

## 4.0 ENVIRONMENTAL EFFECTS

### 4.1 Geologic Resources

#### A. Draft EIS Comments

##### Impacts to Soils and Prime Farmland

###### Federal Agency Comments

**Federal Comment:** NRCS has reviewed this document to ensure that impacts to soils and prime farmland were adequately documented. Section 4.1.3.3 - Soils and Section 4.1.3.4 - Prime Farmland provide this documentation. Virginia NRCS has no objection to this proposal. (0001, 0001-A -1)

*Response:* Thank you for your input.

###### State Agency Comments

##### Submittal of Erosion and Sediment Control Specifications to the Virginia Department of Conservation and Recreation

**State Comment:** On behalf of the Virginia Soil & Water Conservation Board, the Virginia Department of Conservation and Recreation (DCR) requests Erosion & Sediment Control (ESC) Specifications for 2003 for your company per Section 10.1-563 of the Virginia Erosion & Sediment Control Law. The deadline for submitting these specifications is September 15, 2002. (0002, 0002-A -1)

**State Comment:** Additionally, please provide updated company contact person information along with your ESC Specifications, and route this letter to the appropriate engineer or regulatory person within your company. (0002, 0002-A -2)

*Response:* A Locally Preferred Alternative (LPA) has been selected that is detailed in the Final EIS. More specific erosion and sediment control specifications will be developed during preliminary engineering and the appropriate Project staff person will contact the DCR for further coordination required.

##### Comments on Natural Resources Technical Report

**State Comment:** Natural Resources Technical Report (June 2002). The 95% Draft EIS Technical Report was reviewed and deemed to adequately address Natural Resources issues. Since the Final Draft Technical Report appears to be essentially unchanged, we have no further comments on this section of the report. (0421, 0421-A -10)

*Response:* Thank you for your input.

##### Virginia Department of Mines, Minerals, and Energy Determination of No Impact

**State Comment:** States that the Virginia Department of Mines, Minerals, and Energy determined that the project would have no impact on the geology or mineral resources of the corridor. (0517, 4-01)

*Response:* The Natural Resources Conservation Service and the Virginia Soil and Water Conservation Board made similar comments.

#### B. Supplemental Draft EIS Comments

No comments pertaining to this topic were received.

## 4.2 Water Resources

### A. Draft EIS Comments

#### State Agency Comments

##### **DEQ's Water Division's Comments on Mitigating Impacts on Water Resources**

**State Comment:** According to DEQ's Division of Water Program Coordination, Office of Water Permits Support (hereinafter "DEQ's Water Division"), any of the "build alternatives" would affect surface waters and wetlands. The limitation of proposed construction to the median of existing roads, as much as practicable, will be helpful in avoiding and minimizing wetland and waterway impacts of the project; we encourage additional efforts in this regard as the project progresses. Examples of avoidance and minimization efforts include completely spanning wetlands to avoid impacts, and shifting the alignment of road or rail structures. Unavoidable impacts to wetlands and streams may require compensatory mitigation, as the Draft EIS explains (pages 4-54 through 4-58, section 4.2.6). (0407, 0407-A-8)

**Response:** *Through an iterative design process, impacts to wetlands, streams, and floodplains were avoided to the extent practicable. In many cases, these efforts avoided direct impacts to these resources completely. As described in Section 4.2 of the Final EIS, compensatory mitigation will be implemented where unavoidable effects remain.*

##### **Consistency with the Chesapeake Bay Preservation Area Designation and Management Regulations**

**State Comment:** Chesapeake Bay Preservation Act Compliance. Road and railway projects are conditionally exempt from the requirements of the Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 10-20-10 et seq.) provided such projects are constructed, operated, and maintained in accordance with the Virginia Erosion and Sediment Control Law and the Virginia Stormwater Management Act (or an equivalent local program). This conditional exemption also requires that road alignments and design prevent or otherwise minimize (i) encroachment in Resource Protection Areas, as defined in the Regulations, and (ii) adverse effects on water quality. Non-linear features of the project, such as parking lots and stations, are not exempt and must be consistent with the General Performance Criteria and the Development Criteria for Resource Protection Areas. (Both the General Performance Criteria and the Development Criteria are found in the Regulations.) During planning and design phases, site-specific surveys should be concluded to verify the presence or absence, and boundaries, of any Resource Protection Areas. (0407, 0407-A –10)

**Response:** *The boundaries of Resource Protection Areas (RPA) have been identified in the Final EIS. A discussion of Chesapeake Bay Preservation Areas including Resource Management Areas (RMA) and RPA can be found in Section 4.2 of the Final EIS and are illustrated in Figure 4.2-4. Impacts to RPAs from the Build Alternatives studied were minimized through an iterative design process.*

##### **Department of Conservation and Recreation of No Impact on Certain Water Resources**

**State Comment:** The Department of Conservation and Recreation has indicated that the proposed project will not affect any streams on the National Park Service Nationwide Inventory, Final List of Rivers, or existing or potential State Scenic Rivers. Nor will the project affect existing or potential State Scenic Byways. (0407, 0407-A –11)

**Response:** *This information is included in Section 4.2 of the Final EIS.*

## Recommendation to Develop an Environmental Management System

**State Comment:** Consider development of an effective Environmental Management System (EMS). An effective EMS will ensure that the proposed facility is committed to minimizing its environmental impacts, setting environmental goals, and achieving improvements in its environmental performance. DEQ offers EMS development assistance and recognizes facilities with effective Environmental Management Systems through its Virginia Environmental Excellence Program. (0407, 0407-A –13)

**Response:** *The Virginia DEQ Internet site states: “In April, 2000, DEQ launched the [Virginia Environmental Excellence Program](#), a voluntary program designed to encourage Virginia organizations to develop environmental management systems and pollution prevention plans. As part of its efforts to promote the use of environmental management systems (EMS), DEQ announced in June 2001 that it had developed an EMS of its own.” At this time, the Project Team has not made any decision regarding the Virginia Environmental Excellence Program for the Dulles Corridor Rapid Transit Project, but has already minimized impacts to natural resources through an iterative design process.*

## Comments on Virginia Pollutant Discharge Elimination System Stormwater General Permits

**State Comment:** Water Quality and Wetland Permitting. The Draft EIS addresses the need for obtaining Virginia Pollutant Discharge Elimination System (VPDES) Stormwater General Permits for construction activity that disturbs 5 or more acres of land (page 4-19, section 4.2.1). The project manager should be aware that the regulation on this subject is changing; sites that are between 1 and 5 acres will also be required to apply for coverage under this General Permit by March 10, 2003. (0407, 0407-A –21)

**State Comment:** Stormwater management facilities are proposed along the route to handle storm flow from the system (Draft EIS, section 2, Figure 2.3-16). The project manager should work with DEQ to ensure that necessary VPDES permits are obtained for these facilities. If de-watering of the tunnels for the underground Metrorail stations is necessary, a VPDES permit might be necessary for discharges resulting from this activity. (0407, 0407-A –22)

**State Comment:** Site-specific VPDES permits and/or VPDES Stormwater General Permits may also be needed for BRT stations and the Maintenance and Storage Facility contemplated under the BRT alternative. Similarly, if the Metrorail alternative is selected, permits may be required for discharges from the Service and Inspection Yard. The Yard is to include a car wash and stormwater management facilities of its own. If flow from the car wash is discharged to the sanitary sewer, then an industrial user permit is likely to be required for the wastewater treatment plant accepting the flow. (0407, 0407-A –23)

**State Comment:** The Draft EIS indicates that both VPDES and Virginia Water Protection Permits (VWPP) will be required for construction of the underground sections of the Metrorail, according to DEQ's Northern Virginia Regional Office. However, VWP permits will only be required if wetlands will be involved. (0407, 0407-A –24)

**State Comment:** This project may require a Virginia Water Protection Permit, which includes coordination of this project with the Virginia Marine Resources Commission, the Army Corps of Engineers and the DEQ through the Joint Permit Application process. (0407, 0407-A –35)

**Response:** *All permits that are required for implementation and construction of the LPA, a Metrorail Extension, will be identified through coordination with resource agencies and permits will be obtained prior to construction. The information contained in the above comments is reflected in Section 4.2 of the Final EIS, as appropriate. BRT was eliminated from further consideration after the public and interagency review and comment on the Draft EIS. The LPA is described in more detail in Chapter 2.*

## Avoiding and Mitigating Effects on State Waters

**State Comment:** The DEIS indicates all Build Alternatives will impact state waters, including wetlands. All attempts should be made to select the most feasible alternative that also avoids and minimizes potential direct and indirect impacts to wetlands and streams to the greatest extent practicable. We understand that impacts have been avoided and minimized by limiting proposed construction to the median of existing roadways as much as practicable. As the project progresses, please continue to investigate ways for additional avoidance and minimization of direct and indirect impacts to wetlands and streams to the greatest extent practicable. Examples of avoidance and minimization efforts include completely spanning wetlands to avoid impact and shifting the alignment to avoid or minimize wetland impacts. The selected alternative's unavoidable impacts to wetlands and streams will require full compensatory migration as explained in the DEIS. (0407, 0407-A –34)

*Response: The Metrorail Extension was selected as the LPA after public and agency review of and comment on the Draft EIS. Impacts to water resources such as wetlands are described in Section 4.2 of the Final EIS. Preliminary efforts have been made to minimize direct and indirect impacts to wetlands. During preliminary engineering and final design, the Project Team will continue to investigate methods for additional avoidance and minimization of direct and indirect impacts to wetlands and streams, as suggested. Where impacts are unavoidable, compensatory mitigation measures will be developed in coordination with resource agencies.*

## Avoiding and Minimizing Effects on State Waters During Construction

**State Comment:** Appropriate design and construction measures should be employed to avoid and minimize impacts to state waters during construction. All applicable best management practices should be used to minimize potential impacts. Machinery should be kept out of waterway and wetlands when possible. Machinery that must be operated within wetland areas should be maintained on mats in order to prevent tire rutting. In general, DEQ encourages the use of erosion and sediment control measures, adherence to storm water management regulations, and careful construction practices to minimize temporary impacts to state waters during site construction activities. (0407, 0407-A –36)

**State Comment:** In general, DEQ recommends that stream and wetland impacts be avoided to the maximum extent practicable. For unavoidable impacts, DEQ encourages the following practices to minimize the impacts to wetlands and waterways: operate machinery and construction vehicles outside of stream-beds and wetlands; use synthetic mats when in-stream work is unavoidable; erosion and sedimentation controls should be designed in accordance with the most current edition of the Virginia Erosion and Sediment Control Handbook. These controls should be in place prior to clearing and grading, and maintained in good working order to minimize impacts to State waters. The controls should remain in place until the area is stabilized. (See item 6, below.) Place heavy equipment, located in temporarily impacted wetland areas, on mats, geotextile fabric, or use other suitable measures to minimize soil disturbance, to the maximum extent practicable. Restore all temporarily disturbed wetland areas to pre-construction conditions and plant or seed with appropriate wetlands vegetation in accordance with the cover type (emergent, scrub-shrub, or forested). The project managers should take all appropriate measures to promote re-vegetation of these areas. Stabilization and restoration efforts should occur immediately after the temporary disturbance of each wetland area instead of waiting until the entire project has been completed. Place all materials which are temporarily stockpiled in wetlands, designated for use for the immediate stabilization of wetlands, on mats or geotextile fabric in order to prevent entry into State waters. These materials should be managed in a manner that prevents leachates from entering state waters and must be entirely removed within thirty days following completion of that construction activity. The disturbed areas should be returned to their original contours, stabilized within thirty days following removal of the stockpile, and restored to the original vegetated state. The project may require a Virginia Water Protection Permit, and it is likely to require a Virginia Pollutant Discharge Elimination System (VPDES) Stormwater permit. (0407, 0407-A –9)

**Response:** *As discussed in Section 4.2 of the Final EIS, the Project Team will follow the Public Facilities Manual, Virginia Erosion and Sediment Control Handbook, and all other applicable requirements.*

### **Coordination with Federal, State, and Local Governments to Minimize Effects**

**State Comment:** In general, the document states in numerous sections that all necessary environmental permits will be obtained, which satisfies the thrust of NRO concerns. However, close coordination with the various federal, state, and local governments will be key to ensuring that a project of this magnitude is completed with minimal environmental damage. (0407, 0407-A –39)

**Response:** *Coordination with key agencies will be conducted throughout the life of the Project.*

### **Commending the Project Team for Addressing Agency Comments on Water Resources**

**State Comment:** Thanks the Project Team for addressing comments regarding water quality and water permitting issues including impacts to wetlands and streams. Requests that the Project Team continue to investigate ways to reduce the impact on state waters. (0518, 4-01)

**Response:** *During preliminary engineering and final design, the Project Team will continue to coordinate with the Virginia Department of Environmental Quality (VDEQ) on any future water quality issues.*

### **Requirements for Submission of a Joint Permit Application**

**State Comment:** All work performed in, over, or under waters within the Commonwealth of Virginia would require the submission of a Joint Permit Application (JPA) to the Virginia Marine Resources Commission (VMRC). VMRC would then act as a clearinghouse, distributing copies of the application to state, local, and federal agencies for review and comments. Detailed engineered plans showing the exact location of all water crossings will be required to determine whether or not a permit will be required. (0518, 4-02)

**Response:** *The Project Team will coordinate with VMRC on these issues during preliminary engineering and final design.*

### **Regional Agency Comments**

#### **Notice of Need to be Consistent with the Virginia Coastal Zone Management Plan**

**Regional Comment:** DEIS Section 4.2.3.5 states that the project is not in the coastal zone. It is our understanding that Fairfax County is part of the Virginia Coastal Zone, and that consistency with the Virginia Coastal Zone Management Plan should be addressed in the EIS. (0440, 0440-A –9)

**Response:** *Thank you for the correction. The portion of the Project that extends through Fairfax County is considered to be within the coastal zone. Section 4.2.of the Final EIS has been updated accordingly.*

### **Local Agency Comments**

#### **Addressing Effects on Water Resources in the City of Falls Church**

**Local Comment:** The draft EIS has failed to address the environmental impact to surface and groundwater as it might affect the City [of Falls Church], the City's water distribution system that serves much of the Corridor, and Four Mile Run. (0122, 0122-A-5)

**Local Comment:** The Draft EIS addresses possible impacts to surface and ground water. Section 4.1.5.2 acknowledges the possibility of ground water degradation from contaminants, but the ground water study does not address Falls Church ground water. (0122, 0122-A –24)

**Local Comment:** Furthermore, the inventory of surface water sources that might be negatively impacted within the watershed of the affected project area omits the Four Mile Run and its tributaries. This is a significant omission that must be addressed. (0122, 0122-A –25)

**Local Comment:** Additionally, Section 4.1.3.2 addresses consideration of Fairfax and Loudoun County public water and waste water systems, but omits consideration of possible impact to the Falls Church water system, which not only serves Falls Church City but also a substantial portion of the project area. This omission is very significant and must be addressed by analyzing possible impacts and proposing mitigation measures. (0122, 0122-A –26)

**Local Comment:** The draft EIS has failed to address the environmental impact to surface and groundwater as it might affect the city's [of Falls Church] water distribution system that serves much of the corridor and Four Mile Run. (0122, 0164-T –6)

***Response:** The residents of the City of Falls Church obtain their water from the Public Utilities Division of the City of Falls Church Department of Environmental Services, a water distribution agency that purchases water from the Washington Aqueduct Division of the Baltimore District Army Corps of Engineers (WAD). WAD gets its water from the Potomac River through intakes at Great Falls and Little Falls in Maryland. WAD has two water treatment plants, the McMillan and Dalecarlia plants. Generally, Falls Church receives its water from the Dalecarlia plant. None of the improvements proposed under the Locally Preferred Alternative (LPA) would affect the Potomac River or the water distribution system that serves the City of Falls Church. Likewise, groundwater within the City of Falls Church is not expected to be affected.*

*Four Mile Run is situated outside of the study area for water resources. Some of the proposed improvements near the West Falls Church Yard and in the median of the Dulles Connector would be located near an unnamed tributary to Pimmit Run. These water resources do not drain to Four Mile Run. None of the proposed improvements are located close enough to Four Mile Run or its watershed to cause effects. In addition, the water intake pipes for the Great Falls and Little Falls plants are located upstream of Pimmit Run (and well upstream of Four Mile Run).*

*As referenced in Section 4.2 of the Final EIS, best management practices (BMPs) would be employed during construction and operation of the transit improvements. With the use of these BMPs for stormwater management and erosion and sediment control during the construction and operation of the selected alternative, degradation of surface water and groundwater quality would be minimal and be limited to the immediate vicinity of the proposed improvements. Therefore, resources such as the Potomac River, the water supply controlled by the WAD, and Four Mile Run, would not be affected.*

**Local Comment:** Continuous coordination with the Department of Public Works and Environmental Services and the Department of Planning and Zoning should be maintained to ensure compliance with the requirements of Virginia's Chesapeake Bay Preservation Area Designation and Management Regulations and the County's Chesapeake Bay Preservation Ordinance (to be amended in March 2003). (0479, 0479-L –5)

***Response:** Thank you for your input. Coordination with these agencies will continue throughout the life of the Project.*

## **Public Comments**

### **Suggestion to Employ Bio-Retention Techniques**

**Public Comment:** Suggest employing “bio-retention techniques” in stormwater management design. This concept uses vegetative media to filter out contaminants and often decreases pipe sizes and swm pond sizes, as well as looks nicer as vegetation than pavement. I’ve heard Loudoun county is receptive to this attractive alternative. It can be used in landscaped strips. (0079, 0079-CC-2)

**Response:** *During preliminary engineering and final design, bio-retention techniques will be explored further for possible incorporation into stormwater management design. Furthermore, as referenced in Section 4.2 of the Final EIS, adequate measures for stormwater management would be in accordance with the requirements of the Commonwealth of Virginia, and Fairfax and Loudoun counties that encourage minimization of clearing and use of bio-retention facilities whenever practical.*

### **Mitigation of Cut-Through Traffic in the Westhampton Neighborhood**

**Public Comment:** The issue of cut-through traffic also raises problems of pollution for the branch of Pimmit Run which goes through the Westhampton Neighborhood. Pimmit Run is a tributary of the Potomac River and therefore is a Water of the United States under the federal Clean Water Act. If cut-through traffic is allowed in Westhampton, leaking gasoline and oil from automobiles will find its way directly into Pimmit Run through the culvert under Grayson Place every time it rains. The branch of Pimmit Run in that area provides a source of drinking water for wildlife in the Westhampton neighborhood including migratory birds which are protected by federal law. We have seen over thirty species of birds, including migratory waterfowl, four species of reptiles, and at least six species of wild mammals on our property alone. Therefore protection of wildlife is another important reason to mitigate to reduce cut-through traffic in the Westhampton neighborhood. (0388, 0388- L-4)

**Response:** *The present condition of Pimmit Run has been rated “Poor” by Fairfax County for both water quality and habitat due to the intense development that surrounds this stream corridor. Concrete-lined channels draining the area surrounding Pimmit Run have already contributed numerous amounts of highway constituents into the stream. Pimmit Run may provide a source of drinking water for wildlife in this area, but the water source is already receiving pollutants from upstream highway runoff. Implementation of the LPA is not anticipated to alter these existing conditions; the wildlife patterns associated with the Pimmit Run corridor would not be altered due to anticipated cut-through traffic.*

### **Addressing Section 4(f) Regulations in the Tysons Central B Station Area**

**Public Comment:** I could not see any reference to the EQC area that would be taken for the Tysons Central B station area on Westpark Drive. Although it is not a park per se, subject to Section 4(f) it should be sacrosanct with regard to the Fairfax County Comprehensive Plan. (0429, 0429-E –6)

**Response:** *The Project Team recommended and the decision-makers selected the Metrorail Extension with Alignment T6 in Tysons Corner as the Locally Preferred Alternative. This comment concerned the potential effects of Alignment T4, which was eliminated from further consideration after the public and agency review and comment on the Draft EIS.*

### **Effect on the Difficult Run Watershed**

**Public Comment:** How will construction activities and increased traffic congestion on Hunter Mill Road affect Fairfax County's largest watershed, the fragile Difficult Run Watershed, water and air quality? (0460, 0460-L –8)

**Public Comment:** For water resources, the Draft EIS states “minor additional long-term effects to water resources, potential additional runoff impacts from increases in allowable density at station/stop areas”. Each of these factors needs to be quantified and evaluated, particularly in view of the fragility and burdens placed on scarce water resources in the area and in light of the downstream attributes of Difficult Run. (0510, 4-02)

**Response:** *These effects are discussed in Section 4.2 of the Final EIS. Mitigation of Project-related impacts would be through a series of BMPs. With these BMPs in place, long-term Project-related impacts to water resources would be minimal. As discussed in Chapter 9 of the Final EIS, the mitigation of secondary development effects would be done through the county development permitting processes.*

#### **Effects on Well Water Used by Residents in the Mid-Corridor**

**Public Comment:** Some homes in the Mid-Corridor use well water and depend on the aquifer for water needs. The Draft EIS does not adequately address the potential for aquifer contamination. (0510, 4-06)

**Response:** *Section 4.1 of the Final EIS discusses the Project-related impacts to groundwater resources. Because the Metrorail Extension would result in a small increase in impervious surface, there would be minor effects to the groundwater recharge capacity of the local aquifers. However, this effect would be partially offset by the increased aquifer recharge that would occur as a result of the proposed stormwater management facilities.*

#### **Secondary Development Effects on the Difficult Run Ecosystem**

**Public Comment:** Potential effects due to secondary development on aquatic biota and habitat are summarily stated as “no additional impacts are projected”. I find this astounding particularly in light of the fragility of the Difficult Run Ecosystem. The dramatically increased footage of the impervious surfaces in higher-density bonus areas near stations can only result in intensification of runoff, yet the Draft EIS states that there will be no additional impact. (0510, 4-03)

**Response:** *As discussed in Section 4.3 of the Final EIS, since the streams located in the Mid-Corridor have been channelized, and since the Metrorail Extension, and therefore new development, would be located in the median of the Dulles International Airport Access Highway (DIAAH), no additional impacts to aquatic biota are anticipated. Permanent stormwater management ponds would be located along the DIAAH and Dulles Toll Road to replace the grassy swales currently in the median of the DIAAH. These ponds would add a marginal amount of aquatic habitat to the area. However, as discussed in Chapter 9 of the Final EIS, the mitigation of secondary development effects would be done through the county development permitting processes.*

#### **Concern About Run-Off from Stormwater Management Pond**

**Public Comment:** Concerned about a proposed stormwater management facility on part of his property. Concerned that the potential pollutants from run off will stay in the pond and eventually seep into local groundwater. (0464 4-01)

**Response:** *The pollutants in these ponds settle out as solids through the sediment residue at the bottom of the pond. Through regular maintenance of the ponds and protective layers of the pond bottom, the pollutants would be removed without seeping into the local groundwater and underlying aquifers.*

## **B. Supplemental Draft EIS Comments**

### **Federal Agency Comments**

#### **Issues Related to the Chesapeake Bay Resource Management Area**

**Federal Comment:** According to the Northern Virginia Regional Commission, Fairfax County and the Town of Herndon have enacted jurisdiction-wide Chesapeake Bay Resource Management Area (RMA) designations. This designation requires that all development result in a no-net-increase standard for phosphorus loadings, based on the jurisdiction's average imperviousness. In addition, since a Resource Management Area is one of two classifications of a Chesapeake Bay Preservation Area, the threshold for application of the Erosion and Sediment Control Plan is 2,500 square feet of land disturbance, rather than 10,000 square feet in areas not so designated. (0080 0094-7)

**Response:** *The boundaries of Resource Protection Areas (RPA) have been identified in the Final EIS. A discussion of Chesapeake Bay Preservation Areas including Resource Management Areas (RMA) and RPA can be found in Section 4.2 of the Final EIS and are illustrated in Figure 4.2-4. Impacts to RPAs from the Build Alternatives studied were minimized through an iterative design process.*

### **State Agency Comments**

#### **Consistency with Regulations for Stormwater Management**

**State Comment:** Special attention should be given to post-construction stormwater quality management, according to the Northern Virginia Regional Commission. The project proponents must adhere to the post-development water quality requirements set out in the Virginia Stormwater Management Regulations. (0080 0094-5)

**State Comment:** A Virginia Water Protection Permit will be required for this project pursuant to 9 VAC 25-210-10 et seq. In addition, because it is likely to disturb one acre or more of land area, the project will require a Virginia Pollutant Discharge Elimination System (VPDES) Stormwater General Permit for Construction Activities. (0080 0094-10)

**State Comment:** The Marine Resources Commission has permit jurisdiction over any encroachments in, on, or over any state-owned rivers, streams, or creeks. If any portion of the project involves any encroachments channelward of ordinary high water along natural rivers and streams, a permit may be required from the Commission. (0080 0094-11)

**State Comment:** Pursuant to the Coastal Zone Management Act of 1972, as amended, the applicant agency for federal licensing or permitting is required to certify the consistency of its activities affecting Virginia's coastal resources or coastal uses with the Virginia Coastal Resources Management Program (VCP) (see section 307( c ) (1) of the Act and the Federal Consistency Regulations at 15 CFR Part 930, sub-part D, section 930.57. (0080 0094-15)

**State Comment:** DEQ's Water Division recommends strict adherence to erosion and sediment control practices and stormwater management requirements, and effective monitoring of construction activities to ensure that erosion controls and stormwater management practices are adequately preventing sediment and pollution from entering adjacent surface waters. (0080 0094-2)

**State Comment:** [T]he project proponents should prepare and implement Erosion and Sediment Control Plans and Stormwater Management Plans that comply with state law. The project proponents are ultimately responsible for achieving project compliance through oversight of on-site contractors, regular field inspection, prompt action against non-compliance, and/or other mechanisms consistent with agency policy. (0080 0094-4)

**Response:** All necessary permits required for the implementation of the LPA will be identified through coordination with resource agencies and obtained prior to construction. All Project activities will be completed in accordance with all relevant federal, state, and local laws and regulations.

**State Comment:** The Regional Commission also recommends that the proponents explore opportunities, where possible, for retrofit of existing stormwater quantity facilities to stormwater quality facilities through new construction activities. (0080 0094-6)

**Response:** As documented in Section 4.2 of the Final EIS, the Project Team will follow the Public Facilities Manual, Virginia Erosion and Sediment Control Handbook, and all other applicable requirements.

### **Issues Related to Watershed Management, Wetlands, and Water Quality**

**State Comment:** The document should reference Fairfax County's development of a watershed management plan for the Difficult Run watershed (Section 4.2). (0091 0106-23)

**Response:** Thank you for the information. The Project Team will design the Project to appropriate federal, state, and local standards.

### **Regional Agency Comments**

#### **Issues Related to the Chesapeake Bay Resource Management Area**

**Regional Comment:** Please be advised that Fairfax County and the Town of Herndon have enacted jurisdiction-wide Chesapeake Bay Resource Management Area (RMA) designation. This RMA designation requires that all development result in a no-net-increase standard for phosphorus loadings, based on the jurisdiction's average imperviousness. (0006 0006-1)

**Response:** The boundaries of Resource Protection Areas (RPA) have been identified in the Final EIS. A discussion of Chesapeake Bay Preservation Areas including Resource Management Areas (RMA) and RPA can be found in Section 4.2 of the Final EIS and are illustrated in Figure 4.2-4. Impacts to RPAs from the Build Alternatives studied were minimized through an iterative design process.

#### **Consistency with Regulations for Stormwater Management**

**Regional Comment:** Special attention should be given to post-construction stormwater quality management. The developing agency must adhere to the post-development water quality requirements set forth by the Virginia Stormwater Management Regulations (VR 215-02-00 Part IV and S2.3). Meeting the Virginia Stormwater Management Regulations should comply with the requirements that state agencies meet the local ordinances pursuant to the Virginia Chesapeake Bay Act.

Please refer to the Northern Virginia BMP Handbook for calculation procedures. A copy of the handbook is available on NVRC's website, [www.novaregion.org](http://www.novaregion.org). (0060 0006-2)

**Response:** All necessary permits required for the implementation of the LPA will be identified through coordination with resource agencies and obtained prior to construction. All Project activities will be completed in accordance with all relevant federal, state, and local laws and regulations.

**Regional Comment:** We would also suggest that, where possible, opportunities for retrofit of existing stormwater quantity facilities to stormwater quality facilities through new construction activities should be explored. NVRC's Guidebook for Maintaining BMPs in Northern Virginia is available, without charge, should you need it, and can also be downloaded from our website, or call me if you would like to receive a copy to use as a reference. (0060 0006-3)

**Response:** As documented in Section 4.2 of the Final EIS, the Project Team will follow the Public Facilities Manual, Virginia Erosion and Sediment Control Handbook, and all other applicable requirements.

### **Local Agency Comments**

#### **Issues Related to Watershed Management, Wetlands, and Water Quality**

**Local Comment:** Please ensure that all the elements of the RSCOD [River and Stream Corridor Overlay District] have been taken into account when determining impacts to water resources. (0084 0099-4)

**Response:** All necessary permits required for the implementation of the LPA will be identified through coordination with resource agencies and obtained prior to construction. All Project activities will be completed in accordance with all relevant federal, state, and local laws and regulations.

**Local Comment:** The County prefers any wetland impacts incurred in Loudoun County from the proposed project be mitigated within the Suburban Policy Area. However, if a wetland mitigation bank is not available within the Suburban Policy Area at the time the impacts are incurred County staff prefers that impacts to wetlands within Loudoun County be mitigated at the Bull Run Wetland Bank as shown on Figure 4.2-2. (0084 0099-5)

**Response:** DRPT and WMATA will continue to coordinate with Loudoun County regarding the mitigation of wetland impacts within the County.

### **Public Comments**

#### **Stormwater Management Ponds Locations and Potential Effects**

**Public Comment:** The second issue is the storm water pond. This decision, the location of it, we believe will cause various health and safety hazards for children, will remove valuable ground cover, and will have an ecological impact on the wildlife and provide an insect breeding ground. We recommend that the pond be constructed in the cul-de-sac at the end of Chathams Ford Drive, where the impact would be far less. (0174, 0174-T –6)

**Public Comment:** The proposed location of the [stormwater] pond will cause various health and safety hazards for children, will also remove valuable ground cover and will provide an insect breeding ground. Construct the pond in the cul-de-sac at the end of Chathams Ford Drive where the impact would be less direct. (0174, 0300-L –12)

**Public Comment:** The Draft Environmental Impact Statement and Proposed General Plans for the project propose that a stormwater pond be created on the property of 9620 Chathams Ford Drive. This property backs up to the Toll Road. In order to create the pond, at least 100 trees will have to be cut down. Our concerns about the pond are as follows:

1. It will remove valuable ground cover in the form of the 100 trees.
2. These trees also provide sound protection to 9620 Chathams Ford Drive and to other homes in the neighborhood. The trees are also an important visual barrier from the Toll Road.
3. The pond will also create a drowning hazard to children because it will hold standing water. Chathams Ford Drive is already hazardous to children because of inadequate safety barriers between the street and the Toll Road.
4. The pond will create a breeding ground for mosquitoes and other predatory insects, which multiply rapidly in standing water. This situation raises the threat of West Nile virus, especially for senior citizens and immuno-compromised residents who live in the neighborhood.

5. In addition, it will create a place where children may fall and injure themselves because of the depth of the pond.
6. The pond will impair the value of 9620 Chathams Ford Drive.
7. Finally, the pond will destroy one of the last remaining natural habitats in the area. Destruction of the trees to construct the pond will take away shelter and food from the deer, and likely will drive them more actively onto streets and highways, thereby creating life-threatening conditions for both humans and animals. (0174, 0300-L –13)

**Public Comment:** In addition, the proposed Stormwater pond to be located on the property of 9620 Chathams Ford Drive would remove approximately 100 trees which provide at least some sound protection. (0174, 0300-L –8)

**Public Comment:** We recommend that the Task Force consider moving the pond to the cul-de-sac at the end of Chathams Ford Drive. This area will have less of a direct impact and no additional homes can be built there because of its proximity to the Toll Road. (0174, 0300-L –14)

**Public Comment:** Although the "pond" is said to be a dry pond, I have consulted a licensed professional engineer who was formerly employed by a division of Fairfax County that maintained these ponds. He informed me there will always be some moisture that will serve as an excellent breeding ground for mosquitoes. This situation raises the threat of West Nile Virus, especially for the senior citizens and immunocompromised who live in our [Chathams Ford] neighborhood. (0383, 0383- L- 3)

**Public Comment:** The pond [Chathams Ford] will create a drowning hazard for my children and other neighborhood children. I understand the "pond" will not hold water all the time, however, after storms, this area will be a drowning hazard of which the county and state will be directly liable for. It will also create hazards of which my children and other neighborhood children can fall and injure themselves. (0383, 0383- L-2)

**Public Comment:** The acquisition of my land and the construction of this pond will severely impact the monetary resale value of my home [Chathams Ford]. My wife and I had planned on remaining in this home for the next 20-30 years. It is very difficult to predict the monetary impact over this time period, however, I would estimate it to be in excess of one million dollars. (0383, 0383- L-4)

**Public Comment:** My wife and I are in favor of the Rapid Transit Project, however, we are vehemently against the acquisition of our property for the construction of a storm water retention pond. If the pond were located at the end of Chathams Ford Drive in the vacant cul de sac, this would provide for minimal resident disruption and impact. This area is not adjacent to any homes. (0383, 0383- L-6)

**Public Comment:** This letter is written in regards to the proposed Dulles Corridor Rapid Transit Project. My wife and I reside in Vienna and our backyard borders the Dulles Toll Road. It is proposed that approximately 1 acre of our land be acquired for the construction of a storm water retention pond if the transit project is approved for Metrorail service. The construction of this retention pond will adversely affect our lives and property in a drastic manner. The following points describe the severe impact that this portion of the project will have on our family and our property: The construction of the "pond" will remove valuable mature trees and ground cover. These trees are the only natural sound and visual protection from the Toll Road. Removal of these trees will provide not only the eye sore of the Toll Road but will also increase the already intolerable noise from the highway. At this time, no sound wall/barrier exists in the neighborhood nor is there a plan for the construction of a wall in the Environmental Impact Statement. (0383, 0383-L –1)

**Response:** *The locations shown in the General Plans of Best Management Practice (BMP) and Stormwater Management (SWM) ponds throughout the corridor are approximate and were included to illustrate that a potential need for one of these facilities exists in the vicinity of the location shown. During preliminary engineering, a comprehensive drainage study will be undertaken for the entire corridor to address final locations of all BMP and SWM ponds. This effort should result in some facilities being eliminated, consolidated, or relocated to further*

*minimize impacts to the adjacent areas. See the final General Plans (Final EIS Volumes IV (Line) and V (Facilities)) for more information.*

### **Issues Related to Watershed Management, Wetlands, and Water Quality**

**Public Comment:** That Phase 1 would not adversely affect streams and water quality, and that a full-project would only affect 245 linear feet of streams and water quality (E.g., at TABLE 2-2). Again, this claim fails to evaluate the protracted impact of a massive construction project, the increase in impervious surfaces while construction is underway, and the likely shifting of vehicular traffic onto non-toll roads if Route 267 tolls increase as a funding mechanism. (0068 0173-20)

**Response:** *The Final EIS provides an estimate of the direct impacts to streams and wetlands within the corridor that would be caused by the Project based on current design assumptions. This information will be updated and refined as necessary as part of preliminary engineering and final design. Both Section 4.2 of the Final EIS and the Natural Resources Technical Report (June 2002) provide a detailed explanation of the methodology used to calculate stream and wetland impacts in the corridor. Both the Full LPA and the Wiehle Avenue Extension would be constructed in accordance with all relevant federal, state, and local laws and permitting regulations. DRPT and WMATA have committed to use accepted Best Management Practices (BMPs) to ensure that areas other than those directly impacted would not be affected by the construction and operation of the Project.*

**Public Comment:** Moreover, the claim is all the more suspect since Phase 2 of the envisioned project goes through wetlands throughout the Materials Road-Greenway-Anane Way areas (Sheet 10) and various project sites abut or go through wetlands shown in Sheet 11. (0068 0173-21)

**Response:** *The potential long-term impacts to wetlands caused by the Project were identified and calculated in coordination with the U.S. Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers, and the Virginia Department of Environmental Quality. This information will be updated and refined as necessary throughout preliminary engineering and final design. The Project would be constructed in accordance with all relevant federal, state, and local laws and permitting regulations. DRPT and WMATA have committed to use accepted Best Management Practices (BMPs) to ensure that areas other than those directly impacted would not be affected by the construction and operation of the Project.*

**Public Comment:** not to mention the negative environmental impact that widening [Wiehle] will inflict on Lake Anne and its drainage system. (0105 0123-3)

**Response:** *Lake Anne is located outside the study area for water resources and is not part of any of the drainage systems that would be affected by the proposed improvements associated with the Project. DRPT and WMATA have committed to use accepted Best Management Practices (BMPs) during construction and operation of the proposed Full LPA and the Wiehle Avenue Extension. With the use of these BMPs for stormwater management and erosion and sediment control, degradation of surface water quality would be minimal and would be limited to the immediate vicinity of the proposed improvements. Therefore, resources such as Lake Anne would not be affected.*

**Public Comment:** Our final concern is one of drainage. The runoff of water from the very steeply graded existing berm has caused some major drainage problems in the back of our property. We are at a low spot along the Dulles Connector Road corridor and the runoff from the berm along the entire section of homes in our neighborhood ends up accumulating at the back of our property. During this admittedly very wet year we had standing water in the back along the berm area all year long, which resulted in an infestation of mosquitoes. We would hope that during the construction phase the drainage problems at the back of the properties in our area will be addressed. (0081 0096-2)

**Response:** *The Dulles Corridor Rapid Transit Project is not responsible for mitigating existing drainage problems along the corridor. If the area in question is disturbed by any grading associated with temporary or permanent facilities of the Project, the area will be provided adequate drainage during and following construction in compliance with all applicable drainage codes and standards.*

**Public Comment:** The adoption of the Wetland, EQC and RPA standards by Fairfax and Loudoun Counties may conflict with the objective of providing concentrated, mixed use, high density projects at rail stops. The Tysons East Station will provide a challenge to balance the Scotts Run and Pimmit Run RPAs and yet maximize development densities. Provisions such as “no net loss” of wetlands, EQCs and RPAs provision must be adopted to meet both environmental and smart growth objectives. Compensatory replacement area(s) or prorate share contributions for downstream channel stabilization projects should be limited to the Scotts Run Stream Valley below the DAAR and connector. (0113 0132-2) (0123 0158-3)

**Response:** *DRPT and WMATA will continue to coordinate with both Fairfax and Loudoun counties and property holders regarding these issues during preliminary engineering and final design.*

### **Impacts on Water Resources caused by Ancillary Development**

**Public Comment:** That Phase 1 will result in “Reduced Impervious” areas as compared with the full LPA project (i.e., described as “more impervious”) (e.g., at TABLE 2-2). Defensible, informative data quantifying the incremental addition of impervious surfaces from the current baseline needs to be presented, and its impact assessed. Further, the impact of a protracted construction period in this regard needs to be quantified and evaluated. (0068 0173-22)

**Public Comment:** 4.2, page 4-4. The Board of Supervisors did not adopt IDA for Tysons which would have provided a mechanism for developing in areas adjacent to stations that had been designated for preservation based on environmental factors. Therefore special considerations for RPAs and EQCs around the four Tysons stations must be carefully coordinated. Discussions of no net loss mitigation by providing downstream improvements to offset RPA encroachments at rail stations appears to be an acceptable alternative to the environmental community. Wetland mitigation will be addressed on a case by case basis through the Corps of Engineers, but mitigation will be required for Tysons East Station and the WEST\*GROUP master plan does not contemplate onsite mitigation. (0113 0132-7)

**Public Comment:** special considerations for RPAs and EQCs around the four Tysons stations must be carefully coordinated. Discussions of no net loss mitigation by providing downstream improvements to offset RPA encroachments at rail stations appears to be an acceptable alternative to the environmental community. Wetland mitigation will be addressed on a case by case basis through the Corps of Engineers, but mitigation will be required for Tysons East Station and the WEST\*GROUP master plan does not contemplate onsite mitigation. (0123 0158-9)

**Response:** *The Final EIS provides an estimate of the direct impacts to streams and wetlands within the corridor that would be caused by the Project based on current design assumptions. This information will be updated and refined as necessary during preliminary engineering and final design. Both Section 4.2 of the Final EIS and the Natural Resources Technical Report (June 2002) provide a detailed explanation of the methodology used to calculate stream and wetland impacts in the corridor. Both the Full LPA and Wiehle Avenue Extension would be constructed in accordance with all relevant federal, state, and local laws and permitting regulations. DRPT and WMATA have committed to use accepted BMP to ensure that areas other than those directly impacted would not be affected by the construction and operation of the Project. DRPT and WMATA will continue to coordinate with both Fairfax and Loudoun counties and property owners regarding these issues during preliminary engineering and final design.*

### 4.3 Aquatic Biota and Habitat

#### A. Draft EIS Comments

##### Federal Agency Comments

##### **Concern About Effects From Rail Yard Leads at Site 7 and 15**

**Federal Comment:** Concerned that the rail yard lead for Site 15 would cut through 2,500 feet of forested wetlands and cross Horsepen Run. Feel that Site 7 is the most viable both operationally and environmentally since it would have floodplain but not wetland impacts. Suggest that the Project Team coordinates with the U.S. Army Corps of Engineers and VDEQ to provide documentation of impacts in the Final EIS. The Final EIS must demonstrate that Site 15 is the least damaging practicable alternative if it were to be approved. (0485, 4-01)

**Response:** *The Project Team is aware of these concerns and will continue to coordinate with the Federal Aviation Administration (FAA) during preliminary engineering and final design. Every effort will be made to avoid and/or minimize impacts to natural resources during the design process. Yard Site Y7 was eliminated from consideration after the public and agency review and comment on the Draft EIS.*

#### B. Supplemental Draft EIS Comments

##### Public Comments

##### **Affected Upland**

**Public Comment:** f. A detailed evaluation of affected prime upland areas and streams with glade habitats needs to be presented and assessed for Phase 1 construction. (0068 0173-23)

**Response:** *Sections 4.3 and 4.4 of the Final EIS describes the potential effects of the full LPA and the Wiehle Avenue Extension on aquatic and terrestrial biota and habitats in the corridor. Additional detail on the analysis was provided in the Natural Resources Technical Report (June 2002). Impacts to upland areas are minimal, most of which are of limited importance for terrestrial wildlife and serve mostly as foraging areas. There would be no additional effects to aquatic habitat as a result of the Wiehle Avenue Extension. If the Full LPA is not implemented by 2025, then an additional 0.1 acres of wetland W-80 would be affected near the Herndon-Monroe Park-and-Ride to accommodate an expansion of park-and-ride capacity.*

### 4.4 Terrestrial Biota and Habitat

#### A. Draft EIS Comments

##### State Agency Comments

##### **Mitigate Effects on Forest Lands During Construction**

**State Comment:** Forest and Tree Protection. According to the Department of Forestry, this project will not significantly affect forest lands of the Commonwealth. In order to protect trees in project construction areas from the effects of this project, the trees should be marked and fenced at least to the dripline or the end of the root system, whichever extends farther from the tree stem. Marking should be done with highly visible ribbon so that equipment operators see the protected areas easily. Parking and stacking of heavy equipment, construction materials, or soil stockpiles near trees can damage root systems by compacting the soil. Soil compaction, from weight or vibration, affects root growth, water and nutrient uptake, and gas exchange. If parking and stacking are unavoidable, temporary crossing bridges, or mats to minimize soil compaction and mechanical injury to plants, should be used. Soil stockpiles should be covered to prevent

soil erosion and fugitive dust. (0407, 0407-A –12)

**Response:** *The Project Team will comply with federal and state laws and will implement BMPs during construction of the Project.*

## **Public Comments**

### **Effect of Stormwater Facilities on Natural Resources**

**Public Comment:** The [Stormwater management] pond [near Chathams Ford] will destroy one of the last remaining natural habitats in the area. Destruction of the trees to construct the pond will take away shelter and food from the deer, and likely will drive them more actively into streets and highways, thereby creating life-threatening conditions for both humans and animals. (0383, 0383- L-5)

**Response:** *Construction of the pond would reduce the available habitat for deer, but not to the point that deer would be forced onto nearby roads. Several wildlife corridors are accessible from the Chathams Ford Road vicinity and include Difficult Run, Wolfrap Run, and Courthouse Spring. Forested corridors parallel the Dulles Toll Road from Beulah Road to Route 7 providing a transportation route for wildlife.*

**Public Comment:** Draft EIS does not refer to effects to terrestrial biota and habitat from 888% increase in density at mid-corridor stations. (0510, 4-04)

**Response:** *Secondary effects to terrestrial habitat would be minimal and would primarily be the result of clearing and grading areas of habitat. See Chapter 9 of the Final EIS for a discussion of the secondary and cumulative effects of the Project.*

### **Replace Trees Destroyed During Construction**

**Public Comment:** Provide replacement trees within the corridor for those destroyed. Use sustainable species for the area's climate and soils. (0487 4-01)

**Response:** *The Project Team will comply with federal and state laws and will implement BMPs during construction.*

### **B. Supplemental Draft EIS Comments**

No comments pertaining to this topic were received.

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

### **A. Draft EIS Comments**

#### **State Agency Comments**

#### **Timing of Survey for Rare, Threatened, and Endangered Species**

**State Comment:** Commenter would like to look at the survey for rare, threatened, and endangered species performed by Coastal Resources, Inc. in April and August of 2000, prior to its inclusion in the Final EIS. Commenter needs to verify the results and verify that the survey was conducted during the appropriate time of year. Concerned that the rare diabase plant, earleaf foxglove (*Agalinis auriculata*) may have been missed in the August survey due to the difficulty in verifying the plant in its vegetative state. The actual flowering period for the plant is in September. (0519, 4-01)

**Response:** According to the *Manual of Vascular Plants of Northeastern United States and Adjacent Canada* by Gleason and Cronquist (New York Botanical Garden, 1991), the flowering period of the ear-leaf foxglove (*Agalinis auriculata*) occurs between August and September. All field surveys relating to rare, threatened, and endangered species known to occur in diabase glades were based on the information presented in this manual. The survey for the presence of state and/or globally rare diabase glade plant species was conducted on Dulles Airport property for potential Yard Site 15 on August 16, 2002. The Project Team will forward the documentation to Rene Hypes at the Department of Conservation and Recreation as part of the agency coordination process.

### DCR Recommendation for Survey of Potential Suitable Habitat For Rare Diabase Plans

**State Comment:** Natural Heritage and Wildlife Resources. According to the Department of Conservation and Recreation (DCR), "natural heritage resources" are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geological formations. According to DCR files, several rare plants may occur in project locations if suitable habitat is present. These plants are typically associated with prairie vegetation and inhabit semi-open diabase glades in Virginia. Diabase glades are characterized by historically fire-dominated grassland vegetation on relatively nutrient-rich soils underlain by Triassic bedrock. Diabase flatrock, a hard, dark-colored volcanic rock, is found primarily in northern Virginia and located within the geologic formation known as the Triassic Basin. Where the bedrock is exposed, a distinctive community type of drought-tolerant plant occurs. Diabase flatrocks are extremely rare natural communities that are threatened by activities such as quarrying and road construction. In Northern Virginia, diabase supports occurrences of several globally rare and state rare plant species (see the "Definition of Abbreviations" on pages 2 and 3 of the attached August 1, 2002 comments from DCR). These include: earleaf foxglove (*Agalinis auriculata*), white heat aster (*Aster ericoides*), blue-hearts (*Buchnera americana*), hairy beardtongue (*Penstemon hirsutus*), downy phlox (*Phlox pilosa*), stiff goldenrod (*Oligoneuron rigidum* var. *rigidum*), marsh hedgenettle (*Stachys pilosa* var. *arenicola*). The earleaf foxglove is currently tracked as a species of concern by the U.S. Fish and Wildlife Service; however, this designation has no legal status, according to DCR. Because the project corridor has the potential to support populations of these natural heritage resources, DCR recommends an inventory of suitable habitat in the study area. With the survey results, DCR can more accurately evaluate potential resource impacts and recommend specific protection measures to minimize the impacts. In this regard, the Department of Conservation and Recreation's Division of Natural Heritage employs biologists who are qualified and available to conduct inventories for rare, threatened, and endangered species. We recommend that the project manager (Department of Rail and Public Transportation, the Washington Metropolitan Area Transit Authority, or other project management agency) contact the Division of Natural Heritage (Christopher Ludwig, Natural Heritage Inventory Manager, telephone (804) 371-6206) to discuss arrangements for field survey work. The Department of Conservation and Recreation has not surveyed any sites within the project area (see Draft EIS, pages 4-77 through 4-81, section 4.5.3), but recommends doing so before September ends if possible. The Draft EIS concludes that there is no suitable habitat for rare diabase plants (page 4-81); this conclusion should be re-evaluated during the appropriate season. (0407, 0407-A -2)

**State Comment:** According to the information currently in our files, several rare plants, which are typically associated with prairie vegetation and inhabit semi-open diabase glades in Virginia may occur at this location if suitable habitat is present. Diabase glades are characterized by historically fire-dominated grassland vegetation on relatively nutrient-rich soils underlain by Triassic bedrock. Diabase flatrock, a hard, dark-colored volcanic rock, is found primarily in northern Virginia counties and is located within the geologic formation known as the Triassic Basin. Where the bedrock is exposed, a distinctive community type of drought-tolerant plants occurs. Diabase flatrocks are extremely rare natural communities that are threatened by activities such as quarrying and road construction (Rawinski, 1995). (0407, 0407-A -25)

**State Comment:** In Northern Virginia, diabase supports occurrences of several global and state rare plant species: earleaf foxglove (*Agalinis auriculata*, G2/S1/SOC/NS), white heath aster (*Aster ericoides*, G5/S2/NF/NS), blue-hearts (*Buchnera americana*, G3G4/S1/NF/NS), hairy beardtongue (*Penstemon hirsutus*, G4/S2/NF/NS), downy phlox (*Phlox pilosa*, G5T5/S2/NF/NS), stiff goldenrod (*Oligoneuron*

*rigidum var. rigidum*, G5/S2/NF/NS), marsh hedgenettle (*Stachys pilosa var. arenicola*, G5/S1/NF/NS). Please note that earleaf foxglove is currently tracked as a species of concern by the United States Fish and Wildlife Service (USFWS); however, this designation has no official legal status. (0407, 0407-A –26)

**State Comment:** Due to the potential for this site to support populations of natural heritage resources, DCR recommends an inventory of suitable habitat in the study area. With the survey results we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources. DCR-Division of Natural Heritage biologists are qualified and available to conduct inventories for rare, threatened, and endangered species. Please contact J. Christopher Ludwig, Natural Heritage Inventory Manager, at (804) 371-6206 to discuss arrangements for field work. A list of other individuals who are qualified to conduct inventories may be obtained from the USFWS. Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks other natural heritage resources. DCR's Biological and Conservation Data System is continuously revised. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized. (0407, 0407-A –27)

**State Comment:** The Draft Environmental Impact Statement discusses some of these issues in 4.5.3: Existing Conditions, pp. 4-77 thru 4-81, and states on page 81, the indication of the "absence of suitable habitat for rare diabase plants". That should be re-evaluated with a survey during the appropriate season. DCR has not surveyed any sites within the project area, but recommends doing so either this month or during September, if possible. As stated above, DCR-Division of Natural Heritage biologists are qualified and available to conduct inventories for rare, threatened, and endangered species. Please contact J. Christopher Ludwig, Natural Heritage Inventory Manager, at (804) 371-6206 to discuss arrangements for field work. (0407, 0407-A –28)

**Response:** *As documented in Section 4.5f the Final EIS, the Project Team has delineated the areas where suitable habitat to support the rare plants referenced above would occur. It was determined that one area, which could be developed under the Metrorail Extension, could contain rare plants associated with diabase glades.*

*Mr. Ludwig of the Department of Conservation and Recreation's Division of Natural Heritage was contacted and agreed to allow a wildlife biologist from Coastal Resources, Inc., a member of the Project Team, conduct an assessment of potential diabase habitat to determine the absence or presence of Rare, Threatened, or Endangered (RTE) plant species. Surveys were conducted based on flowering periods of the RTE plant species, which occurred in April and August 2002. Survey results indicated that there were no RTE plant species found within the study area.*

#### **Statement of No Comment from the Department of Agriculture and Consumer Services**

**State Comment:** The Department of Agriculture and Consumer Services, which is responsible for protection of state-listed plant and insect species, indicates that it has nothing to add to the discussion of rare, threatened, and endangered species (Draft EIS, pages 4-76 through 4-81, section 4.5). (0407, 0407-A –3)

**Response:** *Thank you for your input.*

#### **B. Supplemental Draft EIS Comments**

No comments pertaining to this topic were received.

## 4.6 Air Quality

### A. Draft EIS Comments

#### Federal Agency Comments

##### **Project Will Help Improve Air Quality by Reducing Auto Trips**

**Federal Comment:** Projected opening year ridership is estimated to be 27,000 to 72,000 average weekday riders depending on the alternative chosen. This project will provide a clean air alternative transportation mode for many commuters and travelers. (0303, 0303-A –2)

**Response:** *If the Dulles Corridor Rapid Transit Project were to reduce auto trips in favor of transit, then a reduction in regional emissions and pollutant concentrations would also be expected.*

##### **Virginia DEQ's Statement that Build Alternatives are Preferable to No Build**

**State Comment:** Air Quality. According to DEQ's Division of Air Program Coordination (hereinafter "DEQ's Air Division"), the project is in an ozone non-attainment area, which means that the project managers should take all precautions to limit the emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NOx). Detailed modeling studies have established that none of the alternatives under consideration will significantly affect air quality. It appears to us that any of the "build" alternatives would be preferable to the no-action alternative, given the widely acknowledged beneficial air quality impacts of improved mass transit, particularly in the Northern Virginia ozone non-attainment area. (0407, 0407-A – 6)

**Response:** *In addition to the decrease in the exhaust emission factors from 2000 to 2025 as a result of the Federal Motor Vehicles Emission Control Program), the Dulles Corridor Rapid Transit Project is also expected to improve the air quality in the region due to the diversion of passenger vehicles to transit. As stated in Section 4.6 of the Final EIS, the Dulles Corridor Rapid Transit Project is included in the Financially Constrained Long Range Plan, which conforms to the federally approved State Implementation Plan (SIP). The Dulles Corridor Rapid Transit Project is presumed to conform to the SIP by reducing regional emission levels under implementation of the LPA.*

#### Local Agency Comments

##### **Build Rail in the Dulles Corridor to Help Improve Air Quality**

**Local Comment:** The summer of 2002 has been one of the worst in terms of air quality as measured by Code Red days for the region. It is time to cease debate and studies. The matter of relieving congestion and addressing the severe damage to the region's air quality requires that we act now. This project is long overdue. It is time to build rail in the Dulles Corridor, now. (0437, 0437-E –3)

**Response:** *The Dulles Corridor Rapid Transit Project is expected to improve the air quality in the region due to the diversion of passenger vehicles to transit.*

**Local Comment:** The public hearing report should include a discussion of the extent to which each build alternative would contribute to the attainment of air quality standards, particularly as related to emissions of ozone precursors. One would expect ozone benefits to be greatest for those alternatives that will have the highest transit capacity, particularly if the benefits of high density, transit-oriented, development near transit stations are considered. The DEIS does not, however, address this issue. The DEIS should, ideally, identify differences among alternatives in terms of emissions of ozone precursors (or some surrogate, such as vehicle miles traveled in the region). (0479, 0479-L –7)

**Response:** *In addition to the decrease in the exhaust emission factors from 2000 to 2025 as a result of the Federal Motor Vehicles Emission Control Program (, the Dulles Corridor Rapid Transit Project is also expected to improve the air quality in the region due to the diversion of passenger vehicles to transit. As stated in Section 4.6 of the Final EIS, the Dulles Corridor Rapid Transit Project is included in the Financially Constrained Long Range Plan, which conforms to the federally approved State Implementation Plan (SIP). Therefore, the Dulles Corridor Rapid Transit Project is presumed to conform to the SIP by reducing regional emission levels. If the Dulles Corridor Rapid Transit Project were to result in a reduction in regional emissions of VOC and NOx, then a reduction in ozone concentrations would also be expected.*

## **Public Comments**

### **Statements on Effects on Air Quality of Metrorail Extension Versus BRT Alternative**

**Public Comment:** Air quality is a very important consideration to us. We'd like to point out that metrorail will not start improving air quality until it begins service, which will be at least 2010 and we think much later. BRT, on the other hand, which uses compressed natural gas buses, CNG buses, can be in operation soon and can bring relief to this foul air we're breathing today. (0138, 0138-T-6)

**Public Comment:** It is our understanding that due to a recent ruling in a federal appeals court related to extending the clean air deadline for the Washington, DC area, the region will soon be re-designed as "serious nonattainment" for ozone pollution. This action demonstrates the deterioration of the air quality in the region and will require additional controls to address smog. Ozone is the principle component of ground-level smog. It is formed when hydrocarbon and nitrogen oxide pollution from vehicles, power plants, refineries and other sources react in the atmosphere in the presence of sunlight. Ozone is a powerful oxidizing agent that damages lung tissue. Recent research has found that health effects from ozone include increased respiratory symptoms, damage to cells of the respiratory tract, pulmonary inflammation, declines in lung function, increased susceptibility to respiratory infections, increased risk of hospitalization and premature death. Groups most sensitive to ozone pollution are children, people with chronic respiratory disease like asthma or emphysema, people who exercise or work outdoors, and "responders", people who, for reasons that remain unknown, are more sensitive to ozone pollution. Fifty-two percent of nitrogen oxide emissions in the northern Virginia area come from on-road mobile sources. The expansion of rail in the Dulles Corridor will help reduce vehicle miles traveled and support development that is not road-centered but designed to encourage bike and pedestrian friendly modes of travel. The American Lung Association of Virginia believes these outcomes will help improve the quality of the air in the region. Thank you for the opportunity to share our support for rail today! (0198, 0198-L-2)

**Public Comment:** Air quality is enhanced by MetroRail. The typical suburban automobile gets about 22.5 passenger-miles per gallon of fuel. The typical urban bus gets 31 such passenger-miles. Light Rail produces 41 passenger-miles per gallon if the electricity is made from oil. MetroRail and commuter rail get 54 passenger-miles per gallon of fuel. When a motorist converts to transit there is a saving of at least 58 percent. Fewer trips may be made, increasing the saving. (0013, 0013-L-35)

**Public Comment:** Air quality, which I said before, is enhanced by metrorail. The typical suburban automobile gets 22.5 passenger miles pre gallon of fuel. The typical urban bus gets 31 such passenger miles, depending on what they're using. Light rail produces 41 passenger miles per gallon if the electricity is made from oil. Metrorail and commuter rail get 54 passenger miles per gallon of fuel. When a motorist converts to transit, there is a savings of at least 58 percent. Fewer trips may be made. That also increases savings. (0244, 0244-T-3)

**Response:** *From an air quality standpoint, the Dulles Corridor Rapid Transit Project is expected to improve the air quality in the region due to the diversion of passenger vehicles to transit, which would result in an overall reduction in vehicle miles traveled, as discussed in Section 4.6 of the Final EIS.*

### **EIS Should Reflect Positive Air Quality Effects of Reducing Carbon Monoxide (CO)**

**Public Comment:** From a review of the Air Quality Technical Report, it appears that only the intersections in the vicinity of the corridor were modeled. Because many of these are in close proximity to the future station sites, many of these intersections would be expected to be encumbered with additional station generated traffic. The good news from the report is that despite the additional station generated traffic added by the project, air quality won't be any worse at these intersections. Just because the EPA and VDEQVDEQ don't REQUIRE an assessment of CO concentrations from highway mainlines, the air quality improvement resulting from the elimination or trip length reduction of up to 38,000 trips per day from the road system along the corridor has got to be significant. Clearly, this very important benefit needs to be quantified and reflected in the EIS. (0387, 0387-L –18)

**Response:** *Agency requirements focus on intersections as the “worst case” (i.e., highest carbon monoxide (CO) concentrations) for assessment of Project impacts. Compared to intersection conditions, the more efficient operation of vehicle engines at highway mainline speeds, along with the greater right-of-way widths, results in much lower CO levels at locations where people may be exposed. If the Dulles Corridor Rapid Transit Project were to reduce auto trips on highway mainlines, then a reduction in CO levels near the mainlines would be expected. At the regional level, a reduction of auto trips in favor of transit would be expected to result in a reduction in overall CO emissions, which would benefit air quality.*

*The adverse levels of CO due to traffic on highway mainlines are very unlikely to occur because of the relatively low emission rates from recent model year vehicles as well as the distances from the travel lanes to receptors at or beyond the right-of-way boundary. For these reasons, EPA and the Virginia Department of Environmental Quality do not require assessment of CO concentrations from highway mainlines.*

### **Conclusion that the Build Alternatives Will Reduce CO**

**Public Comment:** The conclusion that none of the transit alternatives will reduce CO is ridiculous. How can the reduction of as many as 38,000 trips NOT reduce pollution? That's simply not possible. The air quality improvements associated with transit improvements such what's proposed in the Dulles Corridor are well known and essential if the Washington area is to solve its air quality problem. (0387, 0387-L – 17)

**Response:** *In addition to the decrease in the exhaust emission factors from 2000 to 2025 as a result of the Federal Motor Vehicles Emission Control Program, the Dulles Corridor Rapid Transit Project is also expected to improve the air quality in the region due to the diversion of passenger vehicles to transit. As stated in Section 4.6 of the Final EIS, the Dulles Corridor Rapid Transit Project is included in the Financially Constrained Long Range Plan, which conforms to the federally approved SIP. Therefore, the Dulles Corridor Rapid Transit Project is presumed to conform to the SIP by reducing regional emission levels.*

*Additionally, the air quality analysis focused on “worst-case” locations where localized traffic impacts of the Dulles Corridor Rapid Transit Project would be expected to result in the highest CO concentrations. At the regional level, a reduction of auto trips in favor of transit would be expected to result in a reduction in overall CO emissions, which would benefit air quality.*

### **Air Quality Improvements Will Come From Technological Advances, Not Rail**

**Public Comment:** None of the rail proposals do anything for air quality and the impact on the environment is greater than with buses. (0112, 0269-M-8)

**Public Comment:** That the study says that this project provides no long-term regional air quality benefit, that technological advances, not transit, generate the real benefits over the next 25 years. (0446, 0146-T –10)

**Public Comment:** That the DEIS says this project provides no long-term regional air quality benefit. Technological advances, not transit, generate the real benefits over the next 25 years. (0446, 0218-M – 10)

**Response:** *In addition to the decrease in the exhaust emission factors from 2000 to 2025 as a result of the Federal Motor Vehicles Emission Control Program, the Dulles Corridor Rapid Transit Project is also expected to improve the air quality in the region due to the diversion of passenger vehicles to transit. As stated in Section 4.6 of the Final EIS, the Dulles Corridor Rapid Transit Project is included in the Financially Constrained Long Range Plan, which conforms to the federally approved SIP. Therefore, the Dulles Corridor Rapid Transit Project is presumed to conform to the SIP by reducing regional emission levels.*

### **EIS Should State that Air Quality Would Worsen Under Metrorail Extension**

**Public Comment:** The final EIS should clearly state that as a result of the implementation of rail in the Dulles Corridor, air quality would be worse than what would be expected without rail. The basis of this statement is that under both scenarios (e.g., with and without rail) air quality would supposedly improve because EPA requirements for decreased automobile emissions. The draft EIS states that with rail, traffic in the corridor would increase over what would be expected without rail. Ergo, the level of pollution that could be expected as a result of implementation of rail would be higher than that expected without rail. (0203, 0384-L –1)

**Response:** *The air quality analysis does not support the reviewer's assertion that air quality would be worse under the Metrorail Alternative than under the No Build Alternative. As shown in Section 4.6 of the Final EIS, predicted maximum CO concentrations differ only slightly between the No-Build Alternative and the Metrorail Alternative. All of the maximum CO levels are well below the National Ambient Air Quality Standards (NAAQS). Localized increases in traffic volumes predicted along the access routes to rail stations and Park-and-Ride facilities are responsible for slightly higher CO levels at some locations. Similarly, other locations, which would experience decreases in traffic volumes because drivers would choose to ride Metrorail, would experience slightly lower CO levels.*

*Furthermore, the Final EIS shows that CO levels are predicted to improve under both the No-Build Alternative and the Metrorail Extension, compared to the existing conditions, because of EPA requirements for decreased vehicle emissions. This improvement will occur with all of the alternatives and is not an impact of the project.*

### **Buses Will Not Help Improve Air Quality**

**Public Comment:** The National Capital area suffers an air pollution problem that may bring sanctions under the Clean Air Act as amended. Buses are not clean. Greatly improved buses have been developed, but some are too heavy to comply with highway weight laws and pavement strength. Some are too costly to maintain. All are experimental when considered in relation to the fifteen (15) year bus life expectancy. Some are underpowered. (0013, 0013-L –10)

**Public Comment:** To complicate this problem, our region has severe air quality problems and we are struggling to meet the requirements of the Clean Air Act. As you may know, today was another Code Orange day indicating poor air quality, one of 12 we've already had this year, in addition to four Code Red days, those days when air quality is at its worst. If we cannot reach our air quality goals, we run the risk of losing billions of Federal transportation dollars while allowing the increased health risks of breathing polluted air. (0142, 0142-T –3)

**Response:** *The Dulles Corridor Rapid Transit Project is expected to improve the air quality in the National Capital area due to the diversion of passenger vehicles to transit. As illustrated in*

*Section 4.6 of the Final EIS, improvements in CO concentrations over existing conditions are predicted at intersections throughout the Project area under the two Build Alternatives.*

### **Metrorail Extension Will Help Reduce Use of Motor Fuel**

**Public Comment:** With the Dulles MetroRail estimated to carry 290 million annual passenger-miles of travel, it would consume about 13 million gallons of motor fuel per year to move these people by automobile. Saving at least 13 millions gallons of motor fuel per year may be worth \$18 million per year in addition to the clean air benefits. (0013, 0013-L –36)

**Response:** *Thank you for your input.*

### **Questions on Consideration of Increased Density in Air Quality Analysis**

**Public Comment:** Second, I have not had enough time to thoroughly analyze the information presented, but I do have reservations about three of the factors impacting the air quality. First, it was not clear to me that the study took into account the significant increase in the number of people who will be working and residing in the areas around the stations as a result of the increases in FAR within a mile of the stations. (0203, 0203-L –2)

**Public Comment:** Second, with the new FAR increase, it is not clear to me that the models take into account the canyoning effect of the higher buildings. This will tend to keep the exhausts from all those cars in the area longer and at higher concentrations. (0203, 0203-L –4)

**Response:** *The air quality analysis is based on traffic volumes and growth projections developed by the Metropolitan Washington Council of Governments (MWCOG) and the Counties of Fairfax and Loudoun. These projections include anticipated land-use and density changes as discussed in Section 3.1 of the Final EIS.*

*As described in Section 4.6. of the Final EIS, the air quality analysis was conducted using EPA's CAL3QHC Version 2.0 dispersion modeling program. The effects of taller buildings on CO concentrations near intersections (canyoning effect) are negligible. CO concentrations may even decrease due to higher wind speeds between buildings. The canyon effect is typically only applicable in dense metropolitan areas where buildings are over 400 feet tall.*

### **Air Quality Analysis Should Reflect EPA's Decisions on Emissions in the Mid-West**

**Public Comment:** While increases in fuel efficiency and reduced emissions play a significant part in maintaining the air quality in Reston and other areas over the next 20 to 50 years, given the EPA's recent move to reduce the required reductions for petrochemical and power plant emissions in the mid-West need to be factored into any model and certainly indicates to me that we cannot count on the reductions in automobile exhausts to actually take place. (0203, 0203-L –5)

**Response:** *Potential changes to the current federal emissions regulations for petrochemical facilities and power plants are not included in the Final EIS modeling analysis and are outside the scope of this Project. These effects may be reflected in future revisions to the SIP as mandated by the EPA. Regardless of these potential effects, emission rates from motor vehicles will continue to decline over time due to the requirements of the Federal Motor Vehicles Emission Control Program as mandated under the Clean Air Act. Newer cleaner-burning vehicles will replace the automobile fleet over time.*

### **EIS Should Address Cumulative Impacts of Increased Traffic on Noise and Air Quality**

**Public Comment:** Cumulative impacts resulting from increased vehicular traffic on noise and air quality need to be assessed. (0150, 0150-T –12)

**Public Comment:** The effect of increased vehicular traffic on noise and air quality has not been sufficiently addressed and there is a lack of planning for adequate parking facilities, particularly within Tysons, where only a 2000-space facility is planned at Tysons West. (0150, 0150-T -6)

**Response:** As described in Section 4.7 of the Final EIS, the Virginia Department of Transportation "State Noise Abatement Policy" (January 1997) established evaluation criteria for vehicular traffic. The VDOT noise criteria, which utilize the FHWA Noise Abatement Criteria (NAC), were used to evaluate Project impacts using the peak hour cumulative noise level (or Leq) for those residences located adjacent to the proposed realignment of the Dulles Connector Road, DIAAH, and Dulles Toll Road.

The cumulative impacts on air quality as a result of vehicular traffic were evaluated as part of the region's Financially Constrained Long Range Plan and in Chapter 9 of the Final EIS. As stated in Section 4.6 of the Final EIS, the Dulles Corridor Rapid Transit Project is included in the Financially Constrained Long Range Plan, which conforms to the federally approved SIP. Therefore, the Dulles Corridor Rapid Transit Project is assumed to conform to the SIP by reducing cumulative emission levels within the region.

Park-and-ride capacity at each station/stop was designed and sized based on projected demand for spaces, site constraints, cost, and projected funding availability. Consultation with local governments was also an integral part of the sizing of park-and-ride facilities. The park-and-ride capacity identified in the Final EIS (see Table 6.3-3) and supporting documents such as General Plans – Facilities reflect this analysis and design process.

### **Give More Consideration of Positive Air Quality Effects of Density Bonuses**

**Public Comment:** Considering Northern Virginia has already stated that it will not be able to comply with the Clean Air Act by the deadline, the density bonus that would be given would have a greater impact than has adequately been considered. (0159, 0159-T -3)

**Response:** An evaluation of the cumulative effects of the transit alternative and secondary development due to the density bonuses is included in Chapter 9 of the Final EIS. Increasing the densities at the transit station areas results in much higher non-Single Occupancy Vehicle (SOV) splits in traffic and a much greater increase in walk and bike trips to the transit stations. The increase in SOV trips and in pedestrian and bicycle trips to transit stations, attributable to the density bonus, would have a positive impact on air quality.

### **Air Quality Analysis is Not Adequate**

**Public Comment:** I think also your air quality section is lacking and remiss. I have two examples. In your ozone, where you talk about ozone on page 4-89, you use the hour standard, and I understand that your data is only good through 2000 in the draft EIS, but there is 2001 data and there is some 2002 data, and I would recommend that you update your data in the study. (0258, 0258-T -4)

**Response:** With respect to the 1-hour standard, the NAAQS for ozone have been subject to continuing judicial challenges. In 1997, EPA promulgated new NAAQS for ozone, based on a new 8-hour average standard intended to replace the 1-hour average standard. On May 14, 1999, the U.S. Court of Appeals for the District of Columbia Circuit invalidated portions of the rules establishing the 8-hour ozone standard. In the July 20, 2000 Federal Register, EPA reinstated the 1-hour ozone standard in counties where the standard was previously revoked. This action returned the affected areas of Virginia, including the Project corridor, to the Serious ozone non-attainment designation that was in place when the 1-hour standard was revoked. In February 2001, the Supreme Court overruled the Circuit Court's decision on a number of grounds and remanded the case back to the Circuit Court for further proceedings. In the interim, the 8-hour ozone standard has not been vacated but also is not being implemented. EPA has not designated areas in attainment or non-attainment of the 8-hour ozone standard. Accordingly, the

*1-hour standard was the only applicable NAAQS for ozone at the time that the air quality analysis was performed.*

*With respect to the use of year 2000 data, the most recent ambient air quality measurements available at the time that the air quality analysis was performed were used. The most current data do not alter the results or conclusions of the air quality analysis.*

## **Disagree with EIS that Regional Air Quality has Improved**

### **Public Comments**

**Public Comment:** But the statement that you make that says a number of violations of the ozone standard has been generally decreasing over time as a result of emission controls mandated by the Clean Air Act and the Virginia SIP, I would argue is not a true statement. It may be based on your three data points that you used, '98, '99, and 2000, but if you look at 2001 and look at 2002, I don't think that that data substantiates that statements. (0258, 0258-T –5)

**Public Comment:** Air Quality-- First of all, I would strongly suggest that the statement indicating the number of Code Red days was decreasing over the past several years be eliminated. We have already had more code red days this year than in any of the past ten years. (0387, 0387-L –15)

**Response:** *The decreasing trend in the number of violations of the ozone standard was based on the most recent data (1990-2000) that was available at the time the air quality analysis was performed. These data are available in the annual Virginia Ambient Air Monitoring Data Report from the VDEQ, Office of Air Quality Assessment, and online at <http://www.deq.state.va.us/>. The most current data do not alter the results or conclusions of the air quality analysis.*

## **Findings in a George Washington University Report on Regional Air Quality**

**Public Comment:** Specifically I would refer you to a George Washington University recent publication that reported -- and here I'm going to talk about the eight-hour average standard rather than the one-hour, but in Ashburn, here in Ashburn, taken at Broad Run High School, the measurements from '98 to 2002, although, yes, from '98 to 2000, they show a declining number of eight-hour exceedance hours, when you look at 2001, it's the number of nine. '98 was 15, '99 was 7, 2000 was 1. But 2001 was 9, and already for 2002, we have had 9 occasions to exceed the eight-hour standard. We're not even through the summer yet. The forecast is this might be the worst year yet. I would argue that your ozone statement in here is not quite accurate. (0258, 0258-T –6)

**Response:** *With respect to the use of year 2000 data, the Draft EIS used the most recent ambient air quality measurements available at the time that the air quality analysis was performed. The statement that the number of violations of the ozone standard has been generally decreasing over time was based on 1990-2000 data for the number of days on which the primary standard of 0.112 parts per million was exceeded at any VDEQ monitoring station in the Northern Virginia Ozone Non-attainment Area. Therefore, it is possible that 8-hour data for 2001-2002 from the single site, such as the Ashburn monitoring station, might show a different trend from the 1999-2000 regionwide data discussed in the Draft EIS.*

*The decreasing trend in the number of violations of the ozone standard was based on the most recent data (1990-2000) that was available at the time the air quality analysis was performed. These data are available in the annual Virginia Ambient Air Monitoring Data Report from the VDEQ, Office of Air Quality Assessment and online at <http://www.deq.state.va.us/>. The most current data do not alter the results or conclusions of the air quality analysis.*

## Review Analysis of Effects on Carbon Monoxide

**Public Comment:** And then moving to the carbon monoxide. I had hoped to be able to see in the draft EIS some quantitative data that shows that air quality is improved as a result of building metro or bus rapid transit to Dulles, and I was disappointed to find what I think is data that doesn't give full credit for the air quality -- I won't say improvements, because I kind of suspect our air quality is going to stay the way it is. I think hopefully we can keep it as good as it now. But if you look at the base line alternative, if you look at page 4-93, Table 4.6-5, the base line alternative is to build nothing, and you in your table show that carbon monoxide improves in 2006, 2010 and 2025. And I am told that the reason for that is the assumptions you have used in your model, that you assume that there will be compliance as is regulated, and I would argue that that's not a realistic assumption. I would argue that you need to go back and look at your assumptions. (0258, 0258-T -7)

**Response:** *CO concentrations with the No-Build Alternative decrease from 2000 to 2025 because emission rates from motor vehicles will continue to decline over time due to the requirements of the Federal Motor Vehicles Emission Control Program mandated under the Clean Air Act. Additional decreases in emission rates are projected due to the Virginia Inspection and Maintenance (I&M) Program. For the Draft EIS air quality analysis, the assumptions regarding compliance with these programs were taken from the State Implementation Plan Revision, Phase II Attainment Plan, for the Washington DC-MD-VA Non-Attainment Area, Appendix G: Mobile Emissions Factors and Mobile Emissions Inventory Projections (MWCOCG, February 2000). The VDEQ and the U.S. Environmental Protection Agency (EPA) have approved this document.*

## Comment on Methodology for Air Quality Analysis

**Public Comment:** I would argue that your using regulations as the assumption in your models causes you to understate what you will gain if you were allowed to do some sensitivity analysis that would put in some better data. I do not think that not building anything we will see carbon monoxide improve the rate that it shows in the table on the page. And then if you take the base line alternative of carbon monoxide and how it improves by doing nothing, in terms of build, and compare that to the metro alternative on the table 4.6-9, it appears that the quantity of improvement is very, very slim, and therefore, I think that the draft EIS is subject to, and I've seen some data that says, most of the air quality improvement is not due to mass transit, but is due to technological advances over the next 25 years. I would argue that if you look at the data for the past five years in terms of air quality carbon monoxide that no one can say that with any amount of assurance or with any accuracy that using the regulations and the standards as your assumption is a reasonable thing to do. (0258, 0258-T -8)

**Response:** *As the commenter suggests, fleet-wide technological advances in emission controls generally have a greater effect in reducing regional CO concentrations than could any one mass transit project. For the Draft EIS air quality analysis, the assumptions regarding technological advances and regulatory compliance were taken from the State Implementation Plan Revision, Phase II Attainment Plan, for the Washington DC-MD-VA Non-attainment Area, Appendix G: Mobile Emissions Factors and Mobile Emissions Inventory Projections (MWCOCG, February 2000). This document has been approved by the VDEQ and the U.S. EPA. Notwithstanding the assumptions made about technological advances and regulatory compliance, the purpose of the Draft EIS and Final EIS has been to report the specific impacts of the Dulles Corridor Rapid Transit Project. The impacts of the project would occur regardless of background trends in technology or compliance rates.*

## Do Not Constrain Air Quality Analysis to Federal Regulations

**Public Comment:** I think if you look at the last five or however many years you want to look at, pick out several data points and project them forward based on the population and the amount of transit increase projected in your draft EIS and see what that comes out to. Don't constrain it by of course we're going to meet the laws and do the right thing, because I think the data will show that we are not headed to do that

currently. And I don't think that the technology -- I don't think we are seeing evidence that there will be technology that will make those things get better. Otherwise, in terms of air quality, your draft EIS, in my mind, doesn't give you enough credit for the air quality improvements, and I think you need to do some modeling outside the box. I think you need to not be constrained by assumptions that might not be realistic. (0258, 0258-T -9)

**Response:** *The purpose of the Draft EIS and Final EIS has been to report the specific impacts of the Dulles Corridor Rapid Transit Project. The impacts of the Project will occur, and the Project alternatives can be compared, regardless of background trends in technological advances and regulatory compliance. The assumptions used in the Draft EIS and Final EIS air quality analysis regarding technology or compliance rates were taken from the State Implementation Plan Revision, Phase II Attainment Plan, for the Washington DC-MD-VA Non-attainment Area, Appendix G: Mobile Emissions Factors and Mobile Emissions Inventory Projections (MWWCOG, February 2000). This document has been approved by the VDEQ and the U.S. EPA.*

*Furthermore, if the assumptions about air quality regulations and emission control technology were altered from those in the Draft EIS and Final EIS, the magnitude of the predicted concentrations might vary, but the conclusions of the analysis with respect to the impacts of the Dulles Corridor Rapid Transit Project would remain the same.*

### **Assumption of Metrorail Extension in Regional State Implementation Plan**

**Public Comment:** The use of the Metrorail as a basic assumption (though unfunded) in the Regional Air quality (AQ) State Implementation Plan (SIP) essentially makes the argument for rail to Dulles. If the decision were made to not do one of the alternatives in this EIS, the region would have to re-run the AQ models to determine if we will remain in compliance with the National Ambient Air Quality Standards (NAAQS) especially for ozone for which we are not in non-compliance. It is highly unlikely that we could meet the NAAQS and this would have disastrous consequences: 1) it will shut off any new Federal Highway funds and 2) it would require the addition of new lanes of traffic where no additional lanes are possible without tremendous dislocations of land uses along the corridor. (0287, 0287-T -2)

**Response:** *The regional air quality conformity analysis and the State Implementation Plan Revision, Phase II Attainment Plan, for the Washington DC-MD-VA Non-Attainment Area include Metrorail as one of the anticipated alternatives for implementation of the Dulles Corridor Rapid Transit Project. The commenter suggests that if none of the Draft EIS alternatives were implemented, the region would not be able to demonstrate attainment of the NAAQS for ozone. In that event, the VDEQ and the MWWCOG would be required to implement additional emission controls in order to demonstrate attainment. However, based on the proportion of the Dulles Corridor Rapid Transit Project to all the other projects included in the Plan, it is highly unlikely that the Plan's conformity status depends on the Dulles Corridor Rapid Transit Project alone to maintain conformity.*

### **Concern About Assumption of Rail Fleet Turnover**

**Public Comment:** The assumptions of ridership using metro or one of the other options is an important element of the Metropolitan SIP but the other assumption made in this EIS which is that fleet turnover (newer cars with tighter emissions standards taking the place of older ones having lower exhaust and engine emissions) which over the next 30 years will keep us in compliance with the NAAQS is while technically possible a chancy bet. Metrorail will reduce emissions by hundreds of tons because it keeps autos out of the peak hour of traffic and provides relief from the necessity of creating additional transportation lanes. (0287, 0287-T -3)

**Response:** *The purpose of the Draft EIS and Final EIS has been to report the specific impacts of the Dulles Corridor Rapid Transit Project. The assumption made in the Draft EIS about fleet turnover is the same assumption as was made in the State Implementation Plan Revision, Phase II Attainment Plan, for the Washington DC-MD-VA Non-Attainment Area, Appendix G: Mobile*

*Emissions Factors and Mobile Emissions Inventory Projections (MWCOC, February 2000). The benefits of Metrorail in reducing emissions would occur regardless of the assumption made about fleet turnover.*

### **Metrorail Has Better Air Quality Effects than More Highway Lanes**

**Public Comment:** Adding highway lanes as opposed to the Metrorail option will exacerbate AQ concerns and our ability to remain in attainment for the NAAQS. If we are out of attainment for the NAAQS we will lose new Federal highway funds. (0287, 0287-T –4)

**Response:** *The commenter correctly states that one of the potential consequences of inability to remain in attainment of the NAAQS for ozone is a loss of federal highway funds. More specifically, a failure to maintain conformity of the Financially Constrained Long Range Plan (National Capital Region Transportation Planning Board, MWCOC, Washington, DC) with the SIP could lead to a cutoff of federal highway funds. The regional air quality conformity analysis for the Financially Constrained Long Range Plan includes Metrorail as the anticipated alternative for implementation of the Dulles Corridor Rapid Transit Project. In the event of a failure to maintain conformity with the SIP, the VDEQ and the MWCOC would be required to implement additional emission controls in order to demonstrate attainment and ensure restoration of federal highway funds.*

### **Suggestions for Alternative Scenarios to Air Quality Analysis**

**Public Comment:** Since the EPA requirements which form the basis for improved air quality in the corridor are a) subject to change, b) subject to revocation, or c) may not be attainable, the final EIS should consider three scenarios for air quality. The first would be no change for the current emissions rates; the second would be some intermediary reduction; and the third would be the level of reduction forecast in the draft EIS. (0203, 0384-L –2)

**Response:** *The scenarios proposed by the reviewer involve potential trends in emission rates that would occur with or without the Dulles Corridor Rapid Transit Project (i.e., they would be included in the No-Build Alternative and all Build Alternatives). However, the purpose of the Draft EIS and Final EIS has been to disclose and compare the impacts of the project alternatives. The impacts of the project would occur regardless of trends in emission rates. Therefore, the analysis proposed by the reviewer is not necessary for purposes of the Draft or Final EIS.*

### **Explain How CO Relates to Ozone Concentrations**

**Public Comment:** The DEIS doesn't make clear why one needs to model CO concentrations when the only non-attainment pollutant is ozone. An apparent "statement of fact" as presented in the first sentence of the second paragraph of Section 4.6.1.4 in the DEIS is insufficient. Instead, why not just include all of Section 3.8 (Pollutants of Concern) from the Air Quality Technical Report. Providing this explanation of how CO relates to ozone concentrations would make it perfectly clear to the readers of the report -- and especially the project's critics. (0387, 0387-L –16)

**Response:** *The NAAQS were established using criteria based on protection of human health. The NAAQS specify a different concentration standard for each pollutant, and the NAAQS for CO are relatively stringent. Emissions rates from vehicles are also different for each pollutant, and the pollutant emitted in greatest quantities from vehicles is CO. As a result, under adverse air quality conditions, the CO standard would be the first NAAQS to be exceeded due to local traffic impacts. If the CO standard is not exceeded, then the ambient concentrations of the other pollutants that have localized impacts also should be less than the NAAQS. Therefore, CO is used as the indicator pollutant in evaluating air quality impacts from vehicles.*

*CO concentrations tend to be highest in localized areas because they are most affected by local traffic congestion. By comparison, motor vehicles do not emit ozone. Rather, cars and trucks are*

*responsible for precursor pollutants (primarily volatile organic compounds and nitrogen oxides), which react in the presence of sunlight to form ozone in the atmosphere. These reactions occur over periods of hours and days, while the pollutants are diluted and transported downwind. Consequently, ozone is considered a regional pollutant.*

*The effects to air quality from all planned transportation improvements are evaluated as part of the region's Financially Constrained Long Range Plan. The Dulles Corridor Rapid Transit Project is included in this plan, which conforms to the federally approved State Implementation Plan (SIP). The air quality analysis was performed in accordance with EPA guidance (U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards). Guideline for Modeling Carbon Monoxide From Roadway Intersections (EPA-454/R-92-005, November 1992.)*

### **Provide More Information on Impact of Preferred Alternative on Regional Air Quality**

**Public Comment:** Further refine the impact the preferred alternative will have on metropolitan Washington's air quality. The public deserves more definitive information on addressing these two critical issues. (0396, 0396-L -7)

***Response:** The air quality analysis was performed in accordance with National Environmental Policy Act (NEPA) requirements to evaluate and disclose the impacts of the Dulles Corridor Rapid Transit Project. The air quality analysis followed the guidance of EPA, VDEQ, and MWCOG.*

### **Draft EIS Should Evaluate the Potential Negative Impact of Increased Density**

**Public Comment:** Tables 9.3-3 and 9.3-5 state that no exceedance of the NAAQS are anticipated. But exceedance is not the appropriate way to assess whether or not an impact is adverse. Instead, the Draft EIS would quantify and evaluate the extent to which the increased density would contribute to a deterioration in air quality. (0510, 4-05)

***Response:** Air quality analysis was conducted in accordance with all standard procedures and followed the guidance of EPA, VDEQ, and MWCOG. Since the Project was determined to meet be in conformance with the federally approved SIP, and since no exceedance of NAAQS are anticipated, no secondary or cumulative effects would occur.*

### **Analyze the Impacts of Generating Electric Power for the Metrorail Extension**

**Public Comment:** The use of Metrorail must include an analysis for the pollution impacts on the Washington metropolitan region resulting from the generation of the electrical power for the system. (0487 4-02)

***Response:** Power-generation facilities were not evaluated. Electricity for public transportation operations would be purchased from existing sources. Analyzing power-generation methods is beyond the scope of this study.*

### **Need to Improve Regional Air Quality**

**Public Comment:** We face a future that will include many new residents and jobs. Over the next 25 years the Greater Washington region will add 1.4 million people (+32%) and 1.1 million jobs (+39%). In the Dulles Corridor alone, this increase will amount to an additional 206,000 people (+56%) and 203,000 jobs (+71%) - a rate of growth nearly twice the rate of the region as a whole. For purposes of perspective, this rate of growth will be equivalent to the corridor accommodating the populations of Arlington and the City of Fairfax and approximately the number of workers who are currently employed in Loudoun, Prince William and Manassas. At the same time, the Council of governments also forecasts that vehicle miles traveled (VMT) in our region will increase by 46% by 2025, while freeway and arterial lane miles are forecast to increase by only 13 percent - a recipe for further gridlock compounding our current ranking as the nation's third most congested region. To complicate this problem, our region has severe air quality

problems, and we are struggling to meet the requirements of the Clean Air Act. As you may know, today was a "code orange" day, indicating poor air quality - one of 12 this year already. In addition, we have already had four "code red" days - those days when air quality is at its worst. If we cannot reach our air quality goals we run the risk of losing billions of federal transportation dollars, while allowing the increased health risks of breathing polluted air. (0142, 0219-M -1)

**Response:** As outlined in detail in Chapter 1 of the Final EIS, the purpose of the Dulles Corridor Rapid Transit Project is to provide transit system enhancements that would provide a direct connection to the existing Metrorail system. These enhancements would offer an alternative means of travel for the growing number of residents, employees, and visitors in the Dulles Corridor as well as a high quality transit link to the Metrorail system in order to improve mobility throughout the region. These proposed improvements would help to address the issues raised in the comment, namely improving transportation service, providing an alternative mode of travel to that of the automobile, increasing transit ridership, and supporting current and future population growth and development in the Dulles Corridor and region.

## **B. Supplemental Draft EIS Comments**

### **Federal Agency Comments**

#### **Control of Emission**

**Federal Comment:** DEQ's Air Division reiterates its earlier guidance relative to open burning and fugitive dust emissions. The Division also continues to recommend restricting emissions of volatile organic compounds and oxides of nitrogen because the project will take place in an ozone non-attainment area and an emissions control area for volatile organic compounds and oxides of nitrogen, the precursors to atmospheric ozone. (0080 0094-1)

**Response:** The air quality analysis conducted for the Dulles Corridor Rapid Transit Project was developed in accordance with EPA and Federal Transit Administration (FTA) requirements for NEPA evaluations. All air quality effects associated with the construction and long-term operation of the Dulles Corridor Rapid Transit Project are discussed in the Section 4.6 of the Final EIS.

### **Public Comments**

#### **Control of Emission**

**Public Comment:** g. The claim (e.g. at TABLE 2-2) that Phase 1 will "improve vehicular emissions" needs to be supported with detailed data, based on an objective study meeting industry standards that takes account of likely use patterns (e.g., congestion resulting in the rush to/from stations, as well as revised traffic patterns resulting from avoidance of increased tolls by motorists that will increase, not decrease vehicular emissions along arterial routes and in neighborhoods radiating out from the Dulles Toll Road corridor both to the north, south, east and west). (0068 0173-24)

**Response:** Although improvements in regional air quality are anticipated in conjunction with the development of the Dulles Corridor Rapid Transit Project, it is true that most improvements are attributable to the reduction of high emission vehicles over time as mandated by EPA regulations. The Dulles Corridor Rapid Transit Project would help support regional air quality goals by providing an alternative mode of transportation to single occupant automobiles and additional transit capacity within the region.

#### **Impacts on Air Quality**

**Public Comment:** Many parties claim that Dulles Rail will enhance air quality. Our research indicates that air quality would be the same regardless of whether Dulles Rail is built or alternate methods are employed. I believe this conclusion falls from the table shown in the DEIS but if this conclusion is not

correct please explain. (0061 0069-6)

**Public Comment:** Statements that Dulles Rail improves air quality attainment are not supported by fact. (0016 0122-14)

**Public Comment:** The claim has been made that Dulles Rail will enhance air quality. Our research indicates that air quality will be the same regardless of whether Dulles Rail is built or alternate transit methods are employed. If you disagree with this conclusion, please provide evidence. Figure in your calculations extra emissions to generate the electricity to keep Dulles Rail running and its impact on NOx. (0061 0117-8)

**Public Comment:** Parties claim the Dulles Rail will enhance air quality. We don't think that that's indicated or in the DEIS, and we dispute that conclusion. (0061 0136-5)

***Response:** Although improvements in regional air quality are anticipated in conjunction with the development of the Dulles Corridor Rapid Transit Project, most improvements are attributable to the reduction of high emission vehicles over time as mandated by EPA regulations. The Dulles Corridor Rapid Transit Project would help support regional air quality goals by providing an alternative mode of transportation to single occupant automobiles and additional transit capacity within the region.*

**Public Comment:** Please explain how it is possible for both the DEIS and the SDEIS to ignore the emissions associated with operating Metrorail. These emissions are among the most significant environmental impacts of the project. (0063 0151-12)

**Public Comment:** I. The SDEIS needs to evaluate Air Quality (e.g., TABLE 2-2) with data and discussion that accounts for the years of MetroRail-related construction, gridlock emissions and delay that would continue to make this "Severe Non-Compliance" area for Clean Air Act NAAQS parameters suffer. This blinders approach is particularly evident in the SDEIS contention that no NAAQS violations will occur – an indefensible assertion given the fact that at the earliest, 2009 would be the beginning of operation of mass transit in an area of severe non-compliance. (0068 0173-29)

***Response:** The air quality analysis conducted for the Dulles Corridor Rapid Transit Project was developed in accordance with EPA and FTA requirements for NEPA evaluations. Air quality effects associated with the construction and long-term operation of the Dulles Corridor Rapid Transit Project are discussed in Section 4.6 of the Final EIS.*

### **Air Quality Related to Power Consumption**

**Public Comment:** The SDEIS states that the project is necessary to help meet national air quality standards. Yet, the SDEIS does not consider that Metrorail is a massive consumer of electricity, that much of this electricity is generated by coal-fired power plants, and that the regional Council of Governments has determined that pollution from coal-fired power plants is one of the leading causes of our region's air quality problems. (0063 0151-10)

**Public Comment:** In 2001, Metrorail consumed well over 400 million kWh of electricity – enough to power a small city. Much of this electricity was generated by coal-fired power plants. Some of these plants are within our region and have a direct impact on air quality. Other plants are outside of our region, but their emissions are transported here by prevailing winds. Metrorail actually is a significant polluter, responsible for large level of NOx, particulate matter, carbon dioxide, SO2, mercury, and other compounds. In some cases, Metrorail actually emits more pollution, on a per passenger mile basis, than a typical passenger automobile. (0063 0151-11)

***Response:** The emissions that result from the demand for Metrorail are not described in the Draft EIS nor in the Supplemental Draft EIS due to the conformity process required by the Clean Air Act and the requirements to account for mobile and stationary source emissions. Power plant*

*emissions due to all existing and future projected demands, including those for the Metrorail extension, are accounted for as part of the statewide emissions inventory and included in the SIP.*

*In addition, all power plants must submit to a strict permitting process by demonstrating compliance with all applicable emission limits and ambient air quality standards established by the U.S. EPA and the VADEQ. Therefore, power plant emissions caused by power demand to operate Metrorail, or the rest of the region's electrical grid, are documented and regulated by the federal and state conformity process. Emissions from all power plants located in the MWCOG region are accounted for in the SIP prepared by the MWCOG. Emissions from the Mount Storm facility in West Virginia would not be included MWCOG's SIP, but rather the West Virginia SIP.*

## 4.7 Noise

### A. Draft EIS Comments

#### State Agency Comments

#### **Noise Analysis Should Consider VDOT, MWAA and FTA Criteria**

**State Comment:** VDOT's noise criteria were judged not to apply because "no other roadway changes affecting either capacity or elevation are expected..." This is a narrow and not totally accurate viewpoint since both VDOT traffic projections and expectation for increased vehicle usage stemming from density allowances, will substantially increase traffic in the Dulles Connector section that adjoins our community. The EIS references plans to widen the connector, giving further indication of the prospect of increased vehicular traffic. The EIS should broaden its noise abatement scope to include both MWAA and VDOT policy as well as that of the FTA. (0012, 0468-L -5)

**Response:** *Except where noted, no other changes to the existing roadways are proposed as part of the Dulles Corridor Rapid Transit Project. Any other roadway changes are part of other projects sponsored by either the VDOT or the Metropolitan Washing Airport Authority (MWAA), and these projects are independent of the Dulles Corridor Rapid Transit Project.*

#### **EIS Should Consider Local Ordinances on Any Transportation-Related Noise**

**State Comment:** The EIS further references local ordinances on noise, but again narrowly excludes transit operations. The Policy Plan for the Comprehensive Plan of Fairfax County has as its objective (number 5): "Minimize human exposure to unhealthful levels of transportation generated noise." It makes no distinction between vehicular and transit generated noise. In fact the local ordinance regulates new development, to ensure that people are protected from "transportation noise," and that noise impacts in areas of existing development should be reduced. The EIS needs to address noise mitigation in this light. (0012, 0468-L -6) (0137, 0304-L-2)

**Response:** *As described in Section 4.7 of the Final EIS, the Fairfax County noise ordinance (Code of the County of Fairfax, Chapter 108, January 1, 1976) of 55 dBA at residential receptors and 60 dBA at commercial receptors applies only to stationary sources and facilities. The Fairfax County noise criteria were used to evaluate noise impacts from Project-related stationary facilities such as passenger stations, park-and-ride facilities, and Metrorail yards. Proposed noise mitigation locations are listed in Table 4.7-6 of the Final EIS.*

### Several Office, Restaurant and Retail Land Uses Incorrectly Classified as FTA Land Use Category 3 Sites

**State Comment:** Noise and Vibration Technical Report (June 2002)

- § Table 3-13 - Several office, restaurant and retail establishments are incorrectly classified as FTA Land Use Category 3 sites. These and similar commercial and industrial properties are not considered noise-sensitive according to FTA.
- § The term "Baseline Alternative" as used throughout the report should be more appropriately termed the "No-Build Alternative." While FTA does not specifically require a noise assessment for the future No-Build Alternative, it is appropriate to provide such an assessment where significant changes in the noise environment are anticipated due to factors unrelated to the project. Typically, the No-Build conditions are similar to the existing conditions such that no assessment is needed. However, the No-Build case needs to be addressed in the EIS and thus it is of interest to know if impacts are expected without the project. Such information can be useful in determining if mitigation for the build alternatives is reasonable and feasible. (0421, 0421-A –11)

**Response:** *Although offices and conference rooms may be categorized as Category 3 land uses, restaurants and retail establishments are not considered noise-sensitive institutional receptors according to the FTA guideline (Transit Noise and Vibration Impact Assessment, 1995). ) These discrete receptors were selected, however, as representative of the types of commercial land-uses identified along the Dulles Corridor in Tysons Corner, and their inclusion makes the environmental study more informative. Although project noise levels were reported at these discrete receptors, a noise impact assessment using the FTA criteria was not evaluated at these locations.*

*Additionally, project mitigation measures are determined to be reasonable and feasible based on their noise reduction potential, their effects on transit service, capital and operating costs, and their social and visual impact, as well as other potential environmental factors.*

*The Baseline Alternative of the Draft EIS is the No-Build Alternative of the Final EIS. FTA noise analysis guidelines do not require an analysis of future No-Build noise conditions. FTA guidelines require only analysis of Project-induced noise levels relative to existing ambient conditions.*

### Noise Mitigation for the Hallcrest Heights Community

**State Comment:** I concur with Mr. Tyler's request that Hallcrest Heights should receive the same level of noise attention measures as nearby communities adjacent to the Dulles Airport Access Road have already received. I also agree with his suggestion that noise attenuation measures to address the concerns of Hallcrest Heights and the Westhampton area citizens should be initiated before the construction of transit operations facilities. (0012, 0468-L –4)

**State Comment:** Insufficient attention is being paid to mitigating the impact of rail on adjoining communities. Communities that are already suffering from inadequate abatement of noise from the Toll Road must be guaranteed that they will finally receive sufficient mitigation measures. Of particular concern is Hallcrest Heights in McLean, which has had only a deteriorating, dilapidated wooden barrier to stop the noise. Given that the proposal is for an elevated, curving rail structure to adjoin the community, they urgently need attention. However, noise is a serious concern for communities along the entire length of the proposed rail system and must be addressed responsibly. (0298, 0298-L –4)

**Response:** *The Project Team utilized the guidelines established by the FTA in its Transit Noise and Vibration Impact Assessment (1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. The FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects. However, in areas, such as Hallcrest Heights, with higher background levels, Project noise limits established by the FTA are*

*more stringent than in quieter areas allowing the ambient levels to remain the same in the future or increase only slightly before an impact is identified.*

*There is a potential for wheel squeal noise based on the 800-foot radius of curvature proposed near the Hallcrest Heights. However, to better define the onset of wheel squeal, actual source measurements were conducted along an existing Metrorail line near the Ronald Regan Washington National Airport with a radius of 755 feet. Based on the results of the modeling analysis, ambient day-night noise levels from the Metrorail operations are predicted to range from 50 to 54 dBA at the Hallcrest Heights residences. The modeling analysis includes three to four-foot parapets (or barriers along the edge of the track bed) proposed along all sections of aerial guideway (except on Airport property). These levels are well below the measured ambient background noise level of 59 dBA recorded at a residence at 7405 Hallcrest Drive. As a result, no exceedances of the FTA criteria are predicted from Metrorail operations near Hallcrest Heights.*

*Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. Four- or six-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). The types and location of the proposed mitigation measures are described in Section 4.7 of the Final EIS. Figures 4.7-5a and 4.7-5b are included to help identify the location of the proposed parapet barriers closest to Hillcrest Heights.*

*Roadside sound barriers are typically evaluated during the design of major highway improvement projects such as widening or new alignment when noise impacts are forecast for adjacent noise-sensitive receptors. Evaluation criteria, including effectiveness and cost, are typically used to make decisions on sound barrier location, height, and type. Generally speaking, roadside sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.*

### **Potential Noise Impacts to Route 123 Area**

**Public Comment:** The Project Team needs to explain how communities near Route 123/Dulles Toll Road would be protected from visual, noise, squeal, and vibration impacts. (0392, 4-01)

**Response:** *Proposed mitigation measures are identified in Chapters 2, 3 and 4 of the Final EIS..*

**Public Comment:** The new station will bring unwanted noise to the Rotonda. (0496 01)

**Response:** *This comment concerned the potential effects of Alignment T4, which was eliminated from further consideration after the public and agency review and comment on the Draft EIS.*

### **Potential Noise Impacts of Elevated Metrorail Track Sections**

**State Comment:** There is one matter that upon consideration of the likely project description in the vicinity of your community I believe should be addressed by WMATA as they perform their noise assessment: Where the Metrorail right-of-way rises above grade adjacent to your development, the vertical retaining walls and elevated structure will create sound-reflecting surfaces parallel to the existing highway noise barrier. Reflections from the railway structures may degrade the barrier performance in the manner of "parallel barriers." The significance of this should be examined and mitigation incorporated if necessary. Mitigation can be accomplished by various means, the simplest of which is absorptive treatment of the vertical surfaces. (0012, 0012-A -2)

**Response:** *The Final EIS identifies mitigation in the form of parapet barriers for impacts at receptors adjacent to aerial guideway sections of the Metrorail Extension (see Section 4.7). The potential for noise reflections was not assessed as part of the Draft or Final EIS. As the*

*commenter suggests, acoustically absorptive treatment is an excellent method for eliminating barrier degradation due to the "parallel barrier" effect. Absorptive treatment of the retaining walls leading to the aerial track structure will be investigated further during preliminary engineering and final design.*

### **Local Agency Comments**

#### **Fairfax County Board of Supervisors Request for Written Response on Concerns Over Noise and Traffic Impacts**

**Local Comment:** At its meeting of July 22, 2002, the Fairfax County Board of Supervisors expressed several concerns about noise and traffic impacts of the Dulles Corridor Rapid Transit Project documented in the Draft Environmental Impact Statement. The Board requested a written response addressing these concerns and plans for appropriate mitigation efforts. Three specific concerns were identified and these are noted below:

1) The first concern is about the impact of 26 additional rail cars at the WMATA Service and Inspection Yard at the West Falls Church Metrorail Station on homes in the Lemon Road community. Rail cars entering and leaving the yard at late night and early morning hours are a source of increased noise, loud horns and squealing brakes. The Project Team has identified this impact, but has not specifically proposed any mitigation strategies. (0121, 0121-A -1)

**Local Comment:** The public hearing report should include a response to the concerns of the Fairfax County Board of Supervisors regarding noise and traffic impacts conveyed in Chairman Hanley's August 2, 2002 letter to you (copy attached). (0479, 0479-L -8)

**Response:** *With respect to the concerns of communities on the noise of the Metrorail West Falls Church Yard, the Project Team recommended and the decision-makers approved the enclosure of 1) a portion of the existing loop track at the yard's eastern end and 2) the new yard lead in box structures. These noise mitigation measures by the Project will reduce the wheel squeal noise of the train movements within the Yard. The Project Team notes, however, that new residences have been recently constructed and occupied adjacent to the West Falls Church S&I Yard without any noise mitigation provided by the residential developer. As during the past ten-year effort to address yard noise, there will be coordination among DRPT, WMATA, Fairfax County officials and staff, and representatives of the communities during preliminary engineering and final design.*

*The number of additional cars at West Falls Church Yard has increased from 26 in the Draft EIS to 42 in the Supplemental Draft EIS and Final EIS in order to support the Metrorail fleet of the Wiehle Avenue Extension. Wheel squeal from the new yard lead (for Metrorail trains to and from the Dulles Corridor Line) at the east end of the yard was included in the modeling analysis. Based on measured noise levels from the current wheel squeal along a similar radius curve at the yard, exceedances of the FTA impact criteria are predicted at nearby residences. No exceedances are predicted from the Project's aerial guideway in the median of the Dulles Connector Road.*

*Other sources, such as horns, were not included in the modeling analysis. Brake squeal was not determined to be a major problem. Based on the current operating schedule at the yard, the increase in the overall yard noise due to the cleaning and general operation of 42 additional Metrorail cars needed for the Project is expected to be minimal.*

### Proposed Parapet Wall Inadequate to Mitigate Noise on Hallcrest Heights

**Local Comment:** The current noise abatement recommendations for properties near Hallcrest Heights include a three-foot tall parapet along the aerial rail sections next to residential areas. It is clear that this may be insufficient to reduce the noise generated by the meeting of rails and wheels on a curve. (0121, 0121-A –2) (0479, 0479-L –11)

**Response:** *There is a potential for wheel squeal noise based on the 800-foot radius of curvature proposed near the Hallcrest Heights. To better define the onset of wheel squeal, actual source measurements were conducted along an existing Metrorail line near the Ronald Regan Washington National Airport with a radius of 755 feet. Based on the results of the modeling analysis, ambient day-night noise levels from the Metrorail operations are predicted to range from 50 to 54 dBA at the Hallcrest Heights residences. These levels are well below the measured ambient background noise level of 59 dBA recorded at a residence at 7405 Hallcrest Drive. The modeling analysis includes three to four-foot parapets (or barriers along the edge of the track bed) proposed along all sections of aerial guideway (except on Airport property). As a result, no exceedances of the FTA criteria are predicted from Metrorail operations near Hallcrest Heights.*

### Respond to Concerns of Noise Impacts on Polo Fields, Westwood Village and Chathams Ford

**Local Comment:** Respond to neighborhood noise concerns by including noise walls or other mitigation for Polo Fields, Westwood Village and Chatham Fords communities. (0437, 0437-E –7)

**Response:** *No exceedances of the FTA impact criteria are predicted in the Polo Fields or the Chathams Ford communities. As a result, no mitigation measures to reduce future transit noise levels are currently proposed along those areas of the Dulles Corridor. However, as a result of impacts predicted in the Westwood Village) community under the Build Alternatives, proposed mitigation measures will be investigated further during preliminary engineering and final design.*

### Impacts from Proposed Park-and-Ride Structure at Tysons West Station

**Local Comment:** Significant noise and traffic impacts may be caused by the proposed 2000 car parking structure on Route 7 at Tysons Corner. The current proposals do not address the noise impact that could reasonably be expected from increased traffic. (0121, 0121-A –3) (0479, 0479-L –12)

**Response:** *The park-and-ride structure at Tysons West Station has been reduced from 2,000 spaces to 500 spaces, thereby reducing the potential for noise impacts at this location. Noise levels from the park-and-ride facilities proposed along the Dulles Corridor, including the Tysons West Station facility of 500 spaces, were included in the modeling analysis and discussed in the Final EIS using the FTA's General Assessment guidelines. The FTA modeling methodology was adjusted to account for a maximum throughput volume of 500 cars during the early morning peak-hours.*

*Based on these maximum operating conditions (i.e., the facility is filled to capacity), the overall noise levels from the facility at the closest residences in Westwood Village are predicted to be negligible. The predicted day-night noise level from the park-and-ride facility of 40 dBA at a residence in Westwood Village is well below the measured background level of 54 dBA. As a result, no exceedances of the FTA impact criteria are predicted as a result of the proposed Tysons West park-and-ride facility. The current ambient noise at these receptors is generally dominated by traffic along the Dulles Toll Road/DIAAH. However, noise mitigation measures are proposed to eliminate impacts due to the proposed Metrorail operations along Route 7.*

## **Public Comments**

### **DCRA Recommendation to Mitigate Noise Impacts at West Falls Church and Hallcrest Heights**

**Public Comment:** On behalf of DCRA I offer the following additional comments: We support the concerns of the citizens of McLean who are concerned about increased noise from the rail yards at West Falls Church and the Hallcrest Heights residents whose homes lie below the rail line as it ascends and approaches Tysons Corner. We recommend that the project be engineered to mitigate noise impacts from the rail extension, as well as those from its construction. (0131, 0434-E –1)

**Response:** *Where exceedances of the FTA, WMATA and other Project criteria are predicted, noise mitigation measures are proposed (see Section 4.7 of the Final EIS) and will be investigated further during preliminary engineering, as appropriate. Within the West Falls Church Yard, the Project will enclose a portion of the loop track at the yard's eastern end and the new yard lead in box structures in order to reduce the wheel squeal of trains in the yard.*

### **Effects of Construction Noise on Hallcrest Heights Community**

**Public Comment:** Although specifics are not given in the EIS, it is not hard to judge from precedents in other elevated sections of the Metro system, that construction noise will be considerable. Since our community [Hallcrest Heights] lies some 10-12 feet below the level of the roadway in the corridor, the construction of the elevated and curving section of the proposed rail service into Tysons, will involve substantial and sustained construction noise over an extended period of time. Given the FTA's policy of coordinated transportation planning (which I assume would include dealing with such public agencies as MWAA and VDOT), the EIS should sequence significant transportation noise mitigation measures in the corridor (and particularly our adjoining section) ahead of construction activities. Since VDOT has chosen not only to not maintain the existing ineffective barrier, (which is too low and too short anyway), and since MWAA has said they will not retrofit any communities for such abatement, the EIS should address the problem in a comprehensive way if the project's objective to protect adjoining communities has any meaning at all. If the EIS were to include such analysis, then a noise barrier of modern design equivalent to that erected for Wolf Trap and other communities in the corridor should be placed at our section of the corridor. Such a barrier must extend all the way down the off-ramp to the merge with Route 123 if it is to have any effect at all. (0137, 0304-L –3) (0012, 0468-L –7)

**Response:** *Exceedances of the WMATA noise criteria for construction activities were identified in Section 4.7 of the Final EIS. Construction noise and potential mitigation will be further analyzed during preliminary engineering and final design.*

*Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. Four to six-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). The types and location of the proposed mitigation measures are described in Section 4.7 of the Final EIS. Figures 4.7-5a and 4.7-5b are included to help identify the location of the proposed parapet barriers closest to the Hallcrest Heights.*

*Roadside sound barriers are typically evaluated during the design of major highway improvement projects such as widening or new alignment when noise impacts are forecast for adjacent noise-sensitive receptors. Evaluation criteria including effectiveness and cost are typically employed to make decisions on sound barrier location, height, and type. Generally speaking, sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.*

### Install Concrete Walls Along Aerial guideway Sections

**Public Comment:** Install concrete walls along elevated sections of the track. They might be quite high in some areas, but I understand that they would be the most effective way to address both sound and visual pollution problems. (0432, 0432-E –6)

**Response:** *Parapets (or track edge barriers) will be installed along all aerial (above-ground) sections of track and will shield new noise from Metrorail train passbys. These parapets will be three to four feet high, except in places exceedances of the FTA criteria are predicted, where the parapets will be five to six feet in height. As stated in the Final EIS, these mitigation measures will be refined during preliminary engineering and/or final design.*

### Noise Impacts of West Falls Church Yard and its Improvements

**Public Comment:** My neighbors and I are living on McKay Street just behind the Metro Maintenance Yard near the West Falls Church Station. There are approximately 20 residential homes on McKay Street and another 10 houses on Eastman Drive. Some of us had the opportunity to attend the Public Hearing at Springhill Elementary School on July 29th. After the meeting we visited the Exhibit Room where we met with acoustical consultants. After studying the aerial maps of the area around our neighborhood and the new Dulles Corridor Rapid Transit Project, we had a lengthy discussion about noise in our neighborhood from the Metro trains and other equipment. We were told that a spur off the main Metro line from Dulles Airport will be constructed in back of our homes on the Dulles Access Highway side, which will connect with the Metro Maintenance Yard in back of us. We are currently living with high-pitched screaming train wheels, blowing horns, blaring loudspeakers, and other irritating noises from the Yard. Metro tried unsuccessfully for several years to mitigate the high decibel noise levels. We in the neighborhood are very concerned and bothered to think that Metro is planning another project into the yard that will only create additional bothersome, annoying, disruptive noise in our neighborhood, which frankly, WE DO NOT NEED. (0089, 0089-L –1)

**Public Comment:** I have been a homeowner and resident at the above address [McKay Street] since 1961, and experienced the problems of the Washington Metropolitan Area Transit Authority's maintenance yard to date. The attached copy of the Arlington Journal article of December 16, 1992 explains much of the problem for local residents. The noise factors (shrieking sounds, train horns, loud speaking, equipment, etc.) are still factors that degrade the quality of living in many ways, particularly during night hours! Last week I had two nights of broken sleep because of the noise. One night noise at about 2:30 AM and 3:30 AM. The other night 3:30 AM-4:00 AM. (0417, 0417-L –1)

**Public Comment:** We are particularly concerned about squeal at the West Falls Church maintenance yard and at the flyover at I-66, where the transit will take off for Dulles. (0145, 0145-T –8)

**Public Comment:** We are particularly concerned about squeal at the WFC maintenance yard and noise of all types at the planned flyover of I-66. (0145, 0452-E –5)

**Public Comment:** The EIS should address the impact on the Lemon Road community of increased use of the maintenance yard (and construction of a lead track) near the West Falls Church station. Similarly the EIS should be revised to address neighborhoods' concerns about the schedule and intensity of nighttime construction of the rail system, possibly by putting needed noise barriers in place before construction begins. (0392, 0392-L –20)

**Public Comment:** We already have a high level of ambient noise in our [Westhampton] neighborhood. We already listen to the noise that the Orange line trains make as they cross switches into the West Falls Church metro station, as trains are fed into Arlington from that station's rail yard during rush hour, and as they pass by to and from Vienna. We already hear "wheel squeal" at 2:00 AM as trains are moved around in the rail yard adjoining the station. We look out our back windows at the West Falls Church metro station. (0403, 0404- L- 1)

**Public Comment:** Increased noise volumes and frequency can be expected from the additional, longer trains on the new track; from the steel support as the track crosses I-66; from additional switches; and at the expanded WFC rail storage and maintenance yard. This noise may be exacerbated by a tunnel at the rail yard concentrating and directing noise at the Westhampton neighborhood. (0403, 0403-L-1)

**Public Comment:** There is already a lot of squealing noise due to train wheels rubbing against the rails in the tight turn of the West Falls Church yard. Additional trains in this yard will make the problem worse. The present problem needs to be addressed by Metro now and designs made to avoid the same problem with any new construction. (0029, 0040-CC-1)

**Public Comment:** We would like to see improved transportation service for the Dulles Corridor. I travel the Toll Road to work each day. However, there must be minimal impact on the established neighborhood around the West Falls Church station. McKay St. families have already experienced excessive noise from the present setup. (0267, 0267-L -1)

**Public Comment:** Noise must be a primary concern for any expansion or additional use of the West Falls Church Metro yard. (0065, 0065-CC-1)

**Public Comment:** Additional noise would be completely unacceptable and inhumane. Please reconsider your plan for above ground storage. The Dulles track encroaching on our yards, and all aspects creating more noise. (0065, 0065-CC-2)

**Public Comment:** Investigate noise level mitigation measures at the West Falls Church Rail Yard connector to eliminate wheel squeal noise at adjacent residents along McKay St. (0031, 0031-CC-1)

**Public Comment:** I raised the following concerns about effects around the existing West Falls Church S&I yard. The draft shows expected impact of noise on houses along McKay Street, but does not distinguish whether this will come from the new lead tracks on the north/northeast loop, or the mainline, or both. If it increases the currently unmitigated noise from that tight loop, will the extraordinary measures needed to control it be taken? The two different sources of noise will require two different types of control. Will the additional noise from additional storage tracks be controlled with additional measures? (0424, 0424-E -1)

**Public Comment:** Increased noise volume, frequency, and duration can be expected from the additional trains on the new track and at the WFC train storage and maintenance yard. This noise may be exacerbated by a tunnel at the train yard concentrating and directing noise at the Westhampton neighborhood. (0398, 0398-L -1) (0386, 0386-E -1) (0399, 0399-L -1) (0412, 0412-L -1) (0415, 0415-L -1) (0416, 0416-L -1) (0430, 0430-E -1) (0431, 0431-E -1) (0438, 0438-E -1) (0442, 0442-L -1) (0465, 0465-L -1) (0466, 0466-L -1) (0467, 0467-L -1) (0469, 0469-L -1) (0474, 0474-L -1) (0473, 0473-L -1) (0471, 0471-L -1) (0470, 0470-L -1)

**Public Comment:** The increased noise can be expected from the additional trains on the new track and at the WFC train storage and maintenance yard. This noise may be exacerbated by a tunnel at the train yard concentrating and directing noise at the Westhampton neighborhood. It is requested additional sound barriers as well as reinforcement of existing sound barriers be included. (0422, 0422-E -1)

**Public Comment:** While we recognize the necessity of developing new transportation infrastructure in Northern Virginia, and the appropriateness of extending the Washington Area Metro into the Dulles Corridor toward Reston, we are very concerned that any such project must include significant mitigation of noise pollution, air pollution, water pollution and traffic impacts to the Westhampton neighborhood near the West Falls Church (WFC) Metro Station. Specifically, we are concerned that any and all mitigation strategies must be designed to mitigate peak noise levels from the proposed new WFC train yard rather than mitigate average levels. This should consider noise levels from the train yard in combination with noise from I-66 and the Dulles Access highway. Such mitigation should go beyond short walls around the tracks themselves and include additional sound reduction measures. (0388, 0388-L-1)

**Public Comment:** Before this project gets final approval in December 2002, we would request further discussion about this added track spur into the Metro Maintenance Yard and the disruptions it will cause in the future to our lifestyles. Few people object about the need of a rapid transit system to Dulles Airport and beyond, but please do not forge ahead without taking local neighborhood considerations such as ours, with high decibel noise levels, into serious consideration (0089, 0089-L –2)

**Public Comment:** Metro has always told us they want to be a good neighbor. Let's hope they become a better neighbor in alleviating irritating noise levels now and in the future with the new transit project. I'm sure our neighbors would welcome future meetings to discuss this important matter before any approval is given and any new construction begins. (0089, 0089-L –3)

**Public Comment:** Many problems have been brought to the attention of Metro over the years. Personally I've complained on different occasions and was advised in most cases the message would be passed on. Nothing happens. No return call. No change regarding the problem. My experience in recent years is that Metro does not care, and pays no or little attention to other people's inconvenience, loss of sleep, or proper compliance to local noise limits. (0417, 0417-L –2)

**Response:** *With respect to the concerns of communities on the noise of the Metrorail West Falls Church Yard, the Project Team recommended and the decision-makers approved the enclosure of 1) a portion of the existing loop track at the yard's eastern end and 2) the new yard lead in box structures. These noise mitigation measures by the Project will reduce the wheel squeal noise of the train movements within the Yard. The Project Team notes, however, that new residences have been recently constructed and occupied adjacent to the West Falls Church S&I Yard without any noise mitigation provided by the residential developer. As during the past ten-year effort to address yard noise, there will be coordination among DRPT, WMATA, Fairfax County officials and staff, and representatives of the communities during preliminary engineering and final design.*

*The number of additional cars at West Falls Church Yard has increased from 26 in the Draft EIS to 42 in the Supplemental Draft EIS and Final EIS in order to support the Metrorail fleet of the Wiehle Avenue Extension. Wheel squeal from the new yard lead (for Metrorail trains to and from the Dulles Corridor Line) at the east end of the yard was included in the modeling analysis. Based on measured noise levels from the current wheel squeal along a similar radius curve at the yard, exceedances of the FTA impact criteria are predicted at nearby residences. No exceedances are predicted from the Project's aerial guideway in the median of the Dulles Connector Road.*

*Other noise sources, such as train horns, were not included in the modeling analysis. Brake squeal was not determined to be a major problem. Based on the current operating schedule at the yard, the increase in the overall yard noise due to the cleaning and general operation of 42 additional Metrorail cars needed for the Project is expected to be minimal.*

### **Construct Loudoun County Rail Yard First to Reduce Impacts at West Falls Church**

**Public Comment:** This is an addition to my first comment page. I think the train yard out in Loudoun County should be built early in the process so the new trains going on the new rail line do not have to use the West Falls Church yard. There already is too much noise from wheel squeal now. We don't want any more. (0029, 0029-CC-1)

**Response:** *Thank you for your comment. Construction of the major Metrorail yard on Airport property is dependent on the construction of the Full LPA of 23.1 miles.*

### **Analyze Noise Impacts Based on Peak Noise Levels**

**Public Comment:** The noise level from the metrorail yard and the Dulles Connector Road is already intolerably high in our neighborhood [Greenwich Street]. We are skeptical that noise measurements cited

in the EIS reflect the true extent of the problem. Peak noise levels, not 24-hour averages, are needed to reasonably assess the impact of the quality of life in our community. (0389, 0389-E -3)

**Response:** *The Project Team utilized the guidelines established by the FTA (Transit Noise and Vibration Impact Assessment, 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. The FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects. However, in areas such as yours with higher background levels, Project noise limits established by the FTA are more stringent than in quieter areas allowing the ambient levels to remain the same in the future or increase only slightly before an impact is identified.*

*As described in Section 4.7 of the Final EIS, the noise analysis was conducted according to the FTA guidelines. Accordingly, the peak-hour equivalent noise level (or Leq) was used to evaluate impacts at non-residential receptors; and the 24-hour day-night noise level (or Ldn) was used to evaluate impacts at residential receptors. Although the FTA criteria are defined in terms of allowable project exposure, the basis for the FTA criteria is actually the increase in the cumulative noise (i.e., when the levels are added to the existing noise). To be conservative (or to determine the "peak cumulative noise output"), the modeling analysis included maximum operating volumes for all time periods under the two Build Alternatives. For example, the Friday-Saturday Metrorail schedule was selected to correspond with the extended operating hours from the then 5:30 AM to 2:00 AM. Furthermore, as described in Section 4.7 (Methodology), the total predicted project Ldn/Leq noise level at receptors includes all sources proposed as part of the Dulles Corridor Rapid Transit Project including Metrorail passbys, auxiliary equipment, wheel squeal, bus idling and typical activities at passenger stations such as public address announcements.*

*In addition to the FTA cumulative noise criteria, peak or maximum noise levels (or Lmax) from transit operations were also used to evaluate Project impacts using the WMATA Design Criteria for various residential land-uses. The Lmax noise level is independent of the existing background and the number of operations and represents the maximum level observed during a single event, such as a Metrorail or bus passby. The projected levels are shown in Section 4.7 of the Final EIS.*

*Although newer pre-cast concrete track structures are proposed to minimize excessive noise and vibration levels, the modeling analysis included a 4-decibel penalty to account for potential structural noise due to Metrorail passbys along all elevated sections of slab track. As described in Section 4.7 of the Final EIS, where exceedances of the FTA or the WMATA impact criteria are predicted, mitigation measures are proposed and will be refined during preliminary engineering and final design.*

### **EIS Underestimates Noise Impacts on Homes Along the Dulles Airport Access Road**

**Public Comment:** In terms of the present Environmental Study, the noise assessment is a complex set of self-serving measurements that completely obfuscate the reality that it is impossible to sleep with open windows or carry on a quiet conversation outside of those homes bordering the Access Road. (0087, 0087-L -4) (0087, 0227-E-2)

**Public Comment:** We will demonstrate that existing noise levels already demonstrate that the neighborhood is already in the 'Red Severe Impact Zone". The noises from the construction and operation of the Dulles Transit Project will create an even more severe impact and hardship for the neighborhood. (0174, 0300-L -1)

**Public Comment:** Clearly, the current noise problems will only be exacerbated by the proposed project. To show you how bad this is even today, I invite you to call and come to my home, to sit on my deck, and to see and hear for yourself. This situation should not be ignored. (0414, 0414-L -3)

**Response:** *The Project Team utilized the guidelines established by the FTA (Transit Noise and Vibration Impact Assessment, 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. As described in Section 4.7 of the Final EIS, the FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects against the background of existing noise levels. Where background noise is already high, as in your area, it takes only a relatively small increase to trigger an impact.*

### **Noise Analysis Should Consider Impacts of Metrorail Alternative Combined with Existing Background Traffic**

**Public Comment:** To cite only FTA policy guidance on noise mitigation misses the largest point. We believe that FHWA policy and VDOT's own policy should be applied to this coordinated high-rail highway project, especially given the past underestimates of vehicle usage. Density bonuses awarded to those who build within 1600 feet of metro stations will generate even more vehicular traffic. The problem we have with the EIS is that if your estimates and guesses are wrong, we have to live with. The traffic projects were very wrong, and we are living with it, and hearing it. (0137, 0137-T -5)

**Public Comment:** Our concern is NOISE. The Dulles Corridor, at our location, was projected (in 1982) to have an average vehicle count of 41,600 by the year 2000. By 1995, by VDOT count, that projection was already exceeded by 50%! By this project's projection for 2025, that vehicle average will be 86,000, and could be nearly double that, if you believe VDOT's projection for the segment near the Beltway. Thus, by the time this project is operational, the number of vehicles in our section of this corridor could easily have tripled from the projection made in 1982. When you compare that to the projections for the increase in jobs, population and work trips (all in and around this same corridor), such traffic increases may even be woefully underestimated - Metro or not. All of those 250,000 work trips projected for the corridor will not be able to use Metro. VDOT has said that regionwide use of transit is perhaps no more than 3% of trips. The Draft EIS projects that somewhere between 70% and 80% of corridor work trips will not, or cannot, use Metro. They will use their cars. Now, imagine you are standing on the Dulles Corridor pavement between Old Chain Bridge Road and Route 123. Eighty feet away, you can easily see into the second stories of our homes at eye level. Now add to that idyllic scene 216 tons of speeding high tech metal on 48 wheels as it grinds around the elevated curve into Tysons and screeches to a halt at Tysons East station - some 60 feet in the air! And yet, the Project's Draft EIS states that only the incremental noise due to the addition of rail service is assessed. What happened to the 86,000 to 143,000 average daily vehicles (traveling at 65 mph and including mail trucks, buses and motorcycles)? Luckily I am only a lay citizen, not an engineer. As a citizen, I am questioning and cautious - as an engineer I would be incredulous and terrified! (0137, 0176-L -3)

**Public Comment:** Our concern is NOISE. The Dulles Corridor, at our location, was projected (in 1982) to have an average vehicle count of 41,600 by the year 2000. By 1995, by VDOT count, that projection was already exceeded by 50 percent! By this project's projection for 2025, that vehicle average will be 86,000, and could be nearly double that, if you believe VDOT's projection for the segment near the Beltway. Thus, by the time this project is operational, the number of vehicles in our section of this corridor could easily have tripled from the projection made in 1982. When you compare that to the projections for the increase in jobs, population and work trips (all in and around this same corridor), such traffic increases may even be woefully underestimated - Metro or not. (0137, 0224-M -2)

**Public Comment:** The Dulles Corridor at our location was projected in 1982 to have an average daily vehicle count of 41,600 by the year 2000. By 1995, the actual count exceeded that by 50 percent. According to the EIS, that vehicle count is projected to reach 86,000 by 2025 and could be nearly double that if you believe VDOT's figures for the segment near the beltway. Thus, by the time this project is operational, the number of vehicles in our section of this corridor could easily have tripled from the projection made for 2000. When you compare that to your projections for the increase in corridor jobs, population and work trips, such vehicular traffic increases may be even woefully underestimated,

metrorail or not. All of those 250,000 work trips projected for the corridor will not use Metro. Some 70 or 80 percent will use their own cars. Now imagine you are standing on the Dulles Corridor pavement between Old Chain Bridge Road and Route 123. Eighty feet away you can see clearly into the second stories of our homes at Hallcrest Heights at eye level. Now add to that scene 216 tons of speeding high-tech metal on 48 wheels as it grinds around some 25 feet overhead around the elevated curve into Tysons and screeches to a halt at Tysons East. The project's draft EIS states that only the incremental noise due to the addition of rail service is assessed. What happened to the 86,000 to 143,000 average daily vehicles traveling below on the so-called Dulles connector? (0137, 0137-T -2) (0137, 0137-T-2)

**Public Comment:** The problem with your EIS and Noise Technical Report is that if your estimates and guesses are wrong, we have to live with it. The traffic projections were wrong, and we are living with it! You have our support for your project. Give us rail service...but not an eyesore and an earsore. (0137, 0176-L -9) (0137, 0224-M-9)

**Response:** *The Project Team utilized the guidelines established by the FTA (Transit Noise and Vibration Impact Assessment, 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. As described in Section 4.7.2 (Evaluation Criteria) of the Final EIS, the FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects against the background of existing noise levels. Where background noise is already high, as in your area, it takes only a relatively small increase to trigger an impact.*

*There is a potential for wheel squeal noise based on the 800-foot radius of curvature proposed near the Hallcrest Heights. However, to better define the onset of wheel squeal, actual source measurements were conducted along an existing Metrorail line near the Ronald Reagan Washington National Airport with a radius of 755 feet. Based on the results of the modeling analysis, ambient day-night noise levels from the Metrorail operations are predicted to range from 50 to 54 dBA at the Hallcrest Heights residences. These levels are well below the measured ambient background noise level of 59 dBA recorded at a residence at 7405 Hallcrest Drive. The modeling analysis includes three to four-foot parapets (or barriers along the edge of the track bed) proposed along all sections of aerial guideway (except on Airport property). As a result, no exceedances of the FTA criteria are predicted from Metrorail operations near Hallcrest Heights.*

*Additionally, the FTA guidelines were used to evaluate potential impacts due to transit operations. Impacts due to traffic were evaluated using the Federal Highway Administration (FHWA) guidelines only in those areas where the existing roadways would be modified or substantially changed (e.g., near Metrorail pocket tracks that would require a "bubbling" of the roadway). Because no modifications to the roadway are proposed near the identified communities, a future traffic analysis using the FHWA guidelines was not required and therefore, was not conducted.*

### **Concrete Parapets Inadequate to Mitigate Metrorail Alternative Noise**

**Public Comment:** Our second problem with the analysis as it relates to noise is that you have not suggested adequate mitigation. We hear Metro trains today as they travel at ground level. The EIS would have us believe that you can raise those trains above ground level, above the inadequate and broken old VDOT metal sound barriers, above the wooden barriers that are no longer effective, and mitigate the noise with five-foot concrete parapets next to the tracks. We don't believe it. The parallel barrier, in fact, from such a scheme may well magnify, not mitigate, the noise. Your own engineers have said that those five-foot parapets were used on the elevated rail on the Red Line where it crosses the beltway at Pooks Hill. There an expensive retrofit was necessary. (0145, 0145-T -7)

**Public Comment:** Our second problem with your analysis as it relates to noise is that you have not suggested adequate mitigation. We hear Metro trains today as they travel at ground level. The EIS would have us believe that you can raise those trains above ground level, above the inadequate and broken old VDOT metal sound barriers, above the MWAA wooden barriers that are no longer effective,

and mitigate the noise with three or five-foot concrete parapets next to the tracks. Please provide data that demonstrates the effectiveness of the proposed mitigation strategies. And please take a more careful look at the proposed breaks in the parapets and their heights. We [Ellison Heights-Mt. Daniel] believe there may be a need for the parapets to be continuous and five feet tall from start to end (from the I-66 beginning to the end proposed). (0145, 0452-E –4)

**Response:** *The effect of noise reflections due to large flat vertical structures will be investigated during preliminary engineering. Acoustically absorptive treatment is typically applied to both sides of parallel barriers to eliminate barrier degradation due to the “parallel barrier” effect.*

*Although the potential for additional structural noise was included in the noise assessment, it is highly unlikely due to the newer structural designs proposed along the Dulles Corridor. Pre-cast concrete supports, resiliently-supported ties, and continuously welded rail track included in the proposed track design all combine to greatly minimize overall noise and vibration levels from train passbys along aerial sections.*

*Additionally, three to four-foot parapets (or track edge barriers) are proposed as part of the design along all aerial Metrorail sections (except on Airport property). Based on the assumed Metrorail source height of two feet above rail combined with the top-of-rail elevation, the three to four-foot parapet height is predicted to effectively shield train passbys at nearby residences.*

### Using Only FTA Policy on Noise Mitigation is Inadequate

**Public Comment:** To cite only FTA policy guidance on noise mitigation, because presumably only rail service is being added, is not only short sighted, it misses the larger point. The Draft EIS even makes the point that the Dulles Connector (our section of the corridor) is planned for an additional two lanes. Would that be the case if a lot of new traffic were not envisioned? MWAA has already told us that they will not retrofit our community [Hallcrest Heights] with a more appropriate barrier. We will not wait until the connector is widened to have them tell us that again; this time adding that rail service is not their problem. (0137, 0176-L –7) (0137, 0224-M-7)

**Public Comment:** To avoid needless repetition in this record, we would like to join wholeheartedly in the position of the Ellison Heights-Mt. Daniel Civic Association submitted orally at the July 29 public hearing number 147, and presumably filed in the docket. Based on the analysis and commentary in the EIS, the noise impacts, both during and on completion of the project are clearly deficient. We, of course, cannot afford to hire experts to disprove your 'studies', but in many respects they just don't make common sense, and in some ways the conclusions contradict each other and past Metro experience. The Ellison Heights-Mt. Daniel testimony speaks directly to the specific items and issues in question. (0126, 0126-E –4) (0126, 0199-M-4)

**Response:** *The Project Team utilized the guidelines established by the FTA (Transit Noise and Vibration Impact Assessment, 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. As described in Section 4.7 of the Final EIS, the FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects against the background of existing noise levels. Where background noise is already high, as in your area, it takes only a relatively small increase to trigger an impact. Mitigations for potential noise impacts are also discussed in Section 4.7 of the Final EIS.*

*Additionally, the FTA guidelines were used to evaluate potential impacts due to transit operations. Impacts due to traffic were evaluated using the Federal Highway Administration (FHWA) guidelines only in those areas where the existing roadways would be modified or substantially changed (e.g., near Metrorail pocket tracks that would require a “bubbling” of the roadway). Because no modifications to the roadway are proposed near the identified communities, a future traffic analysis using the FHWA guidelines was not required and therefore, was not conducted.*

### Measuring Noise Impacts at Ground Level

**Public Comment:** One DOT engineer told us that the sound measurements are made at ground level. It that is true, I am sure that the gophers really appreciate it. The rest of us live 5 to 20 feet above ground level. (0087, 0087-L-10) (0087, 0227-E-8)

**Response:** All noise measurements conducted along the Project corridor were collected in accordance with good engineering practice and the guidelines and standards set forth in the FTA guidelines (Transit Noise and Vibration Impact Assessment, 1995), the American Society for Testing and Materials (ASTM) Standard Guide for Measurement of Outdoor A-weighted Sound Levels (1984), and the American National Standards Institute (ANSI) Method for the Measurement of Sound Pressure Levels (1981). Accordingly, ambient noise measurements are conducted at ground level with the microphone placed 5 feet above the ground (the approximate average height of human ears). Ground level noise measurements are typically used as a surrogate for all other elevated residences at the monitoring location. At ground level, where maximum noise attenuation and shielding occur (yielding a lower noise level), Project criteria threshold limits are determined to be most stringent based on the FTA impact assessment curves.

### Proposed Three-Foot Sound Barriers Will Increase Ambient Noise Impacts on Neighborhoods

**Public Comment:** The sound amelioration outlined in the Environmental Study is ridiculous. Putting 3-foot barriers next to the tracks may help reduce the sound experienced by the cars on the Dulles Access road, but will only amplify the ambient sound spilling out into the residential areas higher than your proposed barriers. (0087, 0087-L-12) (0087, 0227-E-10)

**Response:** As part of the overall track design, three to four-foot parapets (or track edge barriers) are proposed along all aerial Metrorail sections (except on Airport property). Based on the assumed Metrorail source height of two feet above rail combined with the top-of-rail elevation, the three to four-foot parapet height is predicted to effectively shield nearby residences from Project-related train passby noise. Acoustically absorptive treatment along the trackside of the parapets would further improve the shielding benefits of the structural parapets. See Section 4.7 of the Final EIS for more information.

### Noise Analysis Along Miracle Lane and Penguin Place

**Public Comment:** Although we have neither the time nor the hordes of engineers to unravel the figures provided in section 4 of the Environmental Study, some points even the layman can understand are: 1. No measurements were taken along Miracle Lane and Penguin Place, even though both areas directly adjoin the Dulles Access Road and are severely impacted by the road noise. Was this intentional? (0087, 0087-L-5) (0087, 0227-E-3)

**Response:** Noise measurements were conducted at 30 representative receptor locations to account for the various land use types found along the 23-mile Project corridor. Ambient noise measurements representative of your neighborhood were conducted at a residence at 7103 Norwalk Street approximately 1,500 feet to the south. The noise measurement program conducted along the Project corridor was conducted in accordance with good engineering practice and the guidelines and standards set forth in the FTA Transit Noise and Vibration Impact Assessment (1995), the ASTM Standard Guide for Measurement of Outdoor A-weighted Sound Levels (1984), and the ANSI Method for the Measurement of Sound Pressure Levels (1981).

### EIS Noise Analysis Conflicts with 1982 Study of the Dulles Airport Access Road

**Public Comment:** The 1982 environmental study for the Dulles Access Road showed that the noise level would be high impact for this area (based on far less traffic than the road now carries). Yet your study purports to show less noise even with more buses and trains! (0087, 0087-L –6) (0087, 0227-E –4)

**Response:** *The Project Team utilized the guidelines included in the FTA Transit Noise and Vibration Impact Assessment (1995) to evaluate impacts from transit operations on nearby receptors. Based on the FTA guidelines, an ambient noise-monitoring program was conducted to establish the Project criteria limits. Future Project noise levels from Metrorail operations and facilities only were compared with the established criteria limits to determine the location and severity of impact as prescribed by the FTA methodology. The FTA criteria are based on cumulative noise levels that vary with the existing background noise level (i.e., louder areas allow less additional Project noise) before impact is identified and thus reflect different land-uses found along a transit corridor. Current ambient noise levels may be lower than the 1982 levels due to the construction of noise barriers since that time.*

### Consideration of Fairfax County Noise Level Policies

**Public Comment:** The Fairfax County acceptable noise level for residential areas is 55 dba. In your scores of pages of definitions why was this fact conveniently omitted? Is it because this factor is exceeded in even less exposed locations than ours? (0087, 0087-L –7) (0087, 0227-E –5)

**Response:** *As described in Section 4.7 of the Final EIS, the Fairfax County noise ordinance (Code of the County of Fairfax, Chapter 108, January 1, 1976) of 55 dBA at residential receptors and 60 dBA at commercial receptors applies to stationary sources and facilities. The Fairfax County noise criteria were used to evaluate noise impacts from Project-related stationary facilities such as passenger stations, park-and-ride facilities, and rail yards. Where exceedances of the Fairfax criteria are predicted, proposed mitigation measures are identified in the Final EIS and will be evaluated further during preliminary engineering and final design.*

### Noise Analysis Does Not Adequately Reflect Roadway Noise

**Public Comment:** Your averaging factor for sound noise does not adequately reflect the impact of the roadway noise. Adding 10 dba to the average figures is a poor substitute for actuality. How often per night do you have to be awakened by buses shifting gears on the curve or high-revving motorcycles before you give up and seal your windows permanently? (0087, 0087-L –8) (0087, 0227-E –6)

**Response:** *The modeling analysis evaluated impacts from future Project operations only. Specifically, the noise assessment utilized the guidelines included in the FTA Transit Noise and Vibration Impact Assessment (1995) to evaluate impacts from transit operations on nearby receptors. According to the FTA guidelines, existing ambient noise due to current traffic levels is represented in the criteria threshold limit selected for each land-use area (e.g., louder areas allow less Project noise). The impact assessment of the Project criteria is based on future 2025 Design Year Project levels only, not existing or future traffic levels. As a result, mitigation generally focuses on Project only impacts related to Project operations.*

*The 24-hour day-night noise level (or Ldn) is adopted as a measure of cumulative noise impact for residential land-uses where sleep is involved for the following reasons:*

- *The Ldn noise level correlates well with residential annoyance surveys;*
- *The Ldn noise level increases with an event's duration corresponding further with resident's annoyance level;*
- *The Ldn measure incorporates all events that occur over a 24-hour period;*

- The Ldn level takes into account people's increased sensitivity to nighttime noise, when most people are asleep, by adding in a 10-decibel penalty for nighttime events between 10 PM and 7 AM; and,
- The Ldn is the designated measure of choice of several other federal agencies including the Federal Aviation Administration, the Environmental Protection Agency and the Department of Housing and Urban Development.

### Using Current Noise Levels as Basis for Evaluating Noise Impacts is Flawed

**Public Comment:** Using the currently unacceptable noise levels as a starting point is self-serving. It buries your additional noise behind the transgressions previously made by the Metropolitan Airports Authority in constructing the Dulles Access Road. Of course it does provide a convenient out in terms of escaping from any responsibility even though the rail would add to the noise level. (0087, 0087-L -9) (0087, 0227-E-7)

**Response:** *The Project Team utilized the guidelines established by the FTA in Transit Noise and Vibration Impact Assessment ( 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. The FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects against the background of existing noise levels. Where background noise is already high, as in your area, it takes only a relatively small increase to trigger an impact.*

### Proposed Five-Foot Parapet Inadequate to Mitigate Noise of Metrorail Alternative

**Public Comment:** Acoustical engineers and other noise consultants talk in terms of DBA, LEQ, LDN, VdB. In plain English that means din, rumble and squeal. Din is ambient noise level of the whole corridor, which is considerable now. Rumble is what happens when you add those 216 tons of six-car Metro trains, and squeal is what you get when those 48 steel wheels speed around the elevated curve prior to the brakes being applied. And yet your draft EIS says this will all be perfectly okay if you just add a five-foot parapet to either side of the track. My skepticism is monstrous. Ask anyone who now lives near an elevated Metro line, and we will. (0137, 0137-T -3)

**Public Comment:** Acoustical engineers and other noise consultants talk in terms of dBA, Leq, Ldn and VdB. In my terms, that means "din," "rumble," and "squeal." "Din" is the ambient noise level of the whole corridor, and it is considerable now. "Rumble" is what happens when you add those 216 tons of 6-car Metro trains. And "squeal" is what you get when those 48 wheels speed around an elevated 750 foot radius curve of steel rails, prior to the brakes being applied. None of that takes into account the effect of constructing this high speed flyover - pilings and all! And yet...under the quaint title of "mitigation," your Draft EIS says that all of this will be perfectly OK if you just add a 5 foot parapet to either side of the railbed. My skepticism exceeds the traffic projections! Metro tried such a solution to the elevated Red Line over the Beltway...and they had to go back and retrofit it with special measures to address the vibration & noise. One non-resident owner at Hallcrest lives near this spot and he tells me he hears every train. And he is a half mile away! (0137, 0224-M -4) (0137, 0176-L -5)

**Response:** *There is a potential for wheel squeal noise based on the 800-foot radius of curvature proposed near the Hallcrest Heights. To better define the onset of wheel squeal, actual source measurements were conducted along an existing Metrorail line near National Airport with a radius of 755 feet. Based on the results of the modeling analysis, ambient day-night noise levels from the Metrorail operations are predicted to range from 50 to 54 dBA at the Hallcrest Heights residences. These levels are well below the measured ambient background noise level of 59 dBA recorded at a residence at 7405 Hallcrest Drive. The modeling analysis includes three to four-foot parapets (or barriers along the edge of the track bed) proposed along all sections of aerial guideway (except on Airport property). As a result, no exceedances of the FTA criteria are predicted from Metrorail operations near Hallcrest Heights.*

### **Noise Analysis Should Include Impact of Increased Traffic Using FHWA and VDOT Policies**

**Public Comment:** FHWA policy, Interstate Standards and VDOT's own policy should be applied to this project - especially given the past underestimation of vehicle usage and development. Density bonuses awarded to those who build within 1600 feet of Metro stations, will generate more vehicular traffic as well as Metro ridership. My guess is that Metro's system in downtown DC is size constrained anyway. (0137, 0176-L –8) (0137, 0224-M-8)

**Response:** *The Project Team utilized the guidelines established by the FTA in Transit Noise and Vibration Impact Assessment (1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. The FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects. However, in areas, such as yours, with higher background levels, Project noise limits established by the FTA are more stringent than in quieter areas allowing the ambient levels to remain the same in the future or increase only slightly before an impact is identified.*

*Additionally, the FTA guidelines were used to evaluate potential impacts due to transit operations. Impacts due to traffic were evaluated using the Federal Highway Administration (FHWA) guidelines only in those areas where the existing roadways would be modified or substantially changed (e.g., near Metrorail pocket tracks that would require a “bubbling” of the roadway). Because no modifications to the roadway are proposed near the identified communities, a future traffic analysis using the FHWA guidelines was not required and, therefore, was not conducted.*

### **Construction/Operation Activities from BRT and Metrorail Alternatives will Worsen Noise Levels**

**Public Comment:** Construction activities and operation of either the Bus or Metrorail alternatives will aggravate an already serious noise situation, especially because the buses and/or the Metrorail are major contributors to noise and will operate until midnight during the week and 2 am on weekends. (0174, 0300-L –4)

**Response:** *The noise modeling analysis evaluated impacts due to daytime construction activities only. Changes to the proposed construction schedule will be evaluated in preliminary engineering and appropriate mitigation measures will be proposed if exceedances of the Project nighttime construction criteria are predicted.*

*Additionally, the operating times and vehicle characteristics of both Metrorail were included in the noise modeling analysis. For example, the Friday – Saturday Metrorail schedule was selected to correspond with the extended operating hours from the then 5:30 AM to 2:00 AM. Specifically, the noise assessment utilized the guidelines included in the FTA's Transit Noise and Vibration Impact Assessment (1995) to evaluate impacts from Metrorail on nearby receptors. Accordingly, mitigation measures are proposed in those areas where exceedances of the FTA impact criteria are predicted as described in Section 4.7 of the Final EIS.*

### **Increased Density will Increase Noise and Traffic Effects on Hallcrest Heights**

**Public Comment:** VDOT's noise criteria were judged not to apply because "no other roadways changes affecting either capacity or elevation are expected..." This is a narrow and not totally accurate viewpoint since both VDOT traffic projections and expectation for increased vehicle usage stemming from density allowances, will substantially increase traffic in the Dulles Connector section that adjoins our community [Hallcrest Heights]. The EIS references plans to widen the Connector [Road], giving further indication of the prospect of vehicular traffic. The EIS should broaden its noise abatement scope to include both MWAA and VDOT policy as well as that of the FTA. (0137, 0304-L –1)

**Response:** *Except where noted, no other changes to the existing roadways are proposed as part of the Dulles Corridor Rapid Transit Project. Any other roadway changes are part of other projects sponsored by either the VDOT or the MWA, and are independent of this Project.*

### **Need Mitigation for Noise Caused by Turnouts (Switches)**

**Public Comment:** Noise -- Noise analysis did not consider the effect of turnouts (switches). Measures to mitigate resulting noise and vibration such as resilient track fasteners, movable frogs or some similar measures, need to be identified. (0387, 0387-L –19)

**Response:** *As described in Section 4.8 of the Final EIS, potential vibration impacts from Metrorail passbys due to rail discontinuities were evaluated in the modeling analysis. At those locations where exceedances of the project vibration criteria are predicted, mitigation measures are proposed and will be refined during preliminary engineering and/or final design.*

### **Noise Evaluation Should Include Peak Cumulative Noise Output**

**Public Comment:** Deficiencies in the noise analysis. The analysis is based on average rather than peak noise levels and does not consider the cumulative affect of noise from the train yard, the highway and the metal track support. The peak cumulative noise output (i.e., train on metal track support plus train yard plus highway) after mitigation has not been quantified. (0386, 0386-E –2) (0398, 0398-L –2) (0399, 0399-L –2)(0412, 0412-L –2) (0415, 0415-L –2) (0416, 0416-L –2) (0430, 0430-E –2) (0431, 0431-E –2)(0438, 0438-E –2) (0442, 0442-L –2) (0465, 0465-L –2)(0466, 0466-L –2) (0474, 0474-L –2) (0473, 0473-L –2) (0471, 0471-L –2) (0470, 0470-L –2) (0467, 0467-L –2) (0469, 0469-L –2)

**Response:** *As described in Section 4.7.2 (Evaluation Criteria) of the Final EIS, the noise analysis was conducted according to the FTA Transit Noise and Vibration Impact Assessment ((1995) guidelines. Accordingly, the peak-hour equivalent noise level (or Leq) was used to evaluate impacts at non-residential receptors; and the 24-hour day-night noise level (or Ldn) was used to evaluate impacts at residential receptors. Although the FTA criteria are defined in terms of allowable Project exposure, the basis for the FTA criteria is actually the increase in the cumulative noise (i.e., when the Project levels are added to the existing noise). To be conservative (or to determine the “peak cumulative noise output”), the modeling analysis included maximum operating volumes for all time periods under both the Metrorail and the BRT Alternatives. For example, the Friday-Saturday Metrorail schedule was selected to correspond with the extended operating hours from the then 5:30 AM to 2:00 AM.*

*However, in addition to the FTA cumulative noise criteria, peak or maximum noise levels (or Lmax) from transit operations were also used to evaluate Project impacts using the WMATA Design Criteria for various residential land-uses. The Lmax noise level is independent of the existing background and the number of operations and represents the maximum level observed during a single event, such as a Metrorail or bus passby.*

*Although newer pre-cast concrete track structures are proposed to minimize excessive noise and vibration levels, the modeling analysis included a 4-decibel penalty to account for potential structural noise due to Metrorail passbys along all elevated sections of slab track. As described in Section 4.7of the Final EIS, where exceedances of the FTA or the WMATA impact criteria are predicted, mitigation measures are proposed and these measures will be refined further during preliminary engineering and final design.*

### **Questions About Noise Impacts on the Rotonda Condo Units**

**Public Comment:** The projected noise levels at International Drive and Westpark Drive (Location R12) do not appear to represent the sound levels within the condominium units resulting from the elevated rail adjacent to the Rotonda. These could exceed FTA guidelines. I doubt if sound buffers could reduce this

sufficiently. Also, it does not appear that the number of living units affected by the noise have been cited, the Rotonda seems to be counted as one receptor. (0429, 0429-E –4)

**Public Comment:** The issue of intermittent noise intrusion from passing trains and wheel squeal adjacent to the Rotonda is not sufficiently addressed. (0429, 0429-E –5)

**Response:** *These comments concerned the potential effects of Alignment T4, which was eliminated from further consideration after the public and agency review and comment on the Draft EIS. No noise impact is projected in the vicinity of the Rotonda.*

### **Metrorail Noise Will Adversely Affect Home Value**

**Public Comment:** The value of our home will be adversely affected with any of the current build alternatives. We will have trains flying outside our bedroom windows at 1 1/2 minute intervals at rush hour (3 min./side). Our privacy loss will be tremendous. We don't hear average sounds and yet all analysis is based on averages. I want to know what the cumulative peak sound will be on my deck when you add rush hour freeway, Metro above ground on metal and concrete beds, new feeder buses, extra track, and more yard work. We estimate it will be greater than a jack hammer at 50 feet. Our values are already falling. How will we be compensated? It is unfair to subject us all to a combo of aerial Metro above and sound and visual wall, freeway and rail yard. Plus the train making a 90 degree turn. Take the thing underground for this unusual combo of factors. Nowhere in the system are residents subjected to all three of these huge noise sights at the same time. (0398, 0398-L –13)

**Response:** *The modeling analysis evaluated impacts from future proposed Metrorail operations in accordance with the FTA's Transit Noise and Vibration Impact Assessment (1995) guidelines. The 24-hour day-night noise level (or Ldn) is adopted as a measure of cumulative noise for residential land uses where sleep is involved for the following reasons:*

- § *The Ldn noise level correlates well with residential annoyance surveys;*
- § *The Ldn noise level increases with an event's duration corresponding further with resident's annoyance level;*
- § *The Ldn measure incorporates all events that occur over a 24-hour period;*
- § *The Ldn level takes into account people's increased sensitivity to nighttime noise, when most people are asleep, by adding in a 10-decibel penalty for nighttime events between 10 PM and 7 AM; and,*
- § *The Ldn is the designated measure of choice of several other federal agencies including the FAA, the EPA, and the Department of Housing and Urban Development.*

*Historically, property values have risen in areas where greater access to Metrorail has been provided.*

### **Need More Consideration of Noise Impacts on Neighborhoods Near East and West Falls Church Metrorail Stations**

**Public Comment:** There needs to be more consideration given to the noise and traffic impact to all neighborhoods around East and West Falls Church metro stations. Too many neighborhoods were left out of this study area. (0179, 0179-T –10)

**Public Comment:** My neighborhood's concerns revolve around noise, vibration and traffic. My community borders I-66, rail and the West Falls Church transit station. Ironically, my community was not listed as an impacted neighborhood, nor was the Villages condominium complex right next to the Pavilion, nor were the three neighborhoods bordered by I-66, Haycock Road and Great Falls Street, a triangle of land where residents already suffer significant noise impacts from I-66 and the connector split. You didn't include the Lemon Road community, one that already suffers from the noise from your maintenance yard. (0145, 0145-T –3)

**Response:** *Neighborhood impacts were assessed in Section 3.2 of the Final EIS. Neighborhoods within 300 feet of the centerline of the Build Alternatives alignments and within one half-mile of the proposed station areas were identified for evaluation. This area was reviewed after the noise, vibration, air quality, and visual effects analyses were completed and several additional neighborhoods and community facilities were added to the study area. For each of these neighborhoods evaluations for changes to community cohesion, isolation effects, displacements, noise and vibration, access changes, and safety were conducted. For example, the Pavilion and Hallcrest Heights were added to the study due to projected noise effects. Neighborhoods that are located between the East Falls Church and West Falls Church stations and that are already in close proximity to rail were not included in the analysis, since there were no projected changes in service due to the Project in this section of the corridor.*

*The comment references several neighborhoods, including a community that borders I-66, Metrorail and the West Falls Church Station; the Village condominium complex, three neighborhoods bordered by I-66, Haycock Road, and Great Falls Street; and the Lemon Road community. Three neighborhoods were evaluated within the Project boundaries in the vicinity of I-66 and the West Falls Church Station: Idylwood (which would include all residences south of the Dulles Connector Road and north of I-66 in close proximity to the station) that would experience noise impacts; the Pavilion (which has a direct view of the West Falls Church station and would experience visual effects during construction); and the Westhampton neighborhood (which includes all residences between Great Falls Street, Haycock Road and northeast of the Dulles Connector and which would experience noise impacts).*

*The first area referenced in the comment would (most likely) be located in the Idylwood neighborhood or Westhampton neighborhood. The Village condominium complex was not included because no impacts were projected. The three neighborhoods bordered by I-66, Haycock Road, and Great Falls Street, and the Lemon Road communities are located outside of the study area boundaries, but would have been included in the analysis of traffic and noise effects if any effects were identified in these neighborhoods.*

*Section 6.2 of the Final EIS and Chapter 8.0 of the Traffic Analysis and Station Access Technical Report (June 2002) both state that large increases in vehicle trips are not anticipated for the West Falls Church Station area for the two Build Alternatives.*

### **Revise EIS to Discuss Mitigation of Cumulative Highway and Train Noise on McLean Communities**

**Public Comment:** Noise: The EIS does not consider the impacts of noise from additional vehicular traffic that will result from density increased that can be granted to landowners when rail is built. This additional vehicular noise is additive with the noise generated by trains in the rail alternatives. For the rail alternatives, the EIS should be revised to analyze the cumulative noise impacts of increased vehicular traffic together with noise from the passing trains. The impact analysis for McLean should focus on the Dulles Airport Access Road connector between I-66 and Dolley Madison Boulevard and the Dulles Toll Road between Route 7 and Hunter Mil Road. The EIS should be revised to discuss the noise abatement measures that would be implemented to mitigate this cumulative highway and train noise impact. (0392, 0392-L –18)

**Response:** *The FTA Transit Noise and Vibration Impact Assessment (1995) guidelines were used to evaluate potential impacts due to transit operations. Impacts due to traffic were evaluated using the FHWA guidelines only in those areas where the existing roadways would be modified or substantial changed (e.g., near Metrorail pocket tracks that would require a “bubbling” of the roadway). Because no modifications to the roadway near Hallcrest Heights are proposed, a future traffic analysis using the FHWA guidelines was not conducted.*

*As described in Section 4.7of the Final EIS, future traffic noise levels under the Metrorail Alternative are predicted to approach or exceed the FHWA impact criteria along the Dulles Corridor just west of Fairfax County Parkway. However, because no roadway changes are*

*proposed as part of the Dulles Corridor Rapid Transit Project between I-66 and Dolley Madison Boulevard or between Route 7 and Hunter Mill Road, a FHWA traffic analysis was not performed in these areas.*

**Public Comment:** Be it further resolved that the EIS should be substantively revised to address a number of stated concerns of McLean communities detailed in the attached comments and summarized below: Assess and mitigate the total corridor noise both from rail service and elevated trackage as well as from vehicular traffic generated by densities related to rail service. (0392, 0392-L –2)

**Response:** *As described in Section 4.7 of the Final EIS, the FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects. However, in areas, such as yours, with higher background levels, Project noise limits established by the FTA are more stringent than in quieter areas allowing the ambient levels to remain the same in the future or increase only slightly before an impact is identified.*

*Additionally, the FTA guidelines were used to evaluate potential impacts due to transit operations only. Impacts due to traffic were evaluated using the FHWA guidelines only in those areas where the existing roadways would be modified or substantially changed as a result of the Project. Because no modifications to the roadway along the Dulles Airport Connector Road are proposed, a FHWA traffic analysis was not performed in these areas.*

*Along elevated sections of track, the aerial structure may exhibit additional noise as a result of train passbys. Although the potential for additional structural noise was included in the noise assessment, it is highly unlikely due to the newer structural designs proposed along the Dulles Corridor. Pre-cast concrete supports, resiliently-supported ties, and continuously welded rail (CWR) track included in the proposed track design all combine to greatly minimize overall noise and vibration levels from train passbys along aerial sections. Additionally, three to four-foot parapets are proposed as part of the design along all sections of aerial guideway (except on Airport property) to further reduce train noise at nearby receptors.*

*Mitigation measures are identified in Section 4.7 of the Final EIS to eliminate exceedances of the impact criteria predicted along the Project corridor. No new noise barriers are proposed along the Dulles Toll Road property line with the adjacent residences to replace or augment the existing barriers.*

### **Locations and Adequacy of Noise Level Readings**

**Public Comment:** It was noted that increasing train frequency and length will unquestionably result in a net increase in noise levels, but it seems there has been only a limited attempt to determine how much. Also, the decibel levels on the record are the averages of high and low readings. This is not very useful because only the high levels cause noise problems. In addition, there were questions about the locations where noise level readings were taken and at what times of day. (0432, 0432-E –11)

**Response:** *Cumulative future noise levels are a function of the magnitude of both the ambient background level as well as the noise from transit operations. Although the FTA criteria allow the ambient noise levels to increase 1 to 3 decibels (depending on the current background level), Project noise levels are predicted to increase the ambient level by less than 2 decibels. Where exceedances of the FTA criteria are predicted, mitigation measures are proposed that would reduce the transit noise level below the background. The future noise levels are a logarithmic sum of the predicted Project noise levels and the measured background levels.*

*As described in Section 4.7 of the Final EIS, the noise analysis was conducted according to the FTA Transit Noise and Vibration Impact Assessment (1995) guidelines. Accordingly, the peak-hour equivalent noise level (or Leq) was used to evaluate impacts at non-residential receptors;*

and the 24-hour day-night noise level (or Ldn) was used to evaluate impacts at residential receptors. Although the FTA criteria are defined in terms of allowable Project exposure, the basis for the FTA criteria is actually the increase in the cumulative noise (i.e., when the Project levels are added to the existing noise). To be conservative (or to determine the “peak cumulative noise output”), the modeling analysis included maximum operating volumes for all time periods under two Build Alternatives of the Final EIS. For example, the Friday-Saturday Metrorail schedule was selected to correspond with the extended operating hours from the then 5:30 AM to 2:00 AM. Furthermore, as described in Section 4.7.3 (Modeling Methodology and Assumptions), the total predicted Project Ldn/Leq noise level at receptors includes all sources proposed as part of the Dulles Corridor Rapid Transit Project including Metrorail passbys, auxiliary equipment, wheel squeal, bus idling and typical activities at passenger stations such as public address announcements.

However, in addition to the FTA cumulative noise criteria, peak or maximum noise levels (or Lmax) from transit operations were also used to evaluate Project impacts using the WMATA Design Criteria for various residential land-uses. The Lmax noise level is independent of the existing background and the number of operations and represents the maximum level observed during a single event, such as a Metrorail or bus passby.

Although newer pre-cast concrete track structures are proposed to minimize excessive noise and vibration levels, the modeling analysis included a 4-decibel penalty to account for potential structural noise due to Metrorail passbys along all elevated sections of slab track. As described in Section 4.7 of the Final EIS, where exceedances of the FTA or the WMATA impact criteria are predicted, mitigation measures are proposed and will be refined further during preliminary engineering and final design.

Noise measurements were conducted at 30 representative receptor locations to account for the various land-use types found along the 23.1-mile Project corridor. Ambient noise measurements representative of the commenter’s neighborhood were conducted at a residence at 7103 Norwalk Street approximately 1,500 feet to the south. The noise measurement program conducted along the Project corridor was conducted in accordance with good engineering practice and the guidelines and standards set forth in the FTA guidelines, the ASTM Standard Guide for Measurement of Outdoor A-weighted Sound Levels (1984), and the ANSI Method for the Measurement of Sound Pressure Levels (1981).

#### **Need More Attention on Need for Noise Mitigation**

**Public Comment:** I feel that insufficient attention has been given to the need for noise mitigation. (0432, 0432-E-2)

**Response:** Where exceedances of the Project criteria are predicted, proposed mitigation measures have been identified (see Section 4.7 of the Final EIS) and will be further refined during preliminary engineering and final design.

#### **Need to Consider Weather Conditions During Noise Survey**

**Public Comment:** Existing Conditions--The quantification of the existing ambient sound levels apparently was limited to one 24-hr interval on 23 January 2001. While the controlling highway noise source at Hallcrest Heights is likely to be very consistent, substantial variations can occur due to weather conditions. No documentation was given for the weather during the noise survey. (0137, 0176-L –10)

**Response:** The noise measurement program conducted along the Project corridor was conducted in accordance with good engineering practice and the guidelines and standards set forth in the FTA guidelines, the ASTM Standard Guide for Measurement of Outdoor A-weighted Sound Levels (1984), and the ANSI Method for the Measurement of Sound Pressure Levels (1981).

*The 24-hour continuous noise measurement was conducted at a residence at 7405 Hallcrest Drive beginning Tuesday, January 23, 2001 at 2:43 PM. Based on the field measurement notes, the weather conditions (clear and calm with an ambient temperature of approximately 40 degrees Fahrenheit) were appropriate for determining the current background level at this receptor location.*

### **Need for Sound Abatement Walls**

**Public Comment:** Sound abatement walls for both the rail system and the Toll/Access Road on both the south and north sides of the roadway. (0075, 0075-CC-4)

**Response:** *Proposed mitigation measures are identified in Section 4.7 of the Final EIS to eliminate exceedances of the Project impact criteria predicted along the Project corridor. No new noise barriers are proposed along the Dulles Toll Road property line with the adjacent residences to replace or augment the existing barriers.*

### **Previous Promises to Build Adequate Sound Walls**

**Public Comment:** Broken Promises: The officials made several promises (after an editorial was published in the Washington Post) that a 15-20 foot wall would be constructed on a five-foot berm. The actual wall constructed is 8-10 feet tall and doesn't even block the view of the traffic, much less the noise. Millions of dollars were saved by the re-routing of the road closer to residential property, yet the engineers said it would be too expensive to build a higher soundwall. (0087, 0087-L –3)

**Response:** *Noise barriers are typically designed to incorporate and benefit from all of the nearby terrain features. Although barriers are designed to shield noise and other unwanted sounds, they are also designed to handle environmental effects including wind shear, erosion, traffic accidents, and visual or other visibility restrictions. These factors influence the height of the walls. The evaluation of noise impacts conducted for the Dulles Corridor Rapid Transit Project focused on new impacts associated with potential Project implementation in accordance with the FTA transit noise assessment procedures. Section 4.7 of the Final EIS includes a discussion of noise impacts and mitigation measures related to this Project.*

*The Project Team did recommend that, with respect to the concerns of communities on the noise of the Dulles Connector Road, the Commonwealth of Virginia would seek to address the existing noise effects upon the residential communities with noise abatement measures. If the Commonwealth decides to proceed with noise abatement measures, it would bear most of the cost of the abatement, since this is an existing condition due mainly to traffic to and from the Dulles Toll Road. The Project itself would share in the cost of abatement proportional to the Project's contribution to the future levels of noise and to its visual effects. DRPT has been identified as the lead agency for the coordination among VDOT, MWAA, WMATA, FTA, Fairfax County officials and staff, and representatives of the affected communities*

### **Upgrade Noise Barriers in Area of Hunting Avenue**

**Public Comment:** The noise barriers existing along the northwestern end of the Dulles Corridor should be upgraded. As a resident of Hunting Avenue, which is parallel to and adjacent to the Dulles Connector Road, I can say that those barriers are too short and thin to prevent high levels of noise even for the current traffic conditions. It is easy to anticipate the noise consequences of the future above-ground metrorail. (0118, 0118-E –2)

**Public Comment:** I recommend that the construction of metrorail to Tysons Corner include the removal of the existing noise barriers and the construction of new barriers consistent with the current standards of noise protection. (0118, 0118-E –3)

**Response:** Parapets (or track edge barriers) are proposed to shield new noise from Metrorail train passbys along all aerial (above-ground) sections of track. At those locations where exceedances of the FTA criteria are still predicted along Hunting Avenue, additional parapet heights (six-feet) are proposed to minimize the predicted Project-related impacts. Changes to the existing highway property line noise barriers along the Dulles Connector Road are not considered part of the Project.

### **Recommend a Sound Barrier Constructed Between Beulah and Trapp Roads**

**Public Comment:** We will show that the existing noise levels already put the neighborhood in the red severe impact zone. The noises from construction and operation of the Dulles transit project will create an even more severe impact and hardship for the neighborhood. Our recommendation is that a sound barrier be constructed between Beulah Road and Trapp Road. The Chathams Ford neighborhood is the only residential neighborhood along the Toll Road up to Dulles Airport which does not have a sound barrier. (0174, 0174-T -2)

**Response:** The Project Team utilized the guidelines established by the FTA (Transit Noise and Vibration Impact Assessment, Month 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. As described in Section 4.7 of the Final EIS, the FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects against the background of existing noise levels. Where background noise is already high, as in your area, it takes only a relatively small increase to trigger an impact.

Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. Parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). Figures 4.7-5a and 4.7-5b in the Final EIS are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street.

Roadside sound barriers are typically evaluated during the design of major highway improvement projects such as widening or new alignment when noise impacts are forecast for adjacent noise-sensitive receptors. Evaluation criteria including effectiveness and cost are typically employed to make decisions on sound barrier location, height, and type. Generally speaking, sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.

### **Requests for Noise Abatement and Sound Barriers**

**Public Comment:** As part of this Rapid Transit Project I am checking to see if there are plans for a sound wall to be put up on our street. If there is no plan for a sound wall to be put up what do we have to do to get one? (0111, 0111-E -1)

**Public Comment:** Additional noise wall is needed at the north and south ends of Greenwich Street where the track is near grade. Potential usefulness of noise wall along the middle of Greenwich Street, given the topography of the site and plan for elevated track, should be assessed. (0389, 0389-E -2)

**Public Comment:** Construct a sound barrier between Beulah Road and Trap Road. (0174, 0300-L -2)

**Public Comment:** This document is submitted to register our strong opposition to the inadequate plans for sound suppression in the area south of the Dulles Access Road between West Falls Church Metro Station and Magarity Road. Despite a history of sham meetings and broken promises, this letter is submitted (if for no other reason than to be on record). (0087, 0227- E -1) (0087, 0087-L-1)

**Public Comment:** We understand the need for light rail and think it offers the best alternative, but be assured that this citizen and business owner as well as many others will do everything legally possible to delay the assignment of Federal, State, or Country funds until the noise suppression issue west of the West Falls Church Metro Center is addressed adequately. (0087, 0227-E –11)

**Public Comment:** Therefore, we call for the construction of a large sound barrier along the east side of the Access Road from the bridge that takes Great Falls Road over the Access Road to the bridge that takes Haycock Road over the Access Road. While we would support the construction of additional sound barriers, we believe that we have requested the minimum amount of construction necessary for the protection of our neighborhood. We would expect that any sound barrier constructed be of substantial size and scale to be effective. Ideally, the barrier should include in addition to a concrete wall, the planting of a substantial number of evergreen trees to increase the effectiveness of the barrier. (0435, 0435-E –4)

**Public Comment:** Noise - Residential neighborhoods must be adequately protected from heavy rail noise, such as from passing trains, wheel squeal from trains rounding curves, etc. (0402, 0402-L –12)

**Public Comment:** Additional noise mitigation features, such as additional sound barriers and reinforcement of existing sound barriers [Westhampton]. (0386, 0386-E-7) (0398, 0398-L-7) (0399, 0399-L-7) (0412, 0412-L-7) (0415, 0415-L-7) (0416, 0416-L-7) (0430, 0430-E-7) (0431, 0431-E-7) (0438, 0438-E-6) (0442, 0442-L-6) (0465, 0465-L-7) (0466, 0466-L-6) (0467, 0467-L-6) (0469, 0469-L-6) (0470, 0470-L-7) (0471, 0471-L-6) (0473, 0473-L-7) (0474, 0474-L-7)

**Public Comment:** Additional noise mitigation features, such as additional sound barriers extending along the Dulles Connector Road behind the Westhampton subdivision and reinforcement of existing sound barriers. (0403, 0403-L-6)

**Response:** *Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or the Dulles Toll Road as part of the Project. Three to four-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). The locations of the proposed mitigation measures are described in Section 4.7 of the Final EIS. Figures 4.7-5a and 4.7-5b in the Final EIS are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street.*

*Roadside sound barriers are typically evaluated during the design of major highway improvement projects such as widening or new alignment when noise impacts are forecast for adjacent noise-sensitive receptors. Evaluation criteria including effectiveness and cost are typically employed to make decisions on sound barrier location, height, and type. Generally speaking, sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.*

### **Concern Over Noise Impacts on the West Falls Village Development**

**Public Comment:** The West Falls Village Homeowners Association represents the citizens living in the West Falls Village development. The West Falls Village development consists of homes along the 6600 block of Moly Drive and along Great Falls Road. The homes of West Falls Village are separated from Interstate 66 at the intersection of the Dulles Toll / Access Road (Access Road) by a small and inadequate barrier of trees. Since the homes were built after the highway and Metro lines were in place no sound barrier of any kind has been constructed to protect our neighborhoods from the noise generated by the highway and the Metro. Since this noise already adversely affects our neighborhood, we are greatly concerned about any increase in noise resulting from increased car and/or train traffic along the Access Road. (0435, 0435-E –1)

**Response:** *Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). The locations of the proposed mitigation measures are described in Section 4.7 of the Final EIS.*

Figures 4.7-5a and 4.7-5b are included in the Final EIS to help identify the location of the proposed five to six-foot parapet barriers closest to your street.

Roadside sound barriers are typically evaluated during the design of major highway improvement projects such as widening or new alignment when noise impacts are forecast for adjacent noise-sensitive receptors. Evaluation criteria including effectiveness and cost are typically employed to make decisions on sound barrier location, height, and type. Generally speaking, sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.

Additionally, no exceedances of the FTA or the WMATA noise impact criteria are predicted along the Moly Drive area of Great Falls Road. However, as shown in the Noise and Vibration Technical Report Appendix (June 2002), exceedances of the FTA and the WMATA impact criteria are predicted at residences along the triangle bounded by Haycock Road, Westwood Place and Great Falls Road. Mitigation measures have been identified to minimize these impacts and are contained in Section 4.7 of the Final EIS. These measures will be refined during preliminary engineering and/or final design.

#### **Question About Parapet for Aerial guideway Section Over I-66 Near West Falls Church**

**Public Comment:** The parapet for the elevated section of track that goes over I-66 near the West Falls Church station is designed to be only 3 feet (light blue color on Figure 5). On either end of that elevated section where the track is lower the parapet is designed to be 5 ft. high. Why is the parapet lower where the track is higher in elevation and sound will spread out more? (0029, 0293-L -1)

**Response:** While three to four-foot parapets are proposed along all sections of aerial guideway (except on Airport property), five to six-foot parapets are proposed in areas where exceedances of the FTA impact criteria are predicted. Additionally, higher track elevations do not necessarily equate to more spreading of sound. Higher track elevations, combined with track edge parapets, are predicted to block the line-of-sight of the Metrorail wheel-rail noise and thereby provide more shielding than at grade level.

#### **Concern Over Adequate Noise Barriers for Neighborhoods Along Dulles Toll Road**

**Public Comment:** Regarding the evaluation of highway noise barrier performance, such analyses should be based upon best-available future traffic projections. From data recently provided by VDOT, 2020 traffic sound levels may be as much as 6-7 dBA greater than those for which the noise barriers around the Hallcrest Heights development originally were designed (considering only the increase in traffic volume - ignoring the presence of any trucks or buses and ignoring any increase in vehicle speeds). (0137, 0224-M -11) (0137, 0176- L-14)

**Public Comment:** Should such a [noise] barrier be constructed we could support this project. If the Dulles Corridor Rapid Transit Project is unwilling to include this minimal effort to protect the citizens of our neighborhood [West Falls Village], we would regretfully have no choice but to oppose this project by all lawful means at our disposal including the potential for legal action. (0435, 0435-E -5)

**Public Comment:** Our Association recognizes the potential of this project to increase use of mass transit in Fairfax County and thereby reduce congestion and pollution overall in the County. However, we believe that in accordance with the values of Fairfax County and the Commonwealth of Virginia and in light of the commitment from the Dulles Corridor Rapid Transit Project to work with surrounding communities to mitigate the effects of the project that the project must include measures to ensure that our quality of life and property values are not severely damaged as a result of this project. It is wrong for this project, which has the potential to benefit so many, to be built at the detriment to the few people who live directly next to it. We, therefore, are concerned and dismayed that there are no current plans to build noise barriers as part of this project (Dulles Transit web site FAQ number 19). We believe that this failure is inconsistent with the spirit of continued cooperation with the public that the project claims in the draft Environmental

Impact Statement (DEIS). We also believe that the failure to provide a detailed analysis of both the detrimental health impacts of the noise from increased rail traffic to citizens living near the rail lines without sufficient noise protection and the effect of the noise on property values in those communities is a fatal flaw of the DEIS. (0435, 0435-E –3)

**Public Comment:** Almost every other similar community along the Dulles Corridor between the Beltway and Dulles Airport has gotten a 25-35 foot high cast concrete noise wall, with the latest absorptive coating...and extending all the way down nearby off-ramps. This is exactly what Maryland has now added along their portion of the Beltway. This is what we insist on being added to our location. From Old Chain Bridge Road along the corridor and all the way down the off-ramp to the merge with Route 123. (0137, 0224-M –6)

**Public Comment:** We are presently bordered by a low tech, 6-8 foot rotting wooden barrier (see attached pictures) which does not even extend down the off-ramp that wraps around our community. Our engineer tells us that the proposed parapet would set up a "parallel barrier" effect which would magnify, not mitigate, the noise. On page 4-130 of your Draft EIS, there is this pithy sentence: "The effectiveness of the shielding currently provided by the existing berms and barrier walls along the DAAR and Dulles Connector Road would be diminished in those areas where elevated Metrorail tracks are proposed." Our barrier has already been "diminished" by the ten auto accidents that have plowed into it, awaiting non-existent maintenance by VDOT. (0137, 0224-M –5)

**Public Comment:** Chathams Ford Drive is currently not protected by a sound barrier from the already excessive noise along this very short stretch of the Toll Road. This neighborhood is the only "residential" neighborhood along the Toll Road which has no sound barrier. Moreover, the noise levels are even more severe because road noise "bounces off" the sound barrier on the west-bound Toll Road. (0174, 0300-L –3)

**Public Comment:** We recommend that an effective sound barrier be built to correct an already intolerable noise situation. There is no justification for making Chathams Ford Drive and Chathams Ford Place the only residential community along the Toll Road to be unprotected from the thunderous noise of the car, bus, and 18-wheeler truck traffic. This issue should have been addressed by the Commonwealth of Virginia and Airport Authority at the time when homes were constructed in the Chathams Ford area. (0174, 0300-L –11)

**Response:** *The Project Team utilized the guidelines established by the (Transit Noise and Vibration Impact Assessment, 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. The FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects. However, in areas, such as yours, with higher background levels, Project noise limits established by the FTA are more stringent than in quieter areas allowing the ambient levels to remain the same in the future or increase only slightly before an impact is identified.*

*There is a potential for wheel squeal noise based on the 800-foot radius of curvature proposed near the Hallcrest Heights. However, to better define the onset of wheel squeal, actual source measurements were conducted along an existing Metrorail line near the Ronald Regan Washington National Airport with a radius of 755 feet. Based on the results of the modeling analysis, ambient day-night noise levels from the Metrorail operations are predicted to range from 50 to 54 dBA at the Hallcrest Heights residences. The modeling analysis includes three to four-foot parapets (or barriers along the edge of the track bed) proposed along all sections of aerial guideway (except on Airport property). These levels are well below the measured ambient background noise level of 59 dBA recorded at a residence at 7405 Hallcrest Drive. As a result, no exceedances of the FTA criteria are predicted from Metrorail operations near Hallcrest Heights.*

*Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). The locations of the proposed mitigation measures are described in Section 4.7 of the Final EIS. Figures 4.7-5a and 4.7-5b are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street.*

*Roadside sound barriers are typically evaluated during the design of major highway improvement projects such as widening or new alignment when noise impacts are forecast for adjacent noise-sensitive receptors. Evaluation criteria including effectiveness and cost are typically employed to make decisions on sound barrier location, height, and type. Generally speaking, roadside sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.*

**Public Comment:** Hallcrest Heights Association retained the services of a highly experienced and qualified acoustical engineer. His report is attached to this statement, which I hope will be part of your record of decision. My own comments on this subject were submitted earlier at the Scoping session in July 2000 and the Update session in January of 2001. Your March 2001 Alternatives Analysis referenced our concerns, but did not specifically respond to them...nor does your Draft EIS. (0137, 0176-L -4)

**Response:** *The Project Team received these reports and considered them during the preparation of the Public Scoping Report and preparation of the Draft EIS. In addition, the Project Team has met several times with members of the Hallcrest Heights Association. The comments from your acoustical engineer have been considered as part of the Project planning process.*

#### **Request for Sound Walls at Station and Repair Yards**

**Public Comment:** Additional recommendations: ask for the application of sound walls where appropriate at the station and repair yards where the VDOT traffic noise model (TNM) indicates problems such as Westwood Village where there are potential small increases over the existing background levels. (0287, 0287-T -5)

**Response:** *Where exceedances of the FTA criteria are predicted, mitigation measures are proposed. Because no roadway changes are predicted as part of the Dulles Corridor Project near Westwood Village, a FHWA noise analysis using the Traffic Noise Model (TNM) was not required at this location.*

#### **Need Improved Concrete Noise Walls for Hallcrest Heights**

**Public Comment:** We are presently bordered by a low-tech, six to eight-foot rotting wooden fence which does not even extend down the offramp that wraps around our community. Our engineer tells us that your proposed parapet would set up a parallel barrier effect which would magnify, not mitigate, the noise. On page 4-130 of the draft EIS, there is this sentence: "The effectiveness of the shielding currently provided by the existing berms and barrier walls along the access road in Dulles connector would be diminished in those areas where elevated metrorail tracks are proposed." Almost every other similar community along the Dulles Corridor between the Beltway and Dulles airport has gotten a 25 to 35-foot high cast concrete noise wall with the latest absorptive coating and extending all the way down the nearby off ramps." This is what we insist on being added to our location. (0137, 0137-T -4)

**Public Comment:** We [Hallcrest Heights] are presently bordered by a low tech, 6-8 foot rotting wooden barrier (see attached pictures) which does not even extend down the off-ramp that wraps around our community. Our engineer tells us that the proposed parapet would set up a "parallel barrier" effect which would magnify, not mitigate, the noise. On page 4-130 of your Draft EIS, there is this pithy sentence: "The effectiveness of the shielding currently provided by the existing berms and barrier walls along the DAAR and Dulles Connector Road would be diminished in those areas where elevated Metrorail tracks are

proposed." Our barrier has already been "diminished" by the ten auto accidents that have plowed into it, awaiting non-existent maintenance by VDOT. Almost every other similar community along the Dulles Corridor between the Beltway and Dulles Airport has gotten a 25-35 foot high cast concrete noise wall, with the latest absorptive coating...and extending all the way down nearby off-ramps. This is exactly what Maryland has now added along their portion of the Beltway. This is what we insist on being added to our location. From Old Chain Bridge Road along the corridor and all the way down the off-ramp to the merge with Route 123. (0137, 0176-L-6)

**Public Comment:** In addition, please consider providing cast concrete sound walls for adequate noise abatement in neighborhoods such as Hallcrest Heights, which will be directly affected by the construction and train noise. (0394, 0394-L-3)

**Response:** *The Project Team utilized the guidelines established by the FTA (Transit Noise and Vibration Impact Assessment, 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. As described in Section 4.7.2 of the Final EIS, the FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects against the background of existing noise levels. Where background noise is already high, as in your area, it takes only a relatively small increase to trigger an impact.*

*There is a potential for wheel squeal noise based on the 800-foot radius of curvature proposed near the Hallcrest Heights. However, to better define the onset of wheel squeal, actual source measurements were conducted along an existing Metrorail line near the Ronald Regan Washington National Airport with a radius of 755 feet. Based on the results of the modeling analysis, ambient day-night noise levels from the Metrorail operations are predicted to range from 50 to 54 dBA at the Hallcrest Heights residences. The modeling analysis includes three to four-foot parapets (or barriers along the edge of the track bed) proposed along all sections of aerial guideway (except on Airport property). These levels are well below the measured ambient background noise level of 59 dBA recorded at a residence at 7405 Hallcrest Drive. As a result, no exceedances of the FTA criteria are predicted from Metrorail operations near Hallcrest Heights.*

*Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). The locations of the proposed mitigation measures are described in Section 4.7 of the Final EIS. Figures 4.7-5a and 4.7-5b are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street.*

*The commenter quotes from the Noise and Vibration Technical Report (June 2002) that the effectiveness of existing barriers would be diminished in areas where elevated Metrorail tracks are proposed. The statement in the Technical Report is intended to indicate that the source of transit noise in the area would be above the existing sound barriers and berms. Trackside parapet barriers are proposed along all sections of aerial Metrorail alignment to mitigate the effects of transit noise on adjacent receptors. Further analysis of the effectiveness of the proposed mitigation will occur during preliminary engineering.*

### **Current Noise Levels in Chathams Ford Drive**

**Public Comment:** According to the FTA (Federal Transit Authority) findings, measurements were taken at one location only along Chathams Ford Drive. The result of these existing noise levels was 63 db at a distance of 481 feet from the center of the Dulles Toll Road. Using the table 4-7.2 -FTA Noise Impact Criteria for Transit Projects, Chathams Ford Drive is already in the Yellow Impact Zone even before the project has started. However, we believe that the situation is already in the Red Severe Impact Zone. (0174, 0300-L-5)

**Public Comment:** In preparation for this hearing, residents purchased a sound level meter and conducted tests on Chathams Ford Drive at various locations--not just one-- and at various times of the day to measure noise levels. We then compared this information to the findings of the Dulles Task Force, which are included in the Draft Environmental Impact Statement. These comparative results are presented in a table that will be submitted for the written record, but I will summarize them verbally for purposes of this hearing: The average reading was between 70 and 71db for the 4 homes where measurements were taken. This far exceeds the 63db measured at one home by the Task Force. The maximum levels that could be measured by our instrument were 80 db, and we recorded sound at that level at all 4 homes.

These sound levels put Chathams Ford Drive in the severe impact zone even before construction begins or the bus or metro system begins to operate. (0174, 0300-L -7)

**Public Comment:** According to FTA findings, noise measurements were taken at one residence along Chathams Ford Drive, and the result of these measurements was an average of 60 decibels noise level at a distance of about 481 feet from the center of the Dulles access road. We believe that the situation is already worse than that, and in preparation for the hearing residents purchased a sound level meter and conducted a series of tests, and the full results will be presented in writing before the 28th, but we did it at four different locations at different times during the day. We then compared this information to the findings of the task force which were included in the draft EIS. These comparative results indicate that the average reading, the findings of the EIS were 63 decibels. Our readings were 70 to 71 decibels for the four homes where measurements were taken. This far exceeds the 63 decibels taken. The maximum levels that could be measured by our instrument were 80 decibels, and we did reach that on a number of occasions. (0174, 0174-T -4)

**Public Comment:** These sound levels put Chathams Ford Drive in the severe impact zone, even before construction activities begin. Thus we recommend an effective sound barrier be built to correct an already intolerable noise situation. There is no justification for making Chathams Ford Drive or Chathams Ford Place the only residential community without a sound barrier. The Commonwealth and the Airport Authority should have addressed this issue when the homes were constructed several years ago. We intend to pursue this issue through the task force and through other means, if necessary. If we have to resort to the use of legal action, it will inevitably delay the Dulles transit project. We are firm in our resolve to have adequate sound protection to ensure the quality of life along the street. (0174, 0174-T -5)

***Response:** The Project Team utilized the guidelines established by the FTA (Transit Noise and Vibration Impact Assessment, 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. As described in Section 4.7 of the Final EIS, the FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects. However, in areas, such as yours, with higher background levels, Project noise limits established by the FTA are more stringent than in quieter areas allowing the ambient levels to remain the same in the future or increase only slightly before an impact is identified.*

*Although maximum passby noise levels (or Lmax) from individual vehicles may approach 80 dBA (e.g., such as from heavy-duty trucks), cumulative day-night noise levels (or Ldn) averaged over a 24-hour period are represented by the measured background level of 63 dBA as reported in the Final EIS. This ambient background level is fairly typical of residential land-uses along highway corridors without intervening noise barriers.*

#### **Comments on the June 2002 Dulles Corridor Rapid Transit Project Noise and Vibration Technical Report**

**Public Comment:** I have reviewed the June 2002 Dulles Corridor Rapid Transit Project - Noise and Vibration Technical Report prepared by the Virginia Department of Transportation (VDOT) and the

Washington Metropolitan Area Transit Authority (WMATA). I have two significant concerns regarding the Metrorail alternatives: The introduction of wheel squeal in the vicinity of your development - most significantly - and the performance degradation of the existing highway noise barriers at your development. My specific comments follow:

- § Existing Conditions - The quantification of the existing ambient sound levels apparently was limited to one 24-hr interval on 23 January 2001. While the controlling highway noise source at Hallcrest Heights is likely to be very consistent, substantial variations can occur due to weather conditions. No documentation was given for the weather during the noise survey.
- § Predicted Noise Exposures - At Hallcrest Heights, a 5-dBA range in magnitude was reported for sound levels predicted for the Metrorail Alignment Alternatives (T1, T6, T9 and T4). I was unable to identify the differences in those alternatives that could produce such variation at your development.
- § Expected Wheel Squeal - The Technical Report accurately describes track wheel squeal as "the annoying high-pitched, pure tone noise due to steel wheels rubbing against steel rails" and reports 8-dBA higher overall train sound levels for a curve at National Airport with radius similar to that proposed within 700 ft of Hallcrest Heights. The proposed mitigation, parapet noise barriers, will lower squeal sound levels but will not change their highly annoying tonal character; thus, barriers are unlikely to result in acceptable residential noise exposures. I strongly urge mitigation which eliminates squeal, such as sufficient curve radius or track lubrication.
- § Degraded Highway Barrier Performance - The Technical Report reasonably notes: "The effectiveness of the shielding currently provided by the existing berms and barrier walls along the DAAR and Dulles Connector Road would be diminished in those areas where elevated Metrorail tracks are proposed." The consequence of this is that highway noise will be increased as a result of rail alternatives; therefore, the increased highway traffic sound levels should be included in the computation of the impacts from Metrorail alternatives. There did not appear to be any effort in the Technical Report to quantify the barrier degradation or include it in the impact assessment, or to evaluate mitigation. (0137, 0224-M –10)

**Public Comment:** Degraded Highway Barrier Performance--The Technical Report reasonably notes: "The effectiveness of the shielding currently provided by the existing berms and barrier walls along the DAAR and Dulles Connector Road would be diminished in those areas where elevated Metrorail tracks are proposed." The consequence of this is that highway noise will be increased as a result of rail alternatives; therefore, the increased highway traffic sound levels should be included in the computation of the impacts from Metrorail alternatives. There did not appear to be any effort in the Technical Report to quantify the barrier degradation or include it in the impact assessment, or to evaluate mitigation. (0137, 0176-L –13)

**Public Comment:** Expected Wheel Squeal - The Technical Report accurately describes curved-track wheel squeal as "the annoying high-pitched, pure tone noise due to steel wheels rubbing against steel rails" and reports 8-dBA higher overall train sound levels (note that overall sound levels do not assess the highly objectionable tonal character of wheel squeal) for a curve at National Airport with radius similar to that proposed within 700 ft of Hallcrest Heights. The proposed mitigation, parapet noise barriers, will lower squeal sound levels but will not change their highly annoying tonal character; thus, barriers are unlikely to result in acceptable residential noise exposures. I strongly urge mitigation with eliminates squeal, such as sufficient curve radius or track lubrication. (0137, 0176-L –12)

**Public Comment:** Predicted Noise Exposures--At Hallcrest Heights, a 5-dBA range in magnitude was reported for sound levels predicted for the Metrorail Alignment Alternatives (T1, T6, T9 and T4). I was unable to identify the differences in those alternatives that could produce such variation at your development. (0137, 0176-L –11)

**Response:** Existing Conditions – Noise measurements were conducted at 30 representative receptor locations to account for the various land use types found along the 23.1-mile Project corridor. Ambient noise measurements representative of your neighborhood were conducted at a residence at 7103 Norwalk Street approximately 1,500 feet to the south. The noise measurement program conducted along the Project corridor was conducted in accordance with good

engineering practice and the guidelines and standards set forth in the FTA Transit Noise and Vibration Impact Assessment (1995), the ASTM Standard Guide for Measurement of Outdoor A-weighted Sound Levels (1984), and the ANSI Method for the Measurement of Sound Pressure Levels (1981).

As a result, 24-hour continuous noise measurements were conducted at a residence at 7405 Hallcrest Drive beginning Tuesday, January 23, 2001 at 2:43 PM. Based on the field measurement notes, the weather conditions (clear and calm with an ambient temperature of approximately 40°F) were ideal for determining the current background level at this receptor location.

Predicted Noise Exposures – The difference in the predicted day-night noise levels (or Ldn) from Metrorail operations at discrete Receptor R5 (a residence at 7405 Hallcrest Drive, McLean) is due to both alignment and operational changes between alignments. For example, Alignment T9 has a higher operating speed, lower Metrorail track elevation, and lower Metrorail track separation than the other alignments. These factors all combine to result in a higher noise level at receptor R5 under Alignment T9 than for all other alignment options.

Expected Wheel Squeal - There is a potential for wheel squeal noise based on the 800-foot radius of curvature proposed near the Hallcrest Heights. However, to better define the onset of wheel squeal, actual source measurements were conducted along an existing Metrorail line near National Airport with a radius of 755 feet. Based on the results of the modeling analysis, ambient day-night noise levels from the Metrorail operations are predicted to range from 50 to 54 dBA at the Hallcrest Heights residences. The modeling analysis includes three to four-foot parapets (or barriers along the edge of the track bed) proposed along all sections of aerial guideway (except on Airport property). These levels are well below the measured ambient background noise level of 59 dBA recorded at a residence at 7405 Hallcrest Drive. As a result, no exceedances of the FTA criteria are predicted from Metrorail operations near Hallcrest Heights.

The three to four-foot parapets, proposed as part of the overall track design near the Hallcrest Heights community, will certainly lower wheel squeal sound levels. However, by reducing the overall noise level, the parapets will also, as a result, change the “highly annoying tonal character” of wheel squeal. The dominant observed frequency range of wheel squeal occurs above 2,000 Hertz with wavelengths between 3 and 7 inches. As a result, the parapets are not only expected to effectively reduce the overall noise level, but also eliminate the dominant and most annoying component of the wheel squeal noise spectrum by absorbing the smaller wavelength (i.e., higher frequency) levels. The shielding provided by the parapets is predicted to result in “acceptable residential noise exposures” from the proposed transit operations.

Degraded Highway Barrier Performance – The commenter quotes from the Noise and Vibration Technical Report (June 2002) that the effectiveness of existing barriers would be diminished in areas where elevated Metrorail tracks are proposed. The statement in the Technical Report is intended to indicate that the source of transit noise in the area would be above the existing sound barriers and berms. Trackside parapet barriers are proposed along all sections of aerial Metrorail alignment to mitigate the effects of transit noise on adjacent receptors. Further analysis of the effectiveness of the proposed mitigation will occur during preliminary engineering.

### **Need Additional Noise Mitigation for the Hallcrest Heights Community**

**Public Comment:** The EIS' Noise and Vibration Technical Report states: "The effectiveness of the shielding currently provided by the existing berms and barrier walls along the DAAR and Dulles Connector Road would be diminished in those areas where elevated Metrorail tracks are proposed." For McLean communities thus affected, such as Hallcrest heights, the EIS should incorporate mitigation measures used for similar corridor communities between the Beltway and Dulles Airport. The mitigation measures proposed in the EIS are actually counter productive according to engineering comment provided to the project team: "the Metrorail facilities impair the ability of existing barrier walls to serve

their design purpose and create new noise impacts in the form of higher road traffic sound levels in addition to the noise produced by the rail operations themselves." There did not appear to be any effort in the Technical Report to quantify barrier degradation or include it in the impact assessment, or to evaluate mitigation. To counter the several varying kinds of noise (vehicular, rail, vibration and wheel squeal), plus the obvious visual problems, the EIS should employ FHWA and VDOT mitigation guidelines as well as those of the FTA. The EIS should consider depressing the tracks in a cut and cover method (similar to the lead track from the Falls Church maintenance yard) as an alternative to elevated flyovers. This was done on Metro's Blue Line at Addison Road, near Centennial Village. (0392, 0392-L –19)

**Response:** *The text in the Draft EIS referenced in the comment refers to aerial structures without parapets (or track edge barriers). Unmitigated aerial structures would be expected to diminish the shielding effectiveness of the existing property line barriers. However, the Build Alternative designs will include three to four-foot track edge barriers, or parapets, along all sections of aerial track including all proposed curved flyovers and tangent track.*

*The Draft EIS and Final EIS identify proposed mitigation in the form of parapet barriers for impacts at receptors adjacent to aerial guideway sections under the Metrorail Build Alternatives. The potential for noise reflections was not assessed as part of the Draft EIS or Final EIS. Acoustically absorptive treatment along the residential side of the structures is an excellent method for eliminating barrier degradation due to the "parallel barrier" effect. Absorptive treatment of the retaining walls leading to the aerial track structure will be investigated further as part of preliminary engineering.*

*There is a potential for wheel squeal noise (caused by the meeting of rails and wheels on a curve) based on the 800-foot radius of curvature proposed near the Hallcrest Heights. However, to better define the onset of wheel squeal, actual source measurements were conducted along an existing Metrorail line near National Airport with a radius of 755 feet. Based on the results of the modeling analysis, ambient day-night noise levels from the Metrorail operations are predicted to range from 50 to 54 dBA at the Hallcrest Heights residences. The modeling analysis includes three to four-foot parapets (or barriers along the edge of the track bed) proposed along all sections of aerial guideway (except on Airport property). These levels are below the measured ambient background noise level of 59 dBA recorded at a residence at 7405 Hallcrest Drive. As a result, with the three to four-foot parapets, no exceedances of the FTA criteria are predicted from Metrorail operations near Hallcrest Heights.*

*Because no exceedances of the FTA impact criteria are predicted under the Metrorail Alternative using parapets along all sections of aerial guideway (except on Airport property), other mitigation measures (such as depressing the tracks in a cut and cover method) are not currently proposed.*

### **Effectiveness of Proposed Noise Walls**

**Public Comment:** What is the expected barrier effect that will be created from noise walls or fencing? (0147, 0459-L –11)

**Public Comment:** Plans are to install 3- to 5-foot parapets at tracksides, simply because they have been used before...and not necessarily because they have been proven effective. In fact, Mr. Dittmeier described an unsuccessful attempt to make the parapets "work" by spraying them with a sound-absorbing material. (0432, 0432-E –8)

**Response:** *Three to four-foot parapet barriers are planned for all aerial Metrorail track sections in accordance with WMATA design criteria. Five to six-foot parapets are proposed in areas adjacent to noise receptors that were forecast to exceed FTA noise criteria under Metrorail operations. The recommendation for five to six-foot parapets was based on the projected need for additional noise reductions to bring levels below the FTA impact criteria.*

### EIS Map Shows Gaps in Proposed Parapet Installation

**Public Comment:** Mr. Dittmeier expressed surprise that Figure 5 of the map series shows several gaps in the proposed parapet installation along sections of track where the need for sound mitigation would appear to be beyond question. (0432, 0432-E -9)

**Response:** *The commenter references a figure presented at a coordination meeting conducted for concerned citizens. Figures 4.7-5a and 4.7-5b in the Final EIS illustrate locations where five to six-foot parapets are proposed as additional mitigation over and above the three to four-foot parapets planned for all aerial track under the Metrorail Extension.*

*As currently planned, gaps will not exist in parapets along the aerial sections, however, sections will vary between three to four-foot and five to six-foot parapets depending on the locations of adjacent receptors which are forecast to exceed FTA noise criteria.*

### Potential Metrorail Alternative Noise Impacts on the Westhampton Neighborhood

**Public Comment:** We [Westhampton] recently learned that rapid transit in the Dulles Corridor will subject us to increased traffic congestion and additional noise from the following sources: 8-car trains running every three minutes during rush hour in each direction; an increase in the rail yard capacity; an additional spur from the rail yard into the Dulles Connector Road behind our home; increased cut-through traffic resulting from the new parking garage and increased use of the West Falls Church metro station; the sight of an elevated train passing about 300 feet from our windows every six minutes; placement of steel beams (at night), which we understand are good transmitters of sound, to carry trains over I-66. While the projections of the Environmental Impact Statement indicate that passing trains along the Dulles Corridor will produce significant additional noise, we have no information on the combined impact of all of the new noise sources listed above. We also do not know what the overall ambient noise level will be when the new sources of noise are combined with the existing noise level. Furthermore, we are concerned that the projections of the Environmental Impact Statement will soon prove to be far too low as use of the new metro and the Dulles Connector Road increases over time. (0403, 0404- L- 3)

**Public Comment:** We have lived in this [Westhampton] community for 15 years. Some of our neighbors are new residents while others are the original owners of homes that are more than 40 years old. We enjoy the conveniences of living in the inner suburbs. We use metro on a daily basis. However, we feel that placing rapid transit in the median of the Dulles Connector Road will raise the noise level in this neighborhood to an unacceptable level and make our streets unsafe for our children, resulting in a dramatic decline in the quality of life we experience. For all of these reasons, we feel that traffic amelioration and a sound barrier behind our home, along the Dulles Connector Road, gives us the best chance to maintain our quality of life. (0403, 0404- L-4)

**Public Comment:** Having lived in the Westhampton neighborhood on Greenwich Street for more than twelve years, I can tell you first hand that the noise levels and traffic have risen significantly at the interchange where the Dulles Access Road connects with I-66 at the West Falls Church Metro Station - particularly, since the addition of the Dulles Toll Road traffic. The two levels of traffic already create such significant noise for our neighborhood that noise abatement structures are warranted today, even before the Transit Project was to commence. (0414, 0414-L -1)

**Public Comment:** Figure 3 in the map series shows that the Westhampton area next to the right of way and between what appears to be 745+00 and 785+00 will be below track level. There seemed to be no understanding of sound transmission...that is...whether track noise will be greater for residents above or below track level...or whether the tunnel exit from the West Falls Church Storage and Inspection yard might concentrate and "focus" noise at residential areas in line with the exit. (0432, 0432-E -10)

**Public Comment:** Here again [Westhampton], it would seem that concrete walls are the appropriate solution to noise pollution as well as to visual pollution. (0432, 0432-E-13)

**Response:** *The Project Team utilized the guidelines established by the FTA (Transit Noise and Vibration Impact Assessment, 1995)) to determine the applicable noise impact criteria in all areas of the proposed corridor. As described in Section 4.7 of the Final EIS, the FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects against the background of existing noise levels. Where background noise is already high, as in your area, it takes only a relatively small increase to trigger an impact.*

*Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). Figures 4.7-5a and 4.7-5b are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street.*

*Roadside sound barriers are typically evaluated during the design of major highway improvement projects such as widening or new alignment when noise impacts are forecast for adjacent noise-sensitive receptors. Evaluation criteria including effectiveness and cost are typically employed to make decisions on sound barrier location, height, and type. Generally speaking, sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.*

### **Need to Mitigate Switch Noise**

**Public Comment:** The problem of switch noise which occurs when a steel wheel bridges and bumps across the gap between rail ends is inevitable, so is wheel squeal on tight turns like the one into the WFC S&I Yard. Surely something can be done to muffle and mitigate this problem. (0432, 0432-E -12)

**Response:** *Although the proposed Metrorail Extension consists of continuously welded rail (CWR) track, switches are proposed at several locations along the Dulles Corridor. Based on noise measurements conducted at Discrete Receptor R1 (The Pavilion townhouses on Falls Church Drive) along the existing Orange Line near West Falls Church station, Metrorail passbys over single switches or crossovers will be audible; but are not expected to lead to an exceedance of the Project noise criteria.*

*Wheel squeal was included in the noise analysis for tight radius turns such as the one at the West Falls Church S&I Yard site. The Final EIS includes mitigation measures (see Section 4.7) to enclose a portion of the existing loop track and the proposed yard lead in box structures to reduce noise impacts.*

### **Deficiencies in the Proposed Noise Mitigation Strategies**

**Public Comment:** Deficiencies in the proposed noise mitigation strategy. The proposed noise mitigation strategy is using short walls close to the track to sound-proof the train wheels. The plans show gaps in the sound-proofing walls at the section of track along the Westhampton neighborhood. There is no data to demonstrate that the proposed mitigation strategy (i.e., sound-proofing walls) will be effective in maintaining the noise below federal standards if peak cumulative noise levels are considered and for this particular (and unique) situation, i.e., high speed rail in close proximity to homes on sharply curved aerial track on metal supports. (0386, 0386-E -3) (0398, 0398-L-3) (0399, 0399-L-3) (0412, 0412-L-3) (0415, 0415-L-3) (0416, 0416-L-3) (0430, 0430-E-3) (0466, 0466-L-3) (0467, 0467-L-3) (0431, 0431-E-3) (0473, 0473-L-3) (0469, 0469-L-3) (0471, 0471-L-3) (0465, 0465-L-3) (0470, 0470-L-3) (0438, 0438-E-3) (0442, 0442-L-3) (0474, 0474-L-3)

**Public Comment:** Deficiencies in the proposed noise mitigation strategies. The proposed noise mitigation strategy is using short walls close to the track to sound-proof the train wheels. The plans show gaps in the sound-proofing walls at the section of track along the Westhampton neighborhood. There is

also no data to quantify the final derivative noise output after mitigation and no data to demonstrate that the proposed mitigation strategy (i.e., sound-proofing walls) will be effective in maintaining the noise below federal standards. Plans also appear to be insufficient to address the other additional noise sources from switches and the rail yard. (0403, 0403-L -2)

**Response:** *The Metrorail Extension at the junction with the existing Orange Line in West Falls Church is expected to have a gradual curve with a turning radius of 1,000 feet. Based on the FTA guidelines as well as measurements made at other existing Metrorail curves, wheel squeal is not expected to occur at locations with this curvature. Tangential noise that typically occurs along straight sections of track is expected along this segment of the Dulles Corridor.*

*Due to structural vibrations, aerial track may exhibit additional structural noise as a result of train passbys along aerial guideway sections. Although the potential for additional structural noise was included in the noise assessment, it is highly unlikely due to the newer structural designs proposed along the Dulles Corridor. Pre-cast concrete supports, resiliently-supported ties, and continuously welded rail (CWR) track included in the proposed track design all combine to greatly minimize overall noise and vibration levels from train passbys along aerial sections.*

*Additionally, three to four-foot parapets (or track edge barriers) are proposed as part of the design along all aerial sections of the Metrorail Extension. Based on the assumed Metrorail source height of two feet above rail combined with the top-of-rail elevation, the three to four-foot parapet height is predicted to effectively shield train passbys at nearby residences. As a result, aerial tunnels in the sky are not required. For example, based on a profile view of the 2-foot train source height with and intervening three to four-foot parapet wall on an elevated structure above a five-foot receptor, the line-of-sight between the train and the receptor is broken by the parapet. The degree of this path length difference (i.e., between the direct line-of-sight and the path over the parapet) relates to the overall shielding effect of the barrier.*

*Acoustically absorptive treatment along the trackside of the parapets further improves the shielding benefits of the structural parapets. The 2-foot train source height is a combination of the steel wheel on steel rail noise, the aerodynamic noise, as well as other onboard auxiliary equipment such as brake and air conditioning compressors.*

*As described in Section 4.7 of the Final EIS, the noise analysis was conducted according to the FTA Transit Noise and Vibration Impact Assessment (1995) guidelines. Accordingly, the peak-hour equivalent noise level (or Leq) was used to evaluate impacts at non-residential receptors; and the 24-hour day-night noise level (or Ldn) was used to evaluate impacts at residential receptors. Although the FTA criteria are defined in terms of allowable project exposure, the basis for the FTA criteria is actually the increase in the cumulative noise (i.e., when the Project levels are added to the existing noise).*

*In addition to the FTA cumulative noise criteria, peak or maximum noise levels (or Lmax) from transit operations were also used to evaluate Project impacts using the WMATA Design Criteria for various residential land-uses. The Lmax noise level is independent of the existing background and the number of operations and represents the maximum level observed during a single event, such as a Metrorail or bus passby.*

*Finally, Figures 4.7-5a and 4.7-5b in the Final EIS show the proposed locations of five to six-foot parapets (or track edge barriers) along both aerial and at-grade sections of track that were proposed to eliminate noise impacts predicted under the Metrorail Alternative. All other sections of aerial track, including the flyover near I-66 and in Tysons Corner, for example, include three to four-foot parapets as part of the proposed track design. If no exceedances of the FTA or the WMATA impact criteria are predicted along other at-grade sections of track under the Metrorail Extension (such as along the Westhampton neighborhood), no additional mitigation measures are proposed.*

## Quantify Noise Output After Mitigation Measures

**Public Comment:** Additional study of the noise impact at peak cumulative noise levels on the surrounding communities, including: 1) precisely quantifying the expected peak noise output after mitigation features, including a consideration of cumulative affects from the enlarged rail yard, its tunnel and curved feeder tracks, the highway, and the metal train track support; and 2) examining and documenting the effectiveness of the proposed mitigation strategy (i.e., sound-proofing walls) for mitigating peak cumulative noise levels. (0386, 0386-E -6) (0471, 0471-L-5) (0399, 0399 L-6) (0412, 0412-L-6) (0415, 0415-L-6) (0416, 0416-L-6) (0430, 0430-E-6) (0431, 0431-E-6) (0466, 0466-L-5) (0473, 0473-L-6) (0474, 0474-L-6) (0465, 0465-L-6) (0469, 0469-L-5) (0438, 0438-E-5) (0398, 0398-L-6) (0470, 0470-L-6) (0467, 0467-L-5) (0442, 0442-L-5)

**Public Comment:** Additional study of the noise impact on the neighborhood [Westhampton] to: 1) precisely quantify the expected noise output after mitigation features, including a consideration of how the rail yard tunnel might exacerbate noise levels; 2) support the contention that the proposed mitigation strategy (i.e., sound-proofing walls) will be effective; and 3) consider the probable total noise level by combining the current level with all new sources of Metro-related noise. (0403, 0403-L -5)

**Response:** *With respect to the concerns of communities on the noise of the Metrorail West Falls Church Yard, the Project Team recommended and the decision-makers approved the enclosure of 1) a portion of the existing loop track at the yard's eastern end and 2) the new yard lead in box structures. These noise mitigation measures by the Project will reduce the wheel squeal noise of the train movements within the Yard. The Project Team notes, however, that new residences have been recently constructed and occupied adjacent to the West Falls Church S&I Yard without any noise mitigation provided by the residential developer. As during the past ten-year effort to address yard noise, there will be coordination among DRPT, WMATA, Fairfax County officials and staff, and representatives of the communities during preliminary engineering and final design.*

*The number of additional cars at West Falls Church Yard has increased from 26 in the Draft EIS to 42 in the Supplemental Draft EIS and Final EIS in order to support the Metrorail fleet of the Wiehle Avenue Extension.*

*Wheel squeal from the new yard lead (for Metrorail trains to and from the Dulles Corridor Line) at the east end of the yard was included in the modeling analysis. Based on measured noise levels from the current wheel squeal along a similar radius curve at the yard, exceedances of the FTA impact criteria are predicted at nearby residences. No exceedances are predicted from the Project's aerial guideway in the median of the Dulles Connector Road.*

*Other noise sources, such as train horns, were not included in the modeling analysis. Brake squeal was not determined to be a major problem. Based on the current operating schedule at the yard, the increase in the overall yard noise due to the cleaning and general operation of 42 additional Metrorail cars needed for the Project is expected to be minimal.*

*No noise impacts are predicted at nearby residences from the new rail yard tunnel portal in the median of the Dulles Airport Connector Road. This is due to several reasons including the location of the curve deep inside the tunnel, the use of acoustical treatments along the tunnel walls, and the directionality of the tunnel portal and the nearby residences.*

*As described in Section 4.7 of the Final EIS, the noise analysis was conducted according to the FTA Transit Noise and Vibration Impact Assessment (1995) guidelines. Accordingly, the peak-hour equivalent noise level (or Leq) was used to evaluate impacts at non-residential receptors; and the 24-hour day-night noise level (or Ldn) was used to evaluate impacts at residential receptors. Although the FTA criteria are defined in terms of allowable project exposure, the basis for the FTA criteria is actually the increase in the cumulative noise (i.e., when the project levels are added to the existing noise).*

*In addition to the FTA cumulative noise criteria, peak or maximum noise levels (or Lmax) from transit operations were also used to evaluate Project impacts using the WMATA Design Criteria for various residential land-uses. The Lmax noise level is independent of the existing background and the number of operations and represents the maximum level observed during a single event, such as a Metrorail or bus passby.*

*Furthermore, although newer pre-cast concrete track structures are proposed to minimize excessive noise and vibration levels, the modeling analysis included a 4-decibel penalty to account for potential structural noise due to Metrorail passbys along all elevated sections of slab track. As described in Section 4.7 of the Final EIS, where exceedances of the FTA or the WMATA impact criteria are predicted, mitigation measures are proposed. All proposed mitigation measures are predicted to eliminate exceedances of the FTA (cumulative) and the WMATA (peak) impact criteria. Quantification of the anticipated noise reductions associated with proposed noise mitigation will occur during preliminary engineering or the final design.*

### **Comparison of Noise Levels of an Aerial Bridge Versus a Tunnel**

**Public Comment:** Has any noise analysis been done to compare the sound impact on my house and my neighbors of an aerial bridge versus a tunnel? I am not an engineer, but it strikes me that elevating a train to a level equal to the height of the sound barriers gives the sound a more direct angle to our houses. Will better and higher barrier walls need to be built to protect our houses and their values? (0117, 0117-E -7)

**Response:** *Noise measurements and analyses were originally conducted at 30 discrete noise-sensitive receptor locations along the corridor during the peak travel, mid-day, off-peak, and late night hours. After the selection of the LPA, the total number of receptors measured in the Final EIS was 21. See Section 4.7 of the Final EIS for specific monitoring locations.*

*Under the Metrorail Extension, which is the selected Locally Preferred Alternative, three to four-foot parapets (or track edge barriers) are proposed along all aerial sections of the alignments. Based on the assumed Metrorail source height of two feet above rail combined with the top-of-rail elevation, the three to four-foot parapet height is predicted to effectively shield train passbys at nearby residences. Additionally, acoustically absorptive treatment along the trackside of the parapets could further improve the shielding benefits of the structural parapets.*

### **Noise Impacts on Homes Located Near Dulles Airport Access Road and West Falls Church Metrorail Station**

**Public Comment:** I sent this email to you on 7-15-02: I live at 2050 Greenwich Street. My house backs up to the Dulles Access Road several blocks after the Dulles Access Road branches off of I-66. How much noise will the train add to my backyard? Although there is a 20 (approx.) foot barrier fence, we already get some sound from cars on the access road. Will having the train as my neighbor increase the noise and by how much? (0117, 0117-E -5)

**Public Comment:** I was shocked to learn at the hearing last night at Springhill Elementary School that you are planning to take the train into the air near the West Falls Church Metro. I had always assumed that you would make the turn underground. What additional sounds will be generated for the homes and high occupancy condos on both sides of 66 and the Dulles Access Road around the WFC metro? (0117, 0117-E -1)

**Response:** *Due to structural vibrations, aerial track may exhibit additional structural noise as a result of train passbys along aerial guideway sections. Although the potential for additional structural noise was included in the noise assessment, it is highly unlikely due to the newer structural designs proposed along the Dulles Corridor. Pre-cast concrete supports, resiliently-supported ties, and continuously welded rail (CWR) track included in the proposed track design all combine to greatly minimize overall noise and vibration levels from train passbys along aerial*

sections. Additionally, three to four-foot parapets are proposed as part of the design along all sections of aerial guideway (except on Airport property) to further reduce train noise at nearby receptors.

The Metrorail Extension at the junction with the existing Orange Line in West Falls Church is expected to have a gradual curve with a turning radius of 1,000 feet. Based on the FTA guidelines as well as measurements made at other existing Metrorail curves, wheel squeal is not expected to occur at locations with this curvature. Tangential noise that typically occurs along straight sections of track is expected along this segment of the Dulles Corridor.

Estimated Ldn noise levels from Metrorail operations along Greenwich Street are predicted to range from 55 to 59 dBA. These levels are well below the measured background of 62 to 65 dBA. Based on current traffic levels, the ambient noise level in 2025 with Metrorail service would increase approximately 1 decibel to range from 63 to 66 dBA. As a result, no exceedances of the FTA noise criteria are predicted from Metrorail passbys at receptors along the Greenwich Street neighborhood.

### Metrorail Extension will Create Noise in Neighborhoods

**Public Comment:** I am not an environmental sound specialist, but I ride the train a lot and it seems to me this means you are planning to put a lot of noise in my neighborhood. Putting loud rapidly moving and turning trains in direct earshot of lots of people's residences seems very inconsiderate. How about our property values? Specifically, how much new noise will be created and how frequently? (0117, 0117-E – 3)

**Response:** The Metrorail Extension at the junction with the existing Orange Line in West Falls Church is expected to have a gradual curve with a turning radius of 1,000 feet. Based on the FTA guidelines as well as measurements made at other existing Metrorail curves, wheel squeal is not expected to occur at locations with this curvature. Tangential noise that typically occurs along straight sections of track is expected along this segment of the Dulles Corridor.

Estimated Ldn noise levels from Metrorail operations along Greenwich Street are predicted to range from 55 to 59 dBA. These levels are well below the measured background of 62 to 65 dBA. Based on current traffic levels, the ambient noise level in 2025 with Metrorail service would increase approximately 1 decibel to range from 63 to 66 dBA. As a result, no exceedances of the FTA noise criteria are predicted from Metrorail passbys at receptors along the Greenwich Street neighborhood.

Studies on the impacts of transit systems have found that the availability of transit typically increases the value of property in the vicinity.

### Impacts of Night-Time Construction Noise

**Public Comment:** Another frightening aspect of your study is the statement that heavy rail construction at the Orange Line Dulles connection would take place at night. The only impact I could find was the suggestion that fewer travelers would be inconvenienced. What about those of us who must sleep at night in surrounding neighborhoods? Will you address the health impacts of long-term of Ambien? (0145, 0145-T –9)

**Public Comment:** The first point is that the construction activities along the Toll Road will aggravate a serious noise situation especially because the buses and metrorail are major contributors to noise and will operate until midnight during the week and 2 a.m. on the weekends. (0174, 0174-T –3)

**Response:** During construction, DRPT would comply with noise limits established by FTA and WMATA guidelines, federal law (for Wolf Trap Farm Park), and time-of-day restrictions specified

*in local noise ordinances. If necessary, temporary mitigation measures will be employed during construction.*

*A study of the health impacts of long-term use of Ambien (a prescription drug that is used as a sleeping aid) is beyond the scope of the EIS.*

### **Metrorail Extension Noise Impacts on Rotonda Community**

**Public Comment:** Added to the cost would be the loss in quality of life to the Rotonda residents. Though my condo is located so I'd experience little additional noise, numbers of residents would experience so much they would find it intolerable. (0051, 0051-CC-2)

**Public Comment:** As residents of the Rotonda we object to the above ground Metrorail (T-4 loop) which would border our properties as the appearance, noise and vibrations would be offensive. (0037, 0309-L -1) (0310, 0310-L -1) (0311, 0311-L -1) (0312, 0312-L -1) (0313, 0313-L -1) (0314, 0314-L -1) (0315, 0315-L -1) (0316, 0316-L -1) (0317, 0317-L -1) (0318, 0318-L -1) (0319, 0319-L -1) (0320, 0320-L -1) (0321, 0321-L -1) (0322, 0322-L -1) (0323, 0323-L -1) (0324, 0324-L -1) (0325, 0325-L -1) (0326, 0326-L -1) (0327, 0327-L -1) (0328, 0328-L -1) (0329, 0329-L -1) (0330, 0330-L -1) (0331, 0331-L -1) (0332, 0332-L -1) (0333, 0333-L -1) (0334, 0334-L -1) (0335, 0335-L -1) (0336, 0336-L -1) (0337, 0337-L -1) (0338, 0338-L -1) (0339, 0339-L -1) (0340, 0340-L -1) (0341, 0341-L -1) (0342, 0342-L -1) (0343, 0343-L -1) (0344, 0344-L -1) (0345, 0345-L -1) (0346, 0346-L -1) (0347, 0347-L -1) (0348, 0348-L -1) (0349, 0349-L -1) (0350, 0350-L -1) (0351, 0351-L -1) (0352, 0352-L -1) (0353, 0353-L -1) (0354, 0354-L -1) (0355, 0355-L -1) (0356, 0356-L -1) (0357, 0357-L -1) (0358, 0358-L -1) (0359, 0359-L -1) (0360, 0360-L -1) (0059, 0361-L -1) (0362, 0362-L -1) (0363, 0363-L -1) (0364, 0364-L -1) (0365, 0365-L -1) (0366, 0366-L -1) (0367, 0367-L -1) (0368, 0368-L -1) (0369, 0369-L -1) (0370, 0370-L -1) (0371, 0371-L -1) (0372, 0372-L -1) (0373, 0373-L -1) (0374, 0374-L -1) (0375, 0375-L -1) (0376, 0376-L -1) (0377, 0377-L -1) (0378, 0378-L -1) (0379, 0379-L -1) (0380, 0380-L -1) (0302, 0302-L -1) (0305, 0305-L -1)

**Response:** *These comments concerned the potential effects of Alignment T4, which was eliminated from further consideration after the public and agency review and comment on the Draft EIS. No noise impact is projected in the vicinity of the Rotonda.*

### **Additional Noise is Hazardous to Children**

**Public Comment:** Finally, the excessive noise is a health and safety hazard for children who because of the noise cannot hear oncoming cars. This hazard affects both children and adults whether they walk on the shoulders of the street or on the street itself. (0174, 0300-L -10)

**Response:** *The FTA criteria allow the ambient noise levels to increase 1 to 3 decibels (depending on the current background level). The ambient noise level currently experienced by this neighborhood is from traffic on I-66 and the Dulles Connector Road. This existing ambient noise level is not anticipated to be significantly increased by the Project. Under the Metrorail Extension, which is the LPA, Project noise levels are predicted to increase the ambient level by less than 2 decibels. As described in Section 4.7 of the Final EIS, where exceedances of the FTA criteria are predicted, mitigation measures are propose.*

### **Buses are a Major Contributor to Noise**

**Public Comment:** Thus, the deployment of the bus, metro or combination system would only increase an already serious noise problem. And because buses are a major contributor to noise, the level of increase will not be tolerable. (0174, 0300-L -6)

**Response:** *Based on the FTA impact criteria, Project noise levels are allowed to increase the ambient background levels only slightly (i.e., 1-3 decibels) or not at all based on the decibel level*

*measured as the existing ambient condition. Where exceedances of the FTA criteria are predicted, mitigation measures are proposed. (See Section 4.7.7 of the Final EIS)*

### **Support Metrorail Extension but Concerned Over Noise Impacts**

**Public Comment:** I support rail along the Dulles Corridor. However, the draft environmental impact statement has left me with concern as to the implementation. As with other individuals, I am worried about the impact on residential neighborhoods of heavy rail-generated noise, particularly from the elevated track. (0178, 0178-T-1)

**Response:** *Rail generated noise was assessed according to FTA guidelines and the results of the analysis are presented in Section 4.7 of the Final EIS. In areas where the Metrorail Extension would have aerial guideway, three to four-foot parapet barriers are planned on the structure. These barriers would result in a reduction of noise from the wheel/rail interaction. Where the noise analysis identified the potential for exceedance of the FTA noise criteria at adjacent receptors, mitigation was considered to minimize impacts. Five to six-foot parapet barriers have been proposed in some locations in order to reduce impacts below FTA criteria. The locations where five to six-foot parapets are proposed are illustrated on Figures 4.7-5a and 4.7-5b of the Final EIS.*

### **Aerial Structures Should Be Required To Be Concrete**

**Public Comment:** Aerial Structures -- WMATA should be required to make a commitment during its approval process (included in the resolution the Board of Directors adopts to approve the Dulles Line) to require that the aerial structures be concrete. Concrete structures are the basis of the noise analysis. The option, a composite steel and concrete structure with a concrete deck atop a steel box beam as used in the vicinity of the Eisenhower Avenue and Huntington Stations and outbound of the Stadium-Armory Station. These composite structures are inherently much noisier and thus, unacceptable. The commitment in the resolution is necessary to preclude WMATA from shifting from the concrete to the composite structure during the design phase despite promises to the community as occurred on the Blue Line Extension in Prince George's County where a composite structure was substituted for the promised concrete structure for the structure crossing the Beltway. (0387, 0387-L-12)

**Response:** *Although newer pre-cast concrete track structures are proposed to minimize excessive noise and vibration levels, the modeling analysis included a 4-decibel penalty to account for potential structural noise due to Metrorail passbys along all elevated sections of slab track. This noise assessment is based on the FTA guidelines and is independent of the type of aerial structure proposed as part of the Dulles Corridor Rapid Transit Project.*

### **Need Cast Concrete Sound Barrier Walls for Hallcrest Heights**

**Public Comment:** The project needs to include additional measures to provide adequate noise mitigation to the affected neighborhoods, particularly those of Hallcrest Heights, at the time of construction. The measures proposed in the DRAFT EIS are insufficient. Cast concrete walls with sound absorptive coating would be more likely to provide adequate mitigation. (0418, 0418-L-3)

**Response:** *Exceedances of the WMATA noise criteria for construction activities were identified in Section 4.7 of the Final EIS. During construction, DRPT would comply with noise limits established by FTA and WMATA guidelines, federal law (for Wolf Trap Farm Park), and time-of-day restrictions specified in local noise ordinances. If necessary, temporary mitigation measures will be employed during construction.*

*Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). The locations of the proposed mitigation measures are described in Section 4.7 of the Final EIS.*

Figures 4.7-5a and 4.7-5b are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street.

Roadside sound barriers are typically evaluated during the design of major highway improvement projects such as widening or new alignment when noise impacts are forecast for adjacent noise-sensitive receptors. Evaluation criteria including effectiveness and cost are typically employed to make decisions on sound barrier location, height, and type. Generally speaking, sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.

### **Increased Train Traffic Will Increase Noise Impacts on West Falls Village Community**

**Public Comment:** Clearly the construction and operation of a new rail line to Dulles Airport will result in increased use of the tracks that run by our community [West Falls Village]. The level of train traffic could be substantial, resulting in as much as a doubling of the train traffic on the current Orange Line tracks. In fact, if a line is built which includes train service to Tysons Corner, we can easily foresee a future in which the increased demands for service to Tysons results in more than a doubling of train traffic. Any increase in train traffic represents a major noise increase and is of great concern to our community. Currently, even in periods of peak car traffic noise, a train moving by our neighborhood results in a significant, noticeable and unpleasant increase in noise levels. The threat of a significant increase in train traffic would be a major impact on our community negatively affecting our health and well being. In addition, we also are threatened by the noise resulting from the substantial construction needed for this project. (0435, 0435-E -2)

**Response:** *The impacts associated with the Dulles Corridor Rapid Transit Project are identified in Section 4.7 of the Final EIS and include the number of proposed future transit operations. Based on the noise modeling assessment using the FTA Transit Noise and Vibration Impact Assessment (1995) guidelines, no exceedances of the FTA impact criteria are predicted at the West Falls Village community. Therefore, although no mitigation is proposed specifically for the West Falls Village community, this area should benefit from mitigation measures to eliminate impacts predicted along Haycock Road and Westwood Place.*

### **Additional Mitigation of Construction-Related Noise Impacts on Hallcrest Heights**

**Public Comment:** Additional measures to provide adequate noise abatement in neighborhoods that will be affected by construction, such as Hallcrest Heights, must be included in the project. (0393, 0393-L -4)

**Response:** *Exceedances of the WMATA criteria for construction activities are identified in Section 4.7 of the Final EIS. During construction, DRPT would comply with noise limits established by FTA and WMATA guidelines, federal law (for Wolf Trap Farm Park), and time-of-day restrictions specified in local noise ordinances. If necessary, temporary mitigation measures would be employed.*

### **Metrorail Extension May Reduce Bus and Vehicle Noise**

**Public Comment:** I live adjacent to the Dulles Access Rd. as it approaches "66" - and I am intimately acquainted with the problems of noise especially. Maybe rapid transit will cut down bus and vehicle noise - a thought - but it can't be worse than it already is. (0467, 0467-L -10)

**Response:** *Thank you for your comment.*

### **Monetary Compensation for Noise Impacts**

**Public Comment:** What about monetary compensation for reduced quality of life? With the noise level, we will only be able to sleep between 2:00 AM - 5 AM. Property values will be drastically reduced! (0058, 0058-CC-1)

**Response:** *Noise impacts are assessed in Section 4.7 of the Final EIS. Mitigation measures are proposed to minimize impacts. In general, property values along transit corridors, and especially near transit stations, increase over time due to the benefits of improved mobility.*

### **Aggressively Address Noise Impacts on Homes Near Greenwich Street**

**Public Comment:** Additional noise generated from construction and metro operations needs to be aggressively addressed. Partial track enclosure or 5 foot track parapet should be considered [near Greenwich Street]. In addition, there should be limits on construction noise during the overnight hours while the project is underway. (0389, 0389-E –4)

**Response:** *Three to four-foot parapets (or track edge barriers) are proposed along all aerial Metrorail sections (except on Airport property). The types and location of the proposed mitigation measures are described in Section 4.7 of the Final EIS. Figures 4.7-5a and 4.7-5b are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street.*

*During construction, DRPT would comply with noise limits established by FTA and WMATA guidelines, federal law (for Wolf Trap Farm Park), and time-of-day restrictions specified in local noise ordinances. If necessary, temporary mitigation measures will be employed during construction.*

### **Need to Reduce Construction Noise Through Sequencing**

**Public Comment:** Although specifics are not given in the EIS, it is not hard to judge from precedents in other elevated sections of the Metro system, that construction noise will be considerable. Since our community [Hallcrest Heights] lies some 10-12 feet below the level of the roadway in the corridor, the construction of the elevated and curving section of the proposed rail service into Tysons, will involve substantial and sustained construction noise over an extended period of time. Given the FTA's policy of coordinated transportation planning (which I assume would include dealing with such public agencies as MWAA and VDOT), the EIS should sequence significant transportation noise mitigation measures in the corridor (and particularly our adjoining section) ahead of construction activities. Since VDOT has chosen not only to not maintain the existing ineffective barrier, (which is too low and too short anyway), and since MWAA has said they will not retrofit any communities for such abatement, the EIS should address the problem in a comprehensive way if the project's objective to protect adjoining communities has any meaning at all. If the EIS were to include such analysis, then a noise barrier of modern design equivalent to that erected for Wolf Trap and other communities in the corridor should be placed at our section of the corridor. Such a barrier must extend all the way down the off-ramp to the merge with Route 123 if it is to have any effect at all. (0137, 0304-L –3)

**Response:** *Exceedances of the WMATA noise criteria for construction activities are identified in Section 4.7 of the Final EIS. During construction, DRPT would comply with noise limits established by FTA and WMATA guidelines, federal law (for Wolf Trap Farm Park), and time of day restrictions specified in local noise ordinances. If necessary, temporary mitigation measures will be employed.*

*Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). The types and location of the proposed mitigation measures are described in Section 4.7 of the Final EIS. Figures 4.7-5a and 4.7-5b are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street.*

*Roadside sound barriers are typically evaluated during the design of major highway improvement projects such as widening or new alignment when noise impacts are forecast for adjacent noise-sensitive receptors. Evaluation criteria including effectiveness and cost are typically employed to*

*make decisions on sound barrier location, height, and type. Generally speaking, sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.*

### **Concern Over Nighttime Construction Activities**

**Public Comment:** Another frightening aspect of your study is the statement that heavy rail construction at the Orange Line/Dulles connection would take place at night! The only impact I could find was the suggestion that fewer travelers would be inconvenienced. What about those of us who must sleep at night in the surrounding neighborhoods? (0145, 0452-E –6)

**Response:** *The short-term construction effects and noise generated by that construction were included in the noise analysis and any adverse effects on neighborhoods were identified. Certain construction work must be completed during Metrorail non-revenue hours.*

### **Concrete Aerial Structures Are Better Than Composite Steel Beam**

**Public Comment:** Design of aerial structures is critical. Aesthetics and acoustical impacts should not be objectionable to pedestrians or nearby residents. Concrete structures are quieter and more flexible than composite steel beam structures with the concrete deck, as has been used near the Grosvenor-Stadium Armory and Huntington stations. Designers should strive to provide the quietest environment possible. (0387 4-01)

**Response:** *The materials used to construct the aerial structures will be finalized during preliminary engineering.*

### **Noise Impacts on Westhampton Neighborhood**

**Public Comment:** Believes that the Westhampton neighborhood is subject to disproportionate share of impacts of noise, traffic, air, and visual pollution. States that nowhere else on the Metrorail system are a park-and-ride facility, freeway (Dulles Connector Road), rail yard, and an aerial track simultaneously located near residences. (0117, 4-02)

**Public Comment:** Believes that the Westhampton neighborhood is subject to disproportionate share of impacts of noise, traffic, air, and visual pollution. States that nowhere else on the Metrorail system are a park-and-ride facility, freeway (Dulles Connector Road), rail yard, and an aerial track simultaneously located near residences. (0388, 4-03)

**Public Comment:** States that the Westhampton neighborhood is the starting point for the project, so how will they not be affected by noise, traffic, air, and visual impacts of the project, as stated in the Draft EIS and *Public Hearings Report*. (0520, 4-01)

**Response:** *The Project Team is aware of Westhampton's concerns. The Project Team will continue to coordinate with the neighborhood and Fairfax County on these issues during preliminary engineering.*

**Public Comment:** Requests that the Project Team adopt a more aggressive mitigation strategy such as an underground track bed in the area near the West Falls Church Metrorail Station and rail yard. (0117, 4-03)

**Response:** *The planning for the Orange Line Junction of the Metrorail Extension has always incorporated the use of at-grade and aerial methods of construction for connecting the flyover from the median of I-66 to the median of the Dulles Connector Road. Provisions for this connection were made with the original construction of the Orange Line in the early 1980s, including the construction of a pier and foundation in between the Orange Line tracks to facilitate such an aerial structure to minimize eventual disruption to the Orange Line during construction.*

*The impacts and costs for underground construction of this connection were not evaluated as part of any current alternative. Making this connection would present extremely complex construction challenges to keep the Orange Line fully operational and not impact both directions of I-66, a major interstate highway. Due to its complexity, the cost of this underground construction for this segment would be significantly greater than typical cut and cover construction, and many times greater than the planned at-grade and aerial construction.*

**Public Comment:** Encourages the Project Team to visit the neighborhood and perform acoustical readings when the trains are actively entering and existing the West Falls Church S&I Yard. Suggests that if the Project Team cannot find a way to mitigate or lessen the noise, then the design of the rail yard should be modified before construction of the Dulles Line begins. States that residents are not against the project, but they are against the increased noise. The Project Team needs to start a dialogue with the neighbors of the West Falls Church rail yard. (0089, 4-02)

*Response: The Project Team is aware these concerns. As mitigation for the potential noise impacts, it is proposed that the new lead track and portions of the existing loop track at the West Falls Church Yard be fully enclosed to reduce wheel squeal noise impacts from yard operations.*

#### **Use of Lubricants to Address Wheel Squeal**

**Public Comment:** Concerned that the mitigation measures proposed for wheel squeal (on page 220 of the *Public Hearings Report*) will never get implemented. Commenter inquired with a Metrorail engineer and was told that lubricants are only used on tracks when there are complaints from neighbors. (0137, 4-02)

*Response: The use of lubricants is one of the measures identified in the Draft EIS as possible mitigation for train wheel squeal. In addition is proposed that the new lead track and portions of the existing loop track at the West Falls Church Yard be enclosed to reduce wheel squeal noise impacts from yard operations.*

#### **Cutting Down Trees for Stormwater Pond Will Increase Noise Impacts**

**Public Comment:** Concerned that the noise is presently so severe that it is a public safety hazard that will be made worse by the construction of Metrorail without the construction of sound walls between the Dulles Toll Road and their neighborhood. Concerned that noise levels are currently above FTA accepted limits, and the commenters feel that if the current mature forestation is torn down for the construction of a stormwater pond, then WMATA is directly responsible for the resulting noise impacts. Commenters recommend the development of a noise abatement plan between WMATA, VDOT, and affected individuals. (0383, 4-01)

*Response: The proposed pond location in question currently is a natural depression with a culvert outfall. If a pond were constructed in this location, little or no grading would be required to convert existing depression into a stormwater management facility. It is unlikely that many of the trees would need to be removed. A discussion of the Project's noise effects and proposed mitigation measures is presented in Section 4.7 of the Final EIS.*

#### **Project Will Add to Existing Noise**

**Public Comment:** The project will exacerbate existing noise and traffic problems. (0430 4-01) (0388, 4-01)

*Response: The Project Team utilized the guidelines established by the FTA (Transit Noise and Vibration Impact Assessment, 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. The FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to*

*evaluate impacts due to new transit projects against the background of existing noise levels. Where background noise is already high, as in your area, it takes only a relatively small increase to trigger an impact. Section 4.7 of the Final EIS contains proposed mitigation measures for predicted noise impacts.*

### **Concern over Existing and Proposed Noise Mitigation**

**Public Comment:** Inadequate noise mitigation- unconvinced of the effectiveness of the parapet walls for aerial track. Existing walls are too short, ineffective, and have not been maintained by VDOT. No sound wall exists between the DAAR and some of the residences in the community. (0388, 4-02) (0430, 4-02)

**Response:** *The Project is not responsible for the mitigation of existing noise issues. Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). The types and location of the proposed mitigation measures are described in Section 4.7 of the Final EIS. Figures 4.7-5a and 4.7-5b in the Draft EIS are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street.*

*Roadside sound barriers are typically evaluated during the design of major highway improvement projects such as widening or new alignment when noise impacts are forecast for adjacent noise-sensitive receptors. Evaluation criteria including effectiveness and cost are typically employed to make decisions on sound barrier location, height, and type. Generally speaking, sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.*

### **Noise Impacts at West Falls Church**

**Public Comment;** Increased noise volume, frequency, and duration from additional trains at the West Falls Church Service and Inspection (S&I) Yard. (0483, 4-04) (0501, 4-01), (0499, 4-01), (0500, 4-01)

**Public Comment:** Concerned that the noise impacts will be louder than expected since the new Metrorail line will shoot up out of the West Falls Church Station, and since accelerating up hill will take more power, thereby creating more noise. The Project Team stated that the only impact will be wheel squeal noise. (0520, 4-02)

**Public Comment:** Suggests that the Project Team needs to conduct a neighborhood study around McKay, Eastman, Norwalk, and Idylwood Streets. States that the high-pitched wheel squeal from trains sounded like a piece of chalk or fingernails scraping a blackboard. The noise levels are intolerable. (0089, 4-01)

**Public Comment:** And be it further resolved that, with the increase in storage tracks in the West Falls Church S&I Yard from the 26 storage tracks proposed previously to 42 to accommodate the lack of storage at Dulles during the first phase, and given increased maintenance operations, and given the conjunction of this yard with aerial rail track and a ninety-degree turn near residences as well as a new multi-story parking structure at the West Falls Church station, there is an increased need to take strong efforts to mitigate noise that impacts the surrounding residential neighborhoods and analyze traffic effects. (0034 0035-3)

**Public Comment:** They may point out that there is a broader area problem that involves not just the yards in the narrow sense, but proximity to the station whether it's new structure parking being built and to the projected new rail line which will be rising to an aerial level and making a 90-degree turn all within a very short distance of the yard. There has to be a careful treatment of all the noise in that entire area. (0034 0143-6)

**Public Comment:** We are pleased that you have expressed a desire to deal with the noise abatement problems; the introduction of structures are certainly very desirable. (0034 0143-5)

**Response:** *With respect to the concerns of communities on the noise of the Metrorail West Falls Church Yard, the Project Team recommended and the decision-makers approved the enclosure of 1) a portion of the existing loop track at the yard's eastern end and 2) the new yard lead in box structures. These noise mitigation measures by the Project will reduce the wheel squeal noise of the train movements within the Yard. The Project Team notes, however, that new residences have been recently constructed and occupied adjacent to the West Falls Church S&I Yard without any noise mitigation provided by the residential developer. As during the past ten-year effort to address yard noise, there will be coordination among DRPT, WMATA, Fairfax County officials and staff, and representatives of the communities during preliminary engineering and final design.*

*The number of additional cars at West Falls Church Yard has increased from 26 in the Draft EIS to 42 in the Supplemental Draft EIS and Final EIS in order to support the Metrorail fleet of the Wiehle Avenue Extension.*

*Wheel squeal from the new yard lead (for Metrorail trains to and from the Dulles Corridor Line) at the east end of the yard was included in the modeling analysis. Based on measured noise levels from the current wheel squeal along a similar radius curve at the yard, exceedances of the FTA impact criteria are predicted at nearby residences. No exceedances are predicted from the Project's aerial guideway in the median of the Dulles Connector Road.*

*Other noise sources, such as train horns, were not included in the modeling analysis. Brake squeal was not determined to be a major problem. Based on the current operating schedule at the yard, the increase in the overall yard noise due to the cleaning and general operation of 42 additional Metrorail cars needed for the Project is expected to be minimal.*

### Inadequacies of Noise Analysis

**Public Comment:** Deficiencies in the noise analysis. (0483, 4-02), (0499, 4-02), (0500, 4-02), (0501, 4-02)

**Public Comment:** Additional study of the noise impact at peak cumulative noise levels on the surrounding communities from the enlarged rail yard, its tunnel and curved feeder tracks, the highway, and metal train support. (0483, 4-01), (0499, 4-03), (0500, 4-04), (0501, 4-03)

**Public Comment:** The Project Team's reliance on noise level averages over a 24-hour period seem to disregard the "annoyance factor" caused by rush hour service, tonal disparities in wheel squeal, vibration, curving rails, as well as increased vehicular traffic. (0137, 4-03)

**Public Comment:** The statement made in the *Public Hearings Report* that mitigation will be more closely examined once an Locally Preferred Alternative has been selected is premature at best, since a response on page 235 of the report states that no new noise barriers are proposed along the Dulles Toll Road to fix or replace existing barriers. States that the Project Team has underestimated project noise levels since MWAA and VDOT have both underestimated traffic volumes in the past. (0137, 4-04)

**Response:** *As described in Section 4.7 of the Final EIS, the noise analysis was conducted according to the FTA Transit Noise and Vibration Impact Assessment (1995) guidelines. Accordingly, the peak-hour equivalent noise level (or Leq) was used to evaluate impacts at non-residential receptors; and the 24-hour day-night noise level (or Ldn) was used to evaluate impacts at residential receptors. Although the FTA criteria are defined in terms of allowable project exposure, the basis for the FTA criteria is actually the increase in the cumulative noise (i.e., when the Project levels are added to the existing noise). To be conservative (or to determine the "peak cumulative noise output"), the modeling analysis included maximum operating volumes for all time periods under both the Metrorail and the BRT Alternatives. For example, the Friday-*

*Saturday Metrorail schedule was selected to correspond with the extended operating hours from the then 5:30 AM to 2:00 AM.*

*In addition to the FTA cumulative noise criteria, peak or maximum noise levels (or Lmax) from transit operations were also used to evaluate Project impacts using the WMATA Design Criteria for various residential land uses. The Lmax noise level is independent of the existing background and the number of operations and represents the maximum level observed during a single event, such as a Metrorail or bus passby.*

*Although newer pre-cast concrete track structures are proposed to minimize excessive noise and vibration levels, the modeling analysis included a 4-decibel penalty to account for potential structural noise due to Metrorail passbys along all elevated sections of slab track. As described in Section 4.7 of the Final EIS, where exceedances of the FTA or the WMATA impact criteria are predicted, mitigation measures are proposed.*

### **Concerns over Proposed Noise Mitigation Strategies**

**Public Comment:** Draft EIS does not adequately address traffic and visual impacts on Westhampton and proposed mitigation measures for noise do not address neighborhood concerns. (0430, 4-03)

**Public Comment:** Deficiencies in the proposed noise mitigation strategy with regards to the proposed noise barriers near the track along sections of the Westhampton neighborhood. Additional noise mitigation features such as additional sound barriers and reinforcement of existing sound barriers are needed. (0483, 4-03), (0499, 4-04), (0500, 4-03), (0501, 4-04)

**Public Comment:** Concerned about the impacts the project will have on his neighborhood specifically, noise, cut-through traffic, speeding, overflow parking, and the lack of sidewalks/curbs. Recommends speed humps and the construction of an adequate sound barrier on the spur of the Dulles Toll Road/I-66 exit. (0423, 4-01)

**Response:** *Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). The locations of the proposed mitigation measures are described in Section 4.7 of the Final EIS. Figures 4.7-5a and 4.7-5b in the Final EIS are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street.*

*Roadside sound barriers are typically evaluated during the design of major highway improvement projects such as widening or new alignment when noise impacts are forecast for adjacent noise-sensitive receptors. Evaluation criteria including effectiveness and cost are typically employed to make decisions on sound barrier location, height, and type. Generally speaking, sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.*

*The Metrorail Extension at the junction with the existing Orange Line in West Falls Church is expected to have a gradual curve with a turning radius of 1,000 feet. Based on the FTA guidelines as well as measurements made at other existing Metrorail curves, wheel squeal is not expected to occur at locations with this curvature. Tangential noise that typically occurs along straight sections of track is expected along this segment of the Dulles Corridor.*

*Due to structural vibrations, aerial track may exhibit additional structural noise as a result of train passbys along aerial guideway sections. Although the potential for additional structural noise was included in the noise assessment, it is highly unlikely due to the newer structural designs proposed along the Dulles Corridor. Pre-cast concrete supports, resiliently-supported ties, and continuously welded rail (CWR) track included in the proposed track design all combine to greatly minimize overall noise and vibration levels from train passbys along aerial sections.*

## Consider Non-Transit Noise Impacts and Standards

**Public Comment:** The discussion of noise pollution in Chapter 4 dismisses the noise impacts based on selective monitoring in only a few neighborhoods. The Mid-Corridor neighborhoods, particularly Chatham's Ford (which lacks a sound barrier), already experience major noise pollution. The sound from Metrorail would be deafening and the Draft EIS reliance exclusively on FTA and WMATA criteria to assess the impact unduly minimizes the adverse effects on such neighborhoods. (0510, 4-01)

**Public Comment:** The Project Team should revise the Draft EIS to meet objectives of intermodal planning in relation to noise from increased vehicle traffic. (0392, 4-01).

**Public Comment:** Requests that the Project Team more carefully measure and project the cumulative sound levels at many more sites in the area using federal and VDOT standards. Peak sound levels should be studied as well. (0117, 4-01)

**Response:** *The Project Team utilized the guidelines established by FTA (Transit Noise and Vibration Impact Assessment, 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects. However, in areas, such as yours, with higher background levels, Project noise limits established by the FTA are more stringent than in quieter areas allowing the ambient levels to remain the same in the future or increase only slightly before an impact is identified.*

*Additionally, the FTA guidelines were used to evaluate potential impacts due to transit operations. Impacts due to traffic were evaluated using the FHWA guidelines only in those areas where the existing roadways would be modified or substantially changed (e.g., near Metrorail pocket tracks that would require a "bubbling" of the roadway).*

## B. Supplemental Draft EIS Comments

### State Agency Comments

#### Noise Analysis and Impacts Should Conform with CEQ Requirements

**State Comment:** In the PHR, it is stated that the noise methodology for this project followed FTA guidelines appropriate to transit projects. In light of the current Council of Environmental Quality's (CEQ's) NEPA regulations, the project must include a comparative analysis of all alternatives (including the No Build Alternative). Therefore, VDOT interprets that any and all environmental impacts (including noise) will be addressed as part of the Project and conform with CEQ's current requirements. (0091 4-01)

**Response:** *The Draft EIS, Supplemental Draft EIS, and Final EIS have been and will continue to be in compliance with the FTA rule and guidance on environmental impact and related procedures and, thus, are in conformance with CEQ regulations. All environmental impacts, their minimization and avoidance, and their mitigation have been and will be addressed by the project.*

#### No Build Noise Assessment

**State Comment:** The SDEIS does not provide a noise assessment for the No-Build Alternative (Section 4.7). (0091 0106-24)

**Response:** *The Dulles Corridor Rapid Transit Project followed FTA noise and vibration methodology appropriate for transit projects. This methodology does not require an assessment of the future No Build noise condition.*

## **Local Agency Comments**

### **Noise Related to Yard and Service Tracks**

**Local Comment:** The SDEIS commits to the enclosure of this curve [West Falls Church Service and Inspection Yard] as well as the enclosure of a new portal that would connect the main line of the tracks along the Dulles Connector Road with the S & I yard. The proposal to enclose the tracks should be commended; however, it would be helpful if the EIS would note what the noise reduction benefits of the enclosures will be as they relate to event-specific noise impacts - what will be the decibel reduction for individual events that would result from the enclosures? Will wheel squeal from the enclosed tracks be audible? If so, what will the event specific decibel levels be on nearby residential properties? Will any residences still be exposed to noise levels from wheel squeal in excess of 55 dBA? (0093 0109-21)

**Local Comment:** Section 4.7.1.2 This section notes that additional storage tracks will be needed at the West Falls Church S & I yard "in order to increase the storage capacity from 26 rail vehicles under the Draft DEIS Metrorail Alternative to 42 rail vehicles for the proposed LPA." The new tracks would be located closer to residences than the existing tracks. No information is provided regarding the noise level increases that would be associated with the additional storage, although it is noted that the overall change in noise, when considering both the increased storage and the noise reductions associated with the proposed track enclosures, would be a reduction of seven decibels. It is not clear if this seven decibels reflects an overall average noise level reduction or if it is meant to apply to a hypothetical single event. In any case, more guidance should be provided regarding the nature of the increased noise impacts associated with the additional vehicles (e.g., train movements; horns), and whether there will still be any residential receptors exposed to single event impacts of 55 dBA or more. (0093 0109-22)

**Local Comment:** The County requests technical back-up information quantifying the benefits of the noise mitigation measures proposed for the West Falls Church S & I Yard ..... (0083 0098-5)

***Response:** Detailed analysis of the effects of enclosing tracks in the West Falls Church S&I Yard has not been conducted. However an estimated overall reduction of approximately seven decibels (7 L<sub>dn</sub>) would result for the residents closest to the yard.*

**Local Comment:** The County requests technical back-up information quantifying the benefits of the noise mitigation measures proposed for the West Falls Church S & I Yard and the efficacy of the noise mitigation measures for aerial sections of track. (0083 0098-5)

***Response:** Benefits associated with the proposed mitigation measures at the West Falls Church S&I Yard have not been quantified at this time. Quantification of the anticipated noise reductions associated with this proposed mitigation will occur during the preliminary engineering or final design phases of the Project. Technical information regarding the anticipated effectiveness of proposed noise mitigation for sections of aerial guideway (except on Airport property) is provided in the Noise and Vibration Technical Report (June 2002) prepared for the Project.*

## **Public Comments**

### **Need Sound Barriers Along the Dulles Connector Road**

**Public Comment:** Also, we are disappointed that no sound barriers are planned along the Dulles Connector road. They should be, in my opinion, and frankly I am surprised that federal noise pollution guidelines are not already exceeded even without the Metro. (0124 4-01)

***Response:** Three to four-foot parapets, or sound barriers, are planned along aerial sections of track (except on Airport property) and five to six-foot sound barriers (three-feet above top of rail) are proposed along at-grade sections of track where noise receptors are forecast to exceed FTA criteria under Metrorail operations.*

### Need to Upgrade Existing Wooden Noise Barrier Along Dulles Connector

**Public Comment:** We must have a noise barrier of the latest design. The wooden wall that currently separates my property from the traffic feed was never, I understand, designed to protect against noise. It most certainly does not today.

Section 6.16.3 of the report deals with available mitigation, and does not appear to treat the expected problem specifically.

However, in 6.16.2 the report deals directly with noise barriers. It is necessary, as the report states, that "*effective sound walls be erected before construction begins* (ital mine)." There are additional comments on the subsequent necessity of proper barriers. A coordinated agency effort is vital and needs not simply consideration but absolute insistence. (0005, 4-01)

**Public Comment:** I continue to be troubled by the project's "one-mitigation-fits-all" approach, not only to the widespread concern about noise, vibration, wheel squeal and construction, but to the assumption that this is all of a piece with the project's visual impact. The point has been well made at every hearing that the Dulles Connector has considerable noise problems even without the addition of Metro Rail service.

The project team's fixated response about raiiside coated concrete parapets as an answer to adjacent homeowner and community fears, does not meet the legitimate concerns of those of us who look at the multi-modal impact of all traffic in the corridor - especially given the woeful underestimation of daily traffic volumes projected when the connector was planned. Analysts' estimates of increasing traffic volumes, even with the addition of rail service, should be a red flag to planners and a spur to a fully coordinated response.

Quite frankly, your team's responses to the public comment in the Feb. 11 report all seem to be directed to a single mitigation measure. Those of us who have labored in the field of government project planning and construction are acutely aware of the stark reality that once something is designed and built, there is not the slightest chance of a "retrofit," no matter how egregious the miscalculation. MWAA's original response to Supervisor Stu Mendelsohn's request in behalf of our community (letter of Sept. 10, 1999) is a case in point. (0036, 4-01)

**Public Comment:** The wooden fence/noise barrier that was put up when the feeder to Route 66 was built was never intended to mitigate noise level. Rather, it was chosen because it was attractive and blended into the environment. With the increase of traffic over the years, the noise level from the feeder road has increased dramatically, to the point where I cannot be outside and enjoy my patio.

When the project to extended the Metro to Tysons is built, it must include a better, more effective barrier against the noise that is bound to result. Please ensure that this is included in your project plans. (0137, 4-01s)

**Public Comment:** I am writing to express my agreement with my neighbor's (Mr. Robert Lincoln) comments that are enclosed. (0138, 4-01)

**Public Comment:** I would like to support Mr. Robert Lincoln as he express his concerns in his letter dated February 20, 2004 as per copy attached. (0139, 4-01)

**Response:** *Highway noise walls are not proposed for the properties along the Dulles Connector Road or the Dulles Toll Road as part of this Project. Three to four-foot parapets or sound barriers are planned along aerial sections of track (except on Airport property) and five to six-foot sound barriers (three to four-foot above top of rail) are proposed along at-grade sections of track where noise receptors are forecast to exceed FTA criteria under Metrorail operations. The types and locations of these noise barriers are described in Section 4.7 of the Final EIS.*

*With respect to the concerns of communities on the noise of the Dulles Connector Road, the*

*Commonwealth of Virginia will seek to address the existing noise effects upon the residential communities with noise abatement measures. If the Commonwealth decides to proceed with noise abatement measures, it would bear most of the cost of the abatement, since this is an existing condition due mainly to traffic to and from the Dulles Toll Road. The Project itself would share in the cost of abatement proportional to the Project's contribution to the future levels of noise and to its visual effects. DRPT has been identified as the lead agency for the coordination among VDOT, MMAA, WMATA, FTA, Fairfax County officials and staff, and representatives of the affected communities.*

### **Provide Noise Barrier of Latest Design Before Construction Begins**

**Public Comment:** It is imperative that a noise barrier of the latest design be constructed to keep out both noise and vermin that are bound to encroach. And, as stated in 6.16.2 of the report, "effective sound walls be erected before construction begins."

Lengthy construction and the din of the metro itself will make our community undesirable for those who currently live there as well as perspective buyers unless adequate barriers are erected. (0140, 4-01)

***Response:** There is a potential for wheel squeal noise based on the 800-foot radius of curvature proposed near Hallcrest Heights. However, to better define the onset of wheel squeal, actual source measurements were conducted along an existing Metrorail line near Ronald Regan Washington National Airport with a radius of 755 feet. Based on the results of the modeling analysis, ambient day-night noise levels from the Metrorail operations are predicted to range from 50 to 54 dBA at the Hallcrest Heights residences. The modeling analysis includes three foot parapets (or barriers along the edge of the track bed) proposed along all sections of aerial guideway (except on Airport property). These levels are well below the measured ambient background noise level of 59 dBA recorded at a residence at 7405 Hallcrest Drive. As a result, no exceedances of the FTA criteria are predicted from Metrorail operations near Hallcrest Heights.*

### **Many Complaints About Noise Are Not Serious**

**Public Comment:** The many complaints about noise are not that serious. Most of them are about highway noise that they want Metrorail to mitigate for them. (0013, 4-01)

***Response:** Thank you for your comment.*

### **Concern over Noise Impacts in Hallcrest Heights**

**Public Comment:** Hallcrest Heights faces the possibility of being left in an interagency crossfire of non-responsibility because neither VDOT, Fairfax County, nor MWAA will construct adequate noise barriers near the neighborhood. DRPT, WMATA, MWAA and Fairfax County need to coordinate their efforts, as set forth in the Memorandum of Understanding (July 17, 2001). (0137, 4-05)

**Public Comment:** The Hallcrest Heights neighborhood will need a noise barrier equivalent to that erected at Wolf Trap. It would need to be cast concrete with absorptive coating, that would extend all the way down the off ramp to the merge with Route 123. The noise barrier would need to be installed prior to construction. (0137, 4-06)

***Response:** The Project Team utilized the guidelines established by the FTA (Transit Noise and Vibration Impact Assessment, 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects. However, in areas, such as yours, with higher background levels, Project noise limits established by the FTA are more stringent than in quieter*

areas allowing the ambient levels to remain the same in the future or increase only slightly before an impact is identified.

*There is a potential for wheel squeal noise based on the 800-foot radius of curvature proposed near the Hallcrest Heights. However, to better define the onset of wheel squeal, actual source measurements were conducted along an existing Metrorail line near National Airport with a radius of 755 feet. Based on the results of the modeling analysis, ambient day-night noise levels from the Metrorail operations are predicted to range from 50 to 54 dBA at the Hallcrest Heights residences. The modeling analysis includes three to four-foot parapets (or barriers along the edge of the track bed) proposed along all sections of aerial guideway (except on Airport property). These levels are well below the measured ambient background noise level of 59 dBA recorded at a residence at 7405 Hallcrest Drive. As a result, no exceedances of the FTA criteria are predicted from Metrorail operations near Hallcrest Heights.*

*Currently, sound barriers are not proposed along the property lines adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property). The locations of the proposed mitigation measures are described in Section 4.7 of the Final EIS. Figures 4.7-5a and 4.7-5b are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street.*

*Roadside sound barriers are typically evaluated during the design of major highway improvement projects such as widening or new alignment when noise impacts are forecast for adjacent noise-sensitive receptors. Evaluation criteria including effectiveness and cost are typically employed to make decisions on sound barrier location, height, and type. Generally speaking, roadside sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.*

## **Noise Related to Cross Over**

**Public Comment:** The location of the proposed double cross over directly in the middle of the Cleveland Building redevelopment (potentially PRM 3.0 FAR high-rise residential mix use) creates the potential for a crossover "clack" in close proximity to high rise, high density residential development. What assurances do we have that the corridor noise technology or design has improved to avoid this potential nuisance sound. (0123 0158-20)

**Public Comment:** We are very concerned about location, noise, and set backs of cross over (the breaker station) on the Cleveland site. Please provide specific details so that we may evaluate these issues. (0123 0158-24)

**Response:** *In response to this comment and others of WEST\*GROUP, the Project Team shifted the double crossover approximately 170 feet inbound towards the Dulles Connector Road interchange. Its location is now near the ramp terminal of the interchange and the east property line of the Cleveland Building parcel. The parapet walls that are part of the standard WMATA aerial guideway would provide significant sound attenuation for trains passing through the switches at the proposed double crossover. The size of the double crossover is the standard size shown for 14' (narrow) track centers, which is significantly less than the size of a double crossover for 40.5' (wide) track centers that were previously examined.*

## Noise in Neighborhoods and Affecting Specific Properties

**Public Comment:** I live at 2134 Greenwich Street. My property is right where the Dulles Road swings off of Rt. 66, and the noise has been unbearable. No sound barrier has ever been constructed and we never received an acceptable answer as to why. Please speak to the noise issue. I am very concerned about additional noises, both during and after the building is completed. I believe I shall now be forced to move because of the noise. As it is now I cannot enjoy my yard because the noise is so stressful. (0011 0011-1)

**Response:** *Estimated  $L_{dn}$  noise levels from Metrorail operations along Greenwich Street are predicted to range from 55 to 59 dBA. These levels are below the measured background of 62 to 65 dBA. Based on current traffic levels, the ambient noise level in 2025 with Metrorail service would increase approximately 1 decibel to range from 63 to 66 dBA. As a result, no exceedances of the FTA noise criteria are predicted from Metrorail passbys at receptors along the Greenwich Street neighborhood.*

**Public Comment:** Currently, no sound wall or barrier exists in our neighborhood [Chathams Court] nor is there a plan for the construction of a wall in the EIS draft or supplement. At present time, there is a severe noise problem in our neighborhood where sound levels exceed the accepted limits. (0116 0141-1)

**Public Comment:** We live in the Westhampton neighborhood and are very much affected by the new projects (garage, etc.) Our community needs soundbarrier, (0121 0155-1)

**Public Comment:** Our family lives at 1552 Hunting Avenue in McLean, VA, which will be located in close proximity to the newly proposed Metrorail route through Tysons Corner. Our house is adjacent to the Dulles Access Road, near Route 123. The proposed Metrorail would become aerial at this location. There have been no provisions in the impact statement to address increased noise caused to my community. Specifically, I believe that installation of sound barriers, at a minimum, should be included in the plans to protect the community. (0122 0156-1)

**Response:** *Three to four-foot parapet barriers are planned for all aerial Metrorail track sections in accordance with WMATA design criteria. Five to six-foot parapets are proposed in areas adjacent to noise receptors that were forecast to exceed FTA noise criteria under Metrorail operations. The recommendation for five to six-foot parapets was based on the projected need for additional noise reductions, which would bring levels below the FTA impact criteria.*

**Public Comment:** My home and residential property back on the 25-foot wooded area (which I believe is managed by the Virginia Department of Transportation) next to an aerial portion of the proposed Dulles Corridor Rapid Transit line. This particular aerial portion is to be sharply curved to go from the Route 66 access road into Tysons Corner. The aerial curve obviously will result in tremendous wheel squealing, deceleration, and other attendant loud noise from trains on the Dulles line. This is to urgently request inclusion of a proper noise-protective wall at the aerial curve under Phase 1 of the new proposal. The existing aged wooden wall on the property here is not a noise-protective wall and is quite different from the noise-protective walls erected on various other parts of the Rapid Transit System. I understand that U.S. and Virginia legislators, and state and local authorities, have been fully informed about the noise problem and consider vital the erection of a noise-protective wall at the aerial curve. (0005 0005-1)

**Response:** *There is a potential for wheel squeal noise based on the 800-foot radius of curvature proposed near the Hallcrest Heights. However, to better define the onset of wheel squeal, actual source measurements were conducted along an existing Metrorail line near Ronald Regan Washington National Airport with a radius of 755 feet. Based on the results of the modeling analysis, ambient day-night noise levels from the Metrorail operations are predicted to range from 50 to 54 dBA at the Hallcrest Heights residences. The modeling analysis includes three to four-foot parapets (or barriers along the edge of the track bed) proposed along all sections of aerial guideway (except on Airport property). These levels are well below the measured ambient background noise level of 59 dBA recorded at a residence at 7405 Hallcrest Drive. As a result, no exceedances of the FTA criteria are predicted from Metrorail operations near Hallcrest Heights.*

*Currently, sound barriers are not proposed for properties along the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property), although five to six-foot parapets are used in some areas. The locations of the proposed mitigation measures are described in Section 4.7 of the Final EIS. Figures 4.7- 5a and 4.7-5b are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street. Generally speaking, roadside sound barriers are not constructed except in conjunction with major highway improvements. Major highway improvements are not anticipated in conjunction with the Dulles Corridor Rapid Transit Project.*

**Public Comment:** My house was built in 1972, which pre-dates the Connector Road. On behalf of the Virginia Department of Rail and Public Transportation (VRail), WMATA will dismantle the wooden sound wall to create a staging area for the construction of the Tie Breaker Station. This raises the following question: Does the governing law allow VRail to restore the wall to its original (i.e., non-conforming) condition or must VRail meet the VDOT standard of abating noise up to the top of the first floor of a residence? (0025 0026-6)

**Response:** *Currently, new and taller highway noise walls are not proposed for properties adjacent to the Dulles Connector Road or Dulles Toll Road as part of the Project. The Project Team recommended and the decision-makers approved that a new wooden noise wall surround the TBS-2 for its security, for enhanced community safety and for the aesthetics of the neighborhood. Since TBS-2 would not be visible from the Baldwin Drive neighborhood, it would not receive any architectural treatment. The new wooden noise wall would have doors at the location of the doors of the TBS-2 and the remote train control room. The height of the new wooden noise wall would be sufficient to screen the TBS-2, which has a height of 13 feet above its concrete slab foundation.*

**Public Comment:** We request the following additional study and mitigation: More analysis of the adequacy of the proposed noise mitigation measures at additional test points in our neighborhood. (0026 0027-5)

**Response:** *The Project Team utilized the guidelines established by (Transit Noise and Vibration Impact Assessment, 1995) to determine the applicable noise impact criteria in all areas of the proposed corridor. FTA noise criteria are based on existing noise levels that increase as the background level increases to a point beyond which impact is determined on Project noise alone. The FTA criteria are not used to assess existing background noise but rather, are used to evaluate impacts due to new transit projects against the background of existing noise levels. Where background noise is already high, as in your area, it takes only a relatively small increase to trigger an impact.*

*Currently, sound barriers are not proposed for properties along the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets or track edge barriers are proposed along all aerial Metrorail sections (except on Airport property), although five to six-foot parapets are used in some areas. The types and location of the proposed mitigation measures are described in Section 4.7 of the Final EIS. Figures 4.7- 5a and 4.7-5b are included to help identify the location of the proposed five to six-foot parapet barriers closest to your street.*

*Future efforts during preliminary engineering and final design will refine the analysis and include coordination among DRPT, VDOT, WMATA, MWAA, FAA, and Fairfax County to determine the need for application of any additional mitigation measures to address existing traffic noise conditions.*

### Duration of Noise Impacts

**Public Comment:** Project officials have informed us that: During peak hours, a train will run every seven (7 minutes), and during off-peak hours, a train will run every 12 minutes; Sunday through Thursday, hours of service will be from 5:30 am until midnight, and during Fridays and Saturdays, from 5:30 am until 2:00 am or possibly 3:00 am; and Non-service activities will occur when there is no passenger activity. Thus, we have the possibility of experiencing "rail activity" (a euphemism for NOISE) all day and all night, every day and every night, or in the words of our young people: "24/7." The rail switches behind my house will add additional noise to the neighborhood. Project officials have stated that they will install noise abatement measures at grade level. But rail activity and noise will be constant. (0025 0026-3)

**Response:** *Cumulative future noise levels are a function of the magnitude of both the ambient background level as well as the noise from transit operations. FTA criteria allow the ambient noise levels to increase 1 to 3 decibels (depending on the current background level). Project noise levels are predicted to increase the ambient level by less than 2 decibels. Where exceedances of the FTA criteria are predicted, mitigation measures are proposed that would reduce the transit noise level below the background. The future noise levels are a logarithmic sum of the predicted Project noise levels and the measured background levels.*

**Public Comment:** [We request] Commitment from the appropriate agencies that nighttime (11pm to 6am) noise during construction will not exceed levels deemed acceptable for post-construction daytime noise, as measured from stakeholder properties. (0088 0103-1)

**Response:** *During construction, DRPT would comply with noise limits established by FTA and WMATA guidelines, federal law (for Wolf Trap Farm Park), and time-of-day restrictions specified in local noise ordinances. If necessary, temporary mitigation measures will also be employed.*

### Sound Abatement Walls and Other Mitigation Treatments

**Public Comment:** Please take note that we stand in agreement re noise abatement with our many neighbors on both sides of the current Dulles connecting route, between the West Falls Church Metro station and Tysons Corner. While no one in our household or employ will have cause to use or benefit by the Dulles Rail, we support the need for mass transit. Nonetheless, we are concerned about adding to the already constantly increasing noise in our own backyard, and to the many nearby neighborhoods along the proposed route – And we sincerely hope that effective sound walls will be erected before construction begins. You are also no doubt aware that Dominion Power began last summer with a plan to institute increasingly extreme tree cutting within its easements, thereby further decreasing any natural barrier to the sound and sight problems of adding the rail line to the existing roadway. (0017 0018-1)

**Public Comment:** We are property owners on Baldwin Drive the proposed metro line will literally run behind our house. We would like to know if you plan to put walls up to block some of the noise or if you do not know do you know who I can contact to find out about the walls? (0024 0025-1)

**Response:** *Parapets (or track edge barriers) would assist in shielding new noise from Metrorail trains along aerial (above-ground) sections of track. At those locations where exceedances of the FTA criteria are predicted, higher parapets (five to six-feet) are proposed to minimize the predicted Project-related impacts. Changes to the existing highway noise barriers along the Dulles Connector Road are not included as part of the Project.*

**Public Comment:** It is my understanding that under VDOT standards, a sound wall is required to reach the top of the first floor of a residence. There are at least three residences in the Great Falls Manor neighborhood- including my house- where the sound wall does not meet this standard. Thus, all of the residents in the Great Falls Manor neighborhood who live adjacent to the Connector Road incur significant noise pollution- both inside the house and outside- when we engage in any activity above the level of the sound wall. (0025 0026-4)

**Response:** *Since capacity improvements are not proposed for area roadways as part of the Project, traffic noise evaluations were not conducted near the Great Falls Manor neighborhood. Changes to existing roadway noise barriers are not proposed as part of the Dulles Corridor Rapid Transit Project. Parapets (or track edge barriers) would assist in shielding new noise from Metrorail trains along aerial (aboveground) sections of track. At those locations where exceedances of FTA criteria are predicted, higher parapets (five to six-feet) are proposed to minimize the predicted Project-related impacts.*

**Public Comment:** The residents of Great Falls Manor will incur rail switches, a Tie Breaker Station and an access roadway. The existing wooden sound wall will be dismantled to create a staging area for construction of the Station. All we ask is that the wooden sound wall be replaced with a similar sound wall that is taller and more effective in shielding the residents from the increased noise and light pollution. (0025 0026-5)

**Public Comment:** They say that "fences make the best neighbors," but in our case, "sound walls make the best neighbors." We need a taller sound wall. If a taller sound wall were constructed, then any future increase in vehicular traffic, rail activity, noise, lights, etc., will have been obviated in advance. We urge the project personnel to consider what they would want for themselves or their loved ones, if they lived on Baldwin Drive. All we ask is that you do the "right thing" by the residents of the Great Falls Manor neighborhood. (0025 0026-8)

**Public Comment:** Additional noise and visual mitigation with concrete sound walls at the roadside, vegetative plantings and additional sound muffling for the aerial portion of the revenue tracks. (0026 0027-6)

**Response:** *Parapets (or track edge barriers) would shield new noise from Metrorail train passbys along all aerial (above-ground) sections of track. At those locations where exceedances of FTA criteria are predicted, additional parapet heights (five to six-feet) are proposed to minimize the predicted Project-related impacts. Changes to existing roadway noise barriers are not proposed as part of the Dulles Corridor Rapid Transit Project.*

**Public Comment:** The new lower rail alignment will still run above existing sound walls at the roadside. Existing sound walls are ineffective and too short, and there is no sound wall at all between the Dulles Connector Road and some homes in our community. (0026 0027-8)

**Public Comment:** A higher and more extensive concrete sound wall at the roadside, vegetative plantings and additional sound muffling for the tracks because the rail line will run above the existing barrier and some homes have no barrier. (0087 0102-6) (0089 0104-6) (0099 0115-6) (0104 0121-4)

**Response:** *Three to four-foot parapet barriers are planned for all aerial Metrorail track sections in accordance with WMATA design criteria. Five to six-foot parapets are proposed in areas adjacent to noise receptors that were forecast to exceed FTA noise criteria under Metrorail operations. The recommendation for five to six-foot parapets was based on the projected need for additional noise reductions, which would bring levels below the FTA impact criteria.*

**Public Comment:** A sound barrier similar to that adjoining Wolf Trap is what is clearly justified. Such a barrier (aimed at both visual and noise mitigation) should extend all the way down the off-ramp through the merge with Route 123. (0036 0037-3)

**Public Comment:** While your report (in Section 4.7.3) speaks of "temporary noise barriers" being erected during construction, I would urge that a coordinated agency mitigation effort result in a significant barrier before construction to mitigate construction noise, operating noise and the visual impact all at once. (0036 0037-5)

**Public Comment:** Third, a sound barrier similar to that adjoining Wolf Trap is what we feel is justified. Such a barrier aimed at both visual and noise mitigation should extend all the way down the off-ramp through the merge with Route 123 which is our northern border. (0036 0062-3)

**Public Comment:** The wooden sound wall that was put up in 1980 is clearly inadequate even as things stand right now. Since part of it is going to have to be dismantled for purposes of constructing the tie-breaker station, we would like encourage the project officials to consider putting up a taller sound wall. (0025 0065-3)

***Response:** Currently, sound barriers are not proposed for the properties along the Dulles Connector or the Toll Road as part of the Project. Three to four-foot parapets barriers are planned for all aerial Metrorail track sections and five to six-foot parapets are proposed in areas where noise receptors are forecast to exceed FTA criteria under Metrorail operations. The locations of the proposed mitigation measures are described in Section 4.7 of the Final EIS and shown in Figures 4.7-5a and 4.7-5b.*

*During construction, DRPT would comply with noise limits established by FTA and WMATA guidelines, federal law (for Wolf Trap Farm Park), and time-of-day restrictions specified in local noise ordinances. If necessary, temporary mitigation measures will also be employed.*

**Public Comment:** As stated in the DEIS, WMATA may construct low sound walls along track level. This may reduce some of the rail noise, however, regardless of the sound absorptive materials added to the walls, the current impact highway noise will be reverberated off the walls into our neighborhood thus worsening the already severe impact. This statement was confirmed at our meeting with the WMATA managers. (0116 0141-6)

***Response:** Absorptive treatment of the proposed parapet barriers could help to reduce the amount of highway noise reflected from these structures. Further analysis of the effectiveness of proposed mitigation measures will be conducted during preliminary engineering or final design.*

**Public Comment:** WEST\*GROUP is concerned that the change in radius location of 100 feet and increase in curve length from 800 feet to 1000 feet to mitigate noise levels on a rail line 67 feet above grade has been offset by the cross over and its related "clack." We are pleased that the pocket track at the Tysons East Station has been removed but remain concerned that the noise may need further mitigation to allow the development at the new station to be successful. (0113 0132-8)

**Public Comment:** WEST\*GROUP is concerned that the change in radius location of 100 feet and increase in curve length from 800 feet to 1000 feet to mitigate noise levels on a rail line 67 feet above grade has been offset by the cross over and its related "clack". We are pleased that the pocket track at the Tysons East Station has been removed but remain concerned that the noise may need further mitigation to allow the development at the new station to be successful. We suggest that additional studies be completed as a part of the future design efforts to ensure that all appropriate noise mitigation techniques are included in the final design. (0123 0158-10)

***Response:** The Project Team evaluated the potential for noise and vibration impacts and provided recommendations on potential mitigation strategies to avoid significant impacts. Proposed mitigations are presented Section 4.7 of the Final EIS. Parapets (or track edge barriers) would assist in shielding new noise from Metrorail trains along aerial (above-ground) sections of track. At those locations where exceedances of the FTA criteria are predicted, higher parapets (five to six-feet) are proposed to minimize the predicted Project-related impacts.*

### **Cumulative Noise Generated by Auto Traffic and Rail**

**Public Comment:** The other issue that I hope can be addressed is the need for a real sound barrier wall along the areas in our neighborhood that now have some of the highest road noise, dirt and carbon monoxide levels along the corridor. I know that the amount of bus and commuter traffic noise has

constantly increased over the last few years along the hours when traffic is heavy. The 24 hour rail schedule and maintenance will significantly add to the problem. (0003 0013-2)

**Public Comment:** My community has an already existing and growing noise issue associated with escalating traffic since the construction of the airport connector segment. Since purchasing my lot in 1984, I have witnessed traffic noise increasing from a mild nuisance level to levels that at times preclude meaningful outdoor conversation...and it continues to get worse. There is no doubt that the traffic noise has been compounded by the enhanced connectivity of the highway originally intended to serve just as an airport connection but now linked to both the Dulles toll-road (with all ancillary traffic feeds) and the Greenway. Such broadened connectivity has unquestionable served to materially alter the utility scope of the highway. (0014 0015-1)

**Public Comment:** I am writing to express my concern regarding Metrorail being extended down the Dulles Access Road. The access road is my backyard "neighbor" and as a Realtor I have already experienced difficulty in selling homes backed up to Rt. 66. We live daily with the roar of traffic. Trains passing by our bedroom windows every 15 minutes for most of the day would be unbearable. At this point there isn't even a soundwall, what would it be like with trains? What do you say, let's forget Metrorail on the access road, and spend less money putting up a sound-wall. (0022 0023-1)

*Response: Parapets (or track edge barriers) would assist in shielding new noise from Metrorail trains along aerial (above-ground) sections of track. At those locations where exceedances of the FTA criteria are predicted, higher parapets (five to six-feet) are proposed to minimize the predicted Project-related impacts. Changes to the existing highway noise barriers along the Dulles Connector Road are not included as part of the Project.*

**Public Comment:** Total corridor noise from multiple sources (be it from rubber tires, metal wheels, diesel engines or traction motors) must be addressed. (0036 0037-1)

**Public Comment:** I urge the Project team to look beyond the application of FTA criteria and to work with the other agencies to mitigate total corridor noise. Given the woeful underestimation of traffic volumes projected in the 1981 EIS for the Dulles Connector, such a joint agency coordination of mitigation is surely justified. Most analysts predict a substantial increase in vehicular traffic, even with the addition of Metrorail. (0036 0037-4)

**Public Comment:** The total Corridor noise from multiple sources, be it rubber tires, metal wheels, diesel engines or traction motors, must be addressed. (0036 0062-1)

*Response: Since the Dulles Corridor Rapid Transit Project proposes only transit improvements, FTA transit noise criteria were used in order to determine the potential for noise impacts.*

### Funding for Noise Abatement

**Public Comment:** I believe the construction of what I would call the Hallcrest Barrier can be achieved within the excess revenues generated each year by the tolls on the Dulles Toll Road, which I understand are about \$12 million. (0036 0062-5)

*Response: Currently, sound barriers are not proposed for the properties along the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets barriers are planned for all aerial Metrorail track sections and five to six-foot parapets are proposed in areas where noise receptors are forecast to exceed FTA criteria under Metrorail operations. The types and location of the proposed mitigation measures are described in Section 4.7 of the Final EIS.*

**Public Comment:** While I understand the constraints of your project budget and available funding for what you propose, I believe that construction of the Hallcrest Barrier can be achieved within the excess revenues generated each year by the tolls from the Dulles Toll Road. Even after including debt service

and operations and maintenance, these annual excess revenues amount to more than \$12 million. (0036 0037-6)

**Response:** *On behalf of the Commonwealth of Virginia, DRPT has the lead in addressing the existing noise effects of the Dulles Connector Road. With respect to the concerns of communities on the noise of the Dulles Connector Road, the Commonwealth of Virginia will seek to address the existing noise effects upon the residential communities with noise abatement measures. If the Commonwealth decides to proceed with noise abatement measures, it would bear most of the cost of the abatement, since this is an existing condition due mainly to traffic to and from the Dulles Toll Road. The project itself would share in the cost of abatement proportional to the project's contribution to the future levels of noise and to its visual effects. There will be coordination among DRPT, VDOT, WMATA, MWAA, FAA, Fairfax County officials and staff, and representatives of the affected communities.*

### **Multiple Benefits from Sound Abatement Walls**

**Public Comment:** While your report (in Section 4.7.3) speaks of "temporary noise barriers" being erected during construction, I would urge that a coordinated agency mitigation effort result in a significant barrier before construction to mitigate construction noise, operating noise and the visual impact all at once. (0036 0037-5)

**Public Comment:** We do not oppose the construction of the Rapid Transit Project, but we do to the increased burden it's construction will place on those of us who are directly adjacent to the project, that the WMATA should place a high priority on protecting homeowners from adverse environmental impacts both during the construction of the Rapid Transit Project and after the construction has been completed and the trains are running. In our opinion an environmental wall would be a the major solution to our concerns. Such a wall would alleviate three of our major concerns, noise, light and visual impact. (0081 0096-1)

**Response:** *Currently, sound barriers are not proposed for the properties along the Dulles Connector Road or Dulles Toll Road as part of the Project. Three to four-foot parapets barriers are planned for all aerial Metrorail track sections and five to six-foot parapets are proposed in areas where noise receptors are forecast to exceed FTA criteria under Metrorail operations. The types and location of the proposed mitigation measures are described in Section 4.7 of the Final EIS.*

**Public Comment:** In our opinion an environmental wall would be the major solution to our concerns. Such a wall would alleviate three of our major concerns, noise, light, and visual impact. (0081 0107-2) (0100 0116-2) (0101 0118-2) (0127 0162-2)

**Public Comment:** In our opinion an environmental wall would be the major solution to our concerns. Such a wall would alleviate three of our major concerns, noise, light, and visual impact. (0124 0159-2) (0125 0160-2) (0126 0161-2) (0128 0163-2) (0129 0164-2) (0133 0172-2)

**Response:** *Three to four-foot parapet barriers are planned for all aerial Metrorail guideway sections. Five to six-foot parapets are proposed in areas adjacent to noise receptors that were forecast to exceed FTA noise criteria under Metrorail operations. The recommendation for five to six-foot parapets was based on the projected need for additional noise reductions, which would bring levels below the FTA impact criteria.*

### **Noise Abatement not Necessary**

**Public Comment:** Sound barriers are a negative idea. People offended by present highway noise must not be allowed to load up MetroRail with sound barriers that will reflect noise back into the cars full of people. This argument came up at West Falls Church on Highway I-66. There was noise allright, but it was highway noise. I went out there one night at midnight when civic noise is low and listened. I never

heard a train go by in the median. I am not referring to the yard tracks. I could not hear most automobiles either, but illegal trucks and souped up cars were very noisy. If traffic were heavier, traffic would make more noise. Electric rail transit on welded rail should not be heard. On a curve, perhaps a sound barrier four feet high may be necessary, but no higher. It reflects noise back into the car close by. If the highway needs sound barriers, so be it. Put them at the edge of the right-of-way. Do not box the trains in. That will not attenuate highway noise, the source of the complaint. (0054 0090-2)

**Response:** *Currently, sound barriers are not proposed for the properties along the Dulles Connector or the Toll Road as part of the Project. Three to four-foot parapets barriers are planned for all aerial Metrorail track sections and five to six-foot parapets are proposed in areas where noise receptors are forecast to exceed FTA criteria under Metrorail operations. The types and location of the proposed mitigation measures are described in Section 4.7 of the Final EIS.*

### Alternative Methods of Sound Abatement

**Public Comment:** To remain positive and helpful, let me call your attention to a recent Washington Post article of the Koolhaas design for the Green Line of the Chicago Transit Authority's elevated track section through the Illinois Institute of Technology. In a giant leap forward in noise mitigation, they propose putting the elevated service in an imaginative steel and concrete tube. (0036 0037-7)

**Response:** *The Dulles Corridor Rapid Transit Project will utilize parapet barriers to reduce noise impacts on aerial guideway sections. Noise mitigation features such as those described by the commenter are proposed for the West Falls Church Yard.*

**Public Comment:** Metro might be responsible for the impact it creates if our current forestation were demolished, as will be required for the construction of the storm water best management practice pond. This individual did state that WMATA engineers would do their best to minimize the size of the storm water retention pond; however current plans and drawings still call for approximately one acre of my property to be acquired. If the present-day mature forestation is torn down, in my opinion Metro has to be responsible for the noises. The trees are the only sound and visual barrier at this time. (0116 0141-3)

**Response:** *The Final EIS does not project any Project-related noise impacts associated with development of storm water ponds.*

### Construction Related Noise

**Public Comment:** We are very concerned about potential noise levels relating to construction, should the above referenced project go forward. We are a residential community that would suffer adversely from both construction noise (especially if it were to occur during off-hours) and the compounding of already significant traffic noise. (0014 0015-3)

**Response:** *During construction, DRPT would comply with noise limits established by FTA and WMATA guidelines, federal law (for Wolf Trap Farm Park), and time-of-day restrictions specified in local noise ordinances. If necessary, temporary mitigation measures will also be employed.*

### More Study and Analysis Needed

**Public Comment:** Mr. Dittmeier we have lived here for 30 years and went through this process before, during and after the Dulles Corridor was constructed. The planners and those that worked out the detailed projections of impact on our community are no longer around to answer for their errors or miss calculations. I hope we can do a better job with this project. It might help to understand our concern if the present noise/pollution data were compared with the earlier data collected when the original corridor was being proposed and constructed. (0003 0013-3)

**Response:** *The Project Team has reviewed the earlier studies as part of the background research for our analysis.*

**Public Comment:** We request the following additional study and mitigation: More study of the adequacy of proposed noise mitigation measures. (0087 0102-5) (0089 0104-5) (0099 0115-5) (0104 0121-3)

**Response:** *The Project Team evaluated the potential for noise and vibration impacts and provided recommendations on potential mitigation strategies to avoid significant impacts. Proposed mitigation is presented Section 4.7 of the Final EIS. Parapets (or track edge barriers) would assist in shielding new noise from Metrorail trains along aerial (above-ground) sections of track. At those locations where exceedances of the FTA criteria are predicted, higher parapets (five to six-feet) are proposed to minimize the predicted Project-related impacts.*

**Public Comment:** Our neighborhood conducted an independent study, sound study, in July 2002. Our findings did differ greatly from the 63 decibels measured at a single home by the initial task force. The average of 70 to 71 decibels of which we obtained in our neighborhoods is in the severe impact zone already established by the FTA. Sustained decibel readings greater than 80 decibels were obtained both in the morning and evening rush hour times. These data did not make it into the draft EIS. (0116 0141-2)

**Response:** *Based on the FTA methodology for analysis of noise associated with transit projects, the existing day-night (24-hour Ldn) noise level is used to determine what additional noise can be added before an impact is predicted in association with the proposed Project. Using an existing level of 63 decibels (which is what the Project Team measured as the 24-hour day-night noise level) was appropriate for this methodology. The existing level is used in order to determine what additional noise can be added before impact criteria are exceeded and mitigation is considered.*

### **Joint Agreement on Noise Abatement**

**Public Comment:** This project should not be permitted to move forward without a mutually agree upon noise abatement plan between WMATA, VDOT, and our neighborhood. How can WMATA and VDOT continue to dodge responsibility for the highway noise problem and at the same time allow this project to move forward? (0116 0141-4)

**Response:** *On behalf of the Commonwealth of Virginia, DRPT has the lead in addressing the existing noise effects of the Dulles Connector Road. With respect to the concerns of communities on the noise of the Dulles Connector Road, the Commonwealth of Virginia will seek to address the existing noise effects upon the residential communities with noise abatement measures. If the Commonwealth decides to proceed with noise abatement measures, it would bear most of the cost of the abatement, since this is an existing condition due mainly to traffic to and from the Dulles Toll Road. The Project itself would share in the cost of abatement proportional to the Project's contribution to the future levels of noise and to its visual effects. There will be coordination among DRPT, VDOT, WMATA, MWAA, FAA, Fairfax County officials and staff, and representatives of the affected communities.*

## **4.8 Vibration**

### **A. Draft EIS Comments**

#### **State Agency Comments**

#### **Locations and Methods for Mitigating Vibration Impacts from Metrorail Extension**

**State Comment:** The first sentence on page 93 [of the Noise and Vibration Technical Report] incorrectly states, "While vibration criteria are generally used to assess annoyance from transit sources at the exterior façade of receptors, ground-borne noise, or the rumbling sound due to vibration room surfaces, is typically assessed indoors." In fact, both ground-borne vibration and noise effects are assessed indoors.

\* Section 4.8.2 should be more specific with regard to the locations and proposed methods for mitigating

vibration impacts from Metro rail operations. In addition to the potential measure listed, the use of spring rail or moveable point frogs at crossover locations should also be considered. (0421, 0421-A -12)

**Response:** *To clarify, all ground-borne vibration and noise levels from Metrorail passbys were evaluated against the FTA and the WMATA impact criteria at the exterior façade of receptors (i.e., the closest distance between the receptor and the project alignment). Unlike environmental noise, which is typically evaluated outdoors, ground-borne vibration and noise are evaluated indoors where vibration levels from transit passbys are most pronounced.*

#### **B. Supplemental Draft EIS Comments**

No comments pertaining to this topic were received.

### **4.9 Hazardous and Contaminated Materials**

#### **A. Draft EIS Comments**

##### **State Agency Comments**

##### **Draft EIS Identification of 34 Sites Not Identified in the Environmental Database Search Results**

**State Comment:** Solid and Hazardous Waste Management. Soil suspected of contamination, and wastes that are generated, must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations, including but not limited to the Virginia Waste Management Act (Virginia Code sections 10.1-1400 et seq.), the Virginia Hazardous Waste Management Regulations (9 VAC 20-60 et seq.), and the Virginia Solid Waste Management Regulations (9 VAC 20-80 et seq.). (See the attached comments from DEQ's Waste Division, Office of Remedial Programs.) According to DEQ's Northern Virginia Regional Office, the Draft EIS mentions the identification of 34 contamination sites that were not identified in the Environmental Database Search results. We recommend that these sites be discussed with that Office. (0407, 0407-A -19)

**State Comment:** Section 4.9 discusses field reconnaissance done in the study area and the identification of thirty-four (34) sites that were not identified in the Environmental Database Search results. Will these sites be discussed with DEQ? (0407, 0407-A -38)

**Response:** *The Project Team will coordinate with the VDEQ Northern Virginia Regional Office regarding the potential contamination sites that were identified by the Project Team and not included in the Environmental Database Search results. This coordination will take place during preliminary engineering.*

##### **Guidance on Demolishing Buildings With Asbestos or Lead-Based Paint**

**State Comment:** As mentioned above and in the Draft EIS, the structures to be demolished as part of this project have not yet been checked for the presence of asbestos-containing materials or lead-based paint. The following guidance pertains in the event either of these substances is found.

- (a) Asbestos Abatement. If asbestos-containing materials (ACM) are found, following their classification as friable or non-friable, all waste ACM shall be disposed of in accordance with the Virginia Solid Waste Management Regulations (9 VAC 20-80-640), and transported in accordance with the Virginia regulations governing Transportation of Hazardous Materials (9 VAC 20-110-10 et seq.). The project manager should contact the DEQ Waste Management Program and the Department of Labor and Industry for additional information.
- (b) Lead-Based Paint. The project must comply with the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) regulations, and with the Virginia Lead-Based Paint Activities

Rules and Regulations. For additional information regarding these requirements, the project manager should contact the Department of Professional and Occupational Regulation.

- (c) Air Quality Regulation. As indicated above, heating units may require new source review or operating permits from DEQ. In addition, open burning activities may require an open burning permit. Questions on these matters, and inquiries about time-of-year restrictions on the use of cut-back asphalt, may be directed to DEQ's Northern Virginia Regional Office. (0407, 0407-A – 20)

**Response:** *Prior to demolition of any building, a survey is required by a Virginia licensed asbestos inspector and Virginia licensed lead-based paint inspector. Demolition of buildings or structures involving regulated asbestos and lead-based paint would be carried out using appropriate procedures and disposal practices, including the Federal Lead Exposure in Construction Standard, the Virginia Solid Waste Management Regulations, and the National Emission Standard for Hazardous Air Pollutants.*

### **Disposal of Contaminated Soil Consistent with Federal, State and Local Laws**

**State Comment:** Since this project may involve construction, any soil that is suspected of contamination or wastes that are generated must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. Some of the applicable state laws and regulations are: Virginia Waste Management Act, Code of Virginia Section 10.1-1400 et seq.; Virginia Hazardous Waste Management Regulations (VHWMR) (9VAC 20-60); Virginia Solid Waste Management Regulations (VSWMR) (9VAC 20-80); Virginia Regulations for the Transportation of Hazardous Materials (9VAC 20-110). Some of the applicable Federal laws and regulations are: the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Section 6901 et seq., and the applicable regulations contained in Title 40 of the Code of Federal Regulations; and the U.S. Department of Transportation Rules for Transportation of Hazardous Materials, 49 CFR Parts 107,171.1-172.558. (0407, 0407-A –31)

**Response:** *Information regarding the appropriate disposal methods and safety precautions associated with these substances will be provided in the Hazardous Materials Management Plan developed prior to any construction activities.*

**State Comment:** Hazardous and solid waste issues and sites were addressed in the report. The central office of the Waste Division did a cursory review of its data files and did not find any additional sites that might impact this project. (0407, 0407-A –30)

**Response:** *Thank you for your input.*

**State Comment:** The report states that structures to be demolished have not been checked for the presence of asbestos-containing materials (ACM) or lead-based paint (LBP). They should be checked and if LBP or ACM are found, in addition to the Federal waste-related regulations, State regulations 9VAC 20-80-640 for ACM and 9VAC 20-60-261 for LBP must be followed. (0407, 0407-A –32)

**Response:** *Prior to demolition of any building, a survey is required by a Virginia licensed asbestos inspector and Virginia licensed lead-based paint inspector. Demolition of buildings or structures involving regulated asbestos and lead-based paint would be carried out using appropriate procedures and disposal practices, including the Federal Lead Exposure in Construction Standard, the Virginia Solid Waste Management Regulations, and the National Emission Standard for Hazardous Air Pollutants.*

**State Comment:** Finally, pollution prevention was not addressed in the report. VDEQ encourages all construction projects and facilities to implement pollution prevention principles, including the reduction, reuse, and recycling of all solid wastes generated. (0407, 0407-A –33)

**State Comment:** DEQ encourages the project manager to reduce solid waste at the source, re-use materials, and recycle wastes to the maximum extent practicable. The Draft EIS did not address pollution prevention, according to DEQ's Waste Division. (0407, 0407-A -5)

**Response:** *Pollution prevention for solid waste generated as a result of construction activities will be addressed in the Hazardous Materials Management Plan to be developed prior to any construction activities.*

**State Comment:** Solid and Hazardous Waste Management. DEQ's Division of Waste Program coordination, Office of Remedial Programs (hereinafter "DEQ's Waste Division") did a cursory review of its data files and did not find any contamination sites that might affect, or be affected by this project. The Draft EIS addressed hazardous and solid waste issues (pages 4-170 through 4-184, section 4.9). (0407, 0407-A -4)

**Response:** *Comment noted.*

**State Comment:** Hazardous Contamination Materials Technical Report (June 2002) \* No additional comment since the review comments of the 95% Draft EIS, on 3/10/02 (0421, 0421-A -9)

**Response:** *Comment noted.*

**State Comment:** Integrate pollution prevention techniques into facility maintenance and operation, to include the following: inventory control (record-keeping and centralized storage for hazardous materials), product substitution (use of non-toxic cleaners), and source reduction (fixing leaks, energy-efficient HVAC and equipment). Maintenance facilities should be designed with sufficient and suitable space to allow for effective inventory control and preventive maintenance. (0407, 0407-A -17)

**Response:** *Comment noted.*

### **Local Agency Comments**

#### **Coordinate Hazardous Materials Management Plan with Fairfax County Fire and Rescue Department**

**Local Comment:** Preparation of the project's Hazardous Materials Management Plan should be coordinated with the County's Fire and Rescue Department. (0479, 0479-L -6)

**Response:** *Preparation of the Hazardous Materials Management Plan will be coordinated with the County's Fire and Rescue Department, as requested. Preparation of this plan will not take place until all environmental documentation is complete.*

### **Public Comments**

#### **Project Impacts or Asbestos and Groundwater**

**Public Comment:** There are community questions regarding projection of residents and commuters during construction from naturally occurring asbestos around Hunter Mill Road. Many residents around Hunter Mill Road are on wells. The EIS discussion is on surface water. What will happen to ground purity, groundwater purity? (0179, 0179-T -9)

**Public Comment:** There are environmental concerns regarding the naturally occurring asbestos in old service tanks and it is unclear how the communities in near proximity will ultimately be impacted. Additionally, it appears that new soil test have been performed. (0150, 0150-T-7)

**Response:** *A Fairfax County Report entitled Control and Prevention of Asbestos Exposure from Construction in Naturally Occurring Asbestos (January 1993) states, "In an undisturbed natural*

*environment, these fibers [naturally occurring asbestos] are locked in place within the rock and represent no health hazard.” Asbestos fibers are not soluble in surface or ground water and therefore, would not pose a threat to surface or groundwater resources.*

*Prior to implementing any soil disturbance activities in areas that may contain naturally occurring asbestos minerals, a compliance plan would be prepared and submitted to the Fairfax County Health Department for review and approval.*

## **B. Supplemental Draft EIS Comments**

### **State Agency Comments**

#### **Compliance with Applicable Regulations**

**State Comment:** Soil suspected of contamination, and wastes that are generated, must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations. (0080 0094-12)

**State Comment:** As we stated in our reply to the Draft EIS, dated August 27, 2002 (DEQ-02-124F, page 9, item 11), DEQ advocates that principles of pollution prevention be used in all construction projects as well as in facility operations. Effective siting, planning, and on-site Best Management Practices (BMPs) will help to ensure that environmental impacts are minimized. (0080 0094-9)

**State Comment:** If asbestos-containing materials (ACM) are found, following their classification as friable or nonfriable, all waste ACM shall be disposed of in accordance with the Virginia Solid Waste Management Regulations (9 VAC 20-80-640), and transported in accordance with the Virginia regulations governing Transportation of Hazardous Materials (9 VAC 20-110-10 et. seq.). (0080 0094-13)

**State Comment:** The project must comply with the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) regulations, and with the Virginia Lead-Based Paint Activities Rules and Regulations. (0080 0094-14)

**State Comment:** Pollution prevention was not addressed in the SDEIS. DEQ encourages the proponents to implement pollution prevention principles, including the reduction of solid wastes at the source, re-use of materials, and recycling of waste materials. (0080 0094-3)

***Response:** Comment noted. All Project activities will be completed in accordance with relevant federal, state, and local laws and regulations and accepted Best Management Practices.*

## **4.10 Energy**

### **A. Draft EIS Comments**

No comments pertaining to this topic were received.

### **B. Supplemental Draft EIS Comments**

#### **Public Comments**

#### **Documentation of Energy Analysis**

**Public Comment:** The Supplemental Draft Environmental Impact Statement is in error when it says that Dulles Rail in opening year will increase energy usage 0.31% over No Build and +3.7% when completed. The SDEIS estimate the elimination of 214,500,000 vehicle miles traveled in opening year and 257,400,000 VMT when completed. This is in scale with 53,600 initial passengers on Dulles Rail and 86,900 when completed. At 22 miles per gallon, 9.7 million gallons will be saved the first year and 11.2

million gallons when completed. To run the trains, you need only 36 million kilowatt hours if energy will be added, equal to only 2,500,000 gallons of gasoline. The energy usage shall go down 63 percent for the specific people involved. We should save \$11 million a year on use of foreign oil refined into gasoline. (0054 0055-1)

**Response:** *The energy analysis was conducted according to FTA guidance for the determination of energy effects. Your analysis suggests that energy savings due to the Project will be much greater than estimated in the Supplemental Draft EIS and Final EIS.*

**Public Comment:** The SDEIS envisions energy usage that would increase by only 1.6% with a Phase 1 project. An objective and adequate source generation analysis needs to be conducted and presented. The data needs to be re-evaluated and defensibly explained in a manner that accounts for the incremental energy expenditure at coal-fired power plants that are used to provide the source of power for Metrorail trains – i.e., electricity from coal-burning power plants. Such power is referred to as source-generation and needs to be factored into a meaningful environmental impact statement. (0068 0173-32)

**Response:** *Project Team utilized methodologies consistent with that described in the FTA's Reporting Instructions for the Section 5309 New Starts Criteria (April 2004). The methodology used to assess the energy consumption impacts of the Project is outlined in the FHWA report entitled Energy and Transportation Systems (July 1993) and in the Energy and Transportation Manual (Caltrans 1983). See Section 4.10 of the Final EIS for the discussion on energy impacts.*