CONSTRUCTION VIBRATION MONITORING SUMMARY REPORT

OCTOBER 1- OCTOBER 31, 2015

VIRGINIA AVENUE TUNNEL RECONSTRUCTION PROJECT
WASHINGTON, DC

Prepared for:
CSX Transportation

Prepared by:
Gannett Fleming Inc.

October 2015

VIRGINIA AVENUE TUNNEL RECONSTRUCTION
Construction Vibration Monitoring Summary

Gannett Fleming Inc. (GFI) has prepared this vibration monitoring report as part of the ongoing efforts to comply with the commitments presented in the Virginia Avenue Tunnel Reconstruction Final Environmental Impact Statement (FEIS) and Section 4(f) Evaluation (May, 2014) and further detailed in the Record of Decision (ROD), November, 2014. CSX Transportation, the project sponsor, has agreed to a number of environmental commitments as mitigation for environmental impacts that will result from the Virginia Avenue Tunnel Reconstruction Project. The commitments are divided between those related to construction of the Project and those related to the restoration of affected areas upon project completion of the Selected Alternative. These environmental commitment measures are mitigations which avoid the impact altogether by not taking a certain action or parts of an action; minimize impacts by limiting the degree or magnitude of the action and its implementation; rectify the impact by repairing, rehabilitating, or restoring the affected environment; reduce or eliminating the impact over time by preservation and maintenance operations during the life of the action; or compensate for the impact by replacing or providing substitute resources or environments. This construction vibration monitoring summary report is intended to fulfill aspects of the vibration monitoring commitments contained in the ROD for the Virginia Avenue Tunnel reconstruction.

The Project Team has installed perimeter vibration monitoring stations adjacent to various buildings within the Project limits. These monitoring stations are intended to monitor construction vibration associated with the Project. Construction vibration will be monitored throughout the Project's construction period. Sophisticated monitoring devices have been installed at eight locations to ensure the construction activities are performed in compliance with the permitted vibration levels. The monitoring devices will record the vibration level and automatically report the data back to the Project Engineers.

Methodology of Construction Vibration Monitoring

Construction vibration level data was collected for the reporting period October 1 – October 31, 2015. Eight fixed vibration monitoring locations have been measured continuously to monitor vibration levels since the beginning of major construction activities in May 2015. Vibration level data was collected every minute for the duration of the vibration monitoring period. The locations of the monitoring stations are depicted in Figure 1 and the addresses described in Table 1.

Figure 1. Vibration Monitoring Locations

Table 1. Vibration Monitoring Locations Description

Site ID	Vibration Monitoring Location
V1	West of New Jersey Avenue SE
V2	Corner of 3rd Street and Virginia Avenue SE
V3	Between 3rd Street and 4th Street SE, in front of Townhomes
V4	Corner of 4th Street SE and I Street SE
V5	Corner of 5th Street and Virginia Avenue SE, in front of Capper Senior Apartments
V6	Adjacent to fence of Marine Corps Recreational Facility on 6th Street SE
V7	In front of Building on 7th Street SE
V8	Corner of 10th Street SE and L Street SE

Vibration Data Summary Charts

Table 2 presents the results of the maximum vibration levels measured during the month of October 2015 and shows how the measured levels compare to the established vibration criteria. The average daily vibration level results are plotted in Figure 2.

Table 2. Construction Vibration Monitoring Results – October 2015

Site ID	Vibration Monitoring Location	Construction Monitoring		
		Max. Lv (VdB)	Criteria[a,b] (VdB)	Exceedance (Yes/No)
V1	West of New Jersey Avenue SE	94	102[c]	No
V2	Corner of 3rd Street and Virginia Avenue SE	98	102[c]	No
V3	Between 3rd Street and 4th Street SE, in front of Townhomes	97	98[d]	No
V4	Corner of 4th Street SE and I Street SE	88	90[e]	No
V5	Corner of 5th Street and Virginia Avenue SE, in front of Capper Senior Apartments	91	94[f]	No
V6	Inside the fence of Marine Corps Recreation Facility on 6th Street SE	90	94[f]	No
V7	In front of Building on 7th Street SE	89	94[f]	No
V8	Corner of 10th Street SE and L Street SE	88	94[f]	No

a. Federal Railroad Administration (FRA). *CREATE Noise and Vibration Assessment Methodology*. December 2007.
b. Federal Transit Administration (FTA). *Transit Noise and Vibration Impact Assessment*. U.S. Department of Transportation Report No. FTA-VA-90-1003-06, May 2006.
c. Reinforced concrete, steel or timber (no plaster) buildings
d. Engineered concrete and masonry (no plaster) buildings
e. Buildings extremely susceptible to vibration damage
f. Non-Engineered timber and masonry buildings

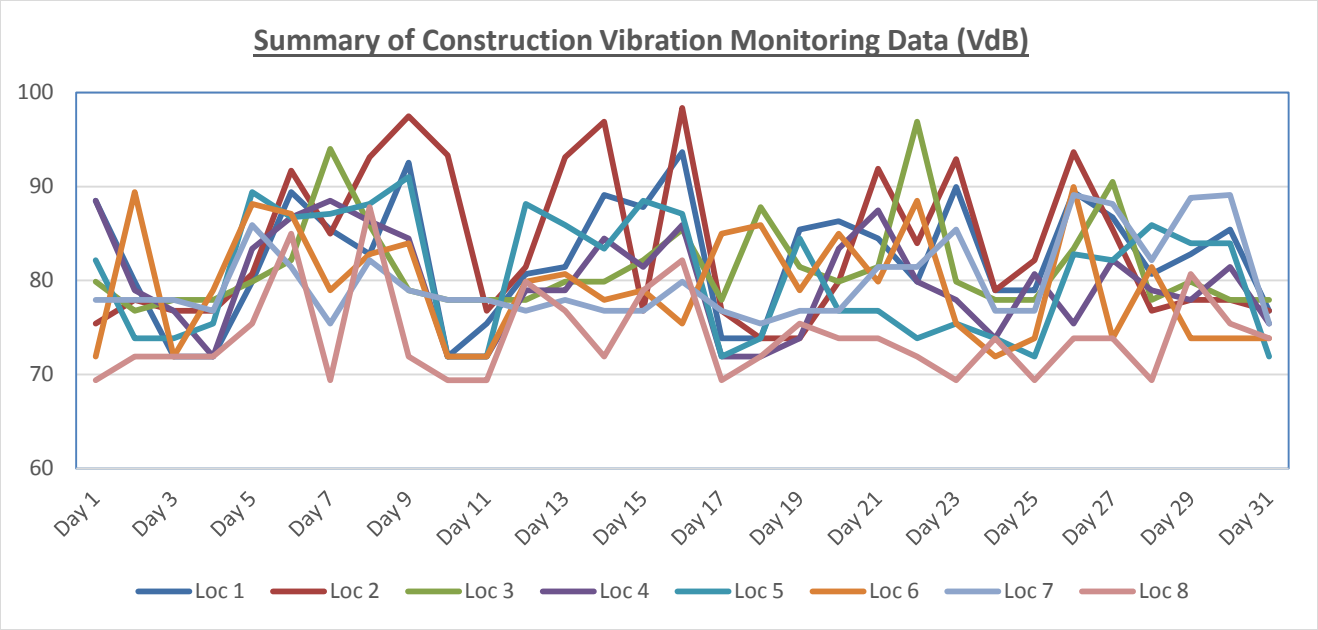

Figure 2. Summary of Construction Vibration Monitoring Data (VdB) – October 2015