervious surfaces within the AFM precinct and would, therefore, reduce the amount of stormwater run-off generated at the site compared to the existing conditions. Similarly, due to the demolition of Wing 8, there would be a reduction in the amount of sanitary waste generated on site. Also, the anticipated water needs for the proposed Memorial would be considerably less compared to the needs of the existing Wing 8. Impacts on other utilities including electricity, natural gas, steam and telecommunication are also anticipated to be minimal. Therefore, the proposed Memorial is not anticipated to have an adverse impact on the capacities of existing utilities.

Alternative Concept C

The No-Action Alternative would not require the demolition of Wing 8 or the removal of the parking area surrounding it. Therefore, there would be no impacts on existing utilities.

Mitigation for Alternatives A and B

Necessary relocations of utility infrastructure should be undertaken such that the existing uses within FOB #2 are not adversely impacted. Also, site design for the proposed Memorial should accommodate new lines for the various utility services. These should be coordinated with the demolition and relocation plans that would be prepared by DOD as part of their demolition and site preparation responsibilities. Also, the proposed Memorial should seek to reduce energy consumption by using energy saving fixtures and alternate energy sources.

4.6 Cumulative Impacts

The CEQ regulations require that NEPA environmental analysis address connected, cumulative, and similar actions in the same document (40 CFR 1508.25). This requirement prohibits segmentation of a project into smaller components to avoid required environmental analysis. This EA addresses the impacts of establishing the proposed AFM to the extent that these impacts can be identified, as well as reasonably foreseeable potential actions in the vicinity of the approved site for the Memorial.

Five projects that are proposed in the vicinity of the Naval Annex site were identified as potentially having cumulative impacts in conjunction with the proposed AFM. Each project is in a different stage of planning and development and is subject to change prior to actual development. These projects include: the anticipated expansion of the Arlington National Cemetery pursuant to the *Concept Land Utilization Plan*, dated October 2000; an anticipated September 11 Memorial proposed on the grounds of the Pentagon; a second September 11 Memorial proposed by Arlington County that would be located near the Naval Annex to the south of Columbia Pike; the relocation of Route 110; and proposed improvements to the Columbia Pike corridor as described in the *Columbia Pike Initiative – A Revitalization Plan.*

4.6.1 Arlington National Cemetery Expansion Plans

As discussed under Section 4.1.2 of this document, the *Arlington National Cemetery Master Plan* identifies the Naval Annex site as a potential site for expanding the Cemetery. The *Concept Land Utilization Study* provides a conceptual site plan that illustrates the expansion of the Cemetery into the Naval Annex site. Under that plan, the remainder of the Naval Annex site would be cleared of buildings and parking and the area would be prepared for accommodating ground interment, a columbarium area, a 50-car parking area, and vegetative buffer areas.

The amount of potential space available to the Cemetery would be reduced by approximately three acres due the development of the AFM. However, the National Defense Authorization Act for Fiscal Year 2000 (Public Law 106-65), which provides for the transfer of the Naval Annex site to the Arlington National Cemetery, also indicates that, of the land transferred to the Cemetery, the Secretary of Defense may reserve up to 10 acres as a site for a National Military Museum and any other memorials that the Secretary considers compatible with the Cemetery. The proposed Memorial would qualify under that latter requirement and, therefore, would not be an adverse impact on the Cemetery's expansion plans.

Once the remaining functions at FOB #2 cease, anticipated by 2010, the buildings and parking areas would be demolished. Since there is a difference of about four years between the anticipated completion of construction activities at the proposed Memorial and the commencement of demolition activities at the remainder of the Naval Annex site, there would be no cumulative construction-related impacts.

However, long-term cumulative impacts of both projects may include expansion of open space, reduction in utility needs, reduction in impervious surfaces, improved visual conditions, reduction in traffic generation, and increased opportunities for public access to the area.

4.6.2 Proposed September 11 Memorials

A proposed September 11 Memorial would be located between Washington Boulevard/Route 27 and the western wall of the Pentagon Building, to the east of the proposed AFM. A second September 11 Memorial is proposed by Arlington County at the southern end of the Naval Annex site, adjacent to Interstate 395. Both these Memorials are in preliminary stages of development and are anticipated to be developed within the next few years.

Depending on the design of the latter Memorial and construction activities required, there may be an overlap between construction activities at this site and the proposed AFM that may result in cumulative impacts such as increased noise, dust, emissions from construction equipment and vehicles, and construction-related traffic along Columbia Pike.

Long-term cumulative impacts may include potential traffic congestion during occasions when there may be separate ceremonies at the three Memorials. However, those occasions are likely to be rare. During regular visitations, it is likely that the presence of the three Memorials within close proximity of each other would encourage visitors to visit all three as part of the same visit.

4.6.3 Proposed Realignment of Route 110

Due to security concerns, DOD has proposed realigning Route 110 near the Pentagon. Under preliminary plans, this road would be moved further east of the Pentagon and is anticipated to be completed within the next two years. This project may result in some rerouting of traffic along the surrounding roads including Route 27, Boundary Channel, and I-395 during the period of construction. However, due to distance and timing, no cumulative impacts are anticipated.

4.6.4 Proposed Improvements to the Columbia Pike Corridor

As discussed earlier in this document, Arlington County established the Columbia Pike Initiative to help revitalize the Columbia Pike corridor. The Initiative developed a long range vision and plan that provided recommendations for the improvement of the Columbia Pike corridor. This plan, adopted by the Arlington County Board, proposes changes to Arlington County's General Land Use Plan (GLUP) and the Zoning Ordinance, and the development of new urban design guidelines for the corridor. The plan also identifies the Naval Annex site area and the adjacent neighborhood to the west as a potential 'eastern gateway' to the Columbia Pike Corridor. While the development of the proposed Memorial would be consistent with the *Columbia Pike Initiative* that identifies this area as the eastern gateway to Columbia Pike and a location for a museum or Memorial, no cumulative impacts are anticipated from the plan's recommended changes to the GLUP and Zoning Ordinance changes.