

## Technical Memorandum Update

### Appendix 6 Noise and Vibration

Since the completion of the Noise and Vibration Technical Memorandum in November 2006 (see Appendix 6 of the 2007 Approved Documented CE on attached CD), the proposed transit corridor has been modified along Segment E. Whereas the previous two-way transit alignment followed Clark and Bell Streets, the modified alignment is a one-way pair with southbound service along Clark and Bell Streets and northbound service along Crystal Drive between 26<sup>th</sup> Street and 15<sup>th</sup> Street. Note that the project alignment for the entire corridor is shown in Figure 1: Modified Alignment and CCPY Improvements (Appendix 1 of the current CE Update). Attachment Part A of the Documented CE Update document is a detailed description of the transit alignment in each segment.

Based on the background noise measurements conducted along the proposed corridor in 2006, ambient noise levels particularly along Crystal Drive are dominated by existing roadway traffic, CSX freight, Virginia Railway Express (VRE) commuter rail trains and aircraft operations at Ronald Reagan Washington National Airport. As a result, the types of noise-sensitive land uses along the proposed corridor alignment include primarily mixed-use residential apartment buildings typical of downtown urban landscapes. With the exception of parks, most noise-sensitive activities occur indoors.

Based on the original operating plan, noise levels associated with the proposed transit improvements in 2030 were predicted to equal the Federal Transit Administration's (FTA) "moderate" impact criteria for a mixed-use residential apartment building along Crystal Drive. However, there are no exterior land uses (such as yards) at this urban location, thereby minimizing the potential for impact. For interior land uses, the outdoor-to-indoor transmission loss of the newly constructed building is expected to provide 20-30 dBA noise reduction thereby further reducing the potential for impact. As a result, no impacts are predicted at any residential land uses along the re-aligned project corridor due to the proposed transit improvements.

The new alignment, however, will pass adjacent to the Crystal City Water Park and a park on the east side of Crystal Drive between 20<sup>th</sup> and 23<sup>rd</sup> Streets, both privately-owned public open spaces. While there is potential for transit vehicles to create an impact, the degree of impact is not expected to be severe due to the high ambient noise levels in the area. Furthermore, vehicle dwell times and idling will be limited as the buses will only stop briefly to pick up/drop off passengers. No other noise impacts are predicted along the realigned project corridor.

No exceedances of the FTA vibration impact criteria are predicted as a result of the project changes described in the CE Update.

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