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August 14, 2014

Mr. Joseph C. Lawson, email: Christopher.lawson@dot.gov
Division Administrator
Federal Highway Administration
DC Division
1990 K Street, NW, Suite 510
Washington, DC 20006-1103

Subject: Comments on the Final Environmental Impact Statement for Reconstruction of the Virginia Avenue Tunnel

Dear Mr. Lawson:

The Capitol Hill Restoration Society (CHRS) hereby submits comments to the Final Environmental Impact Statement (FEIS) regarding the Reconstruction of the Virginia Avenue Tunnel (VAT/project). CHRS submits these comments by the extended deadline of August 14, 2014, as announced by government representatives at the public meeting on July 31, 2014. CHRS is submitting separate comments under Section 106 of the National Historic Preservation Act.

Summary

CHRS continues to support Alternative 1, No-Build, and is very disappointed that Alternative 3 was selected as the Preferred Alternative. We continue to believe that there are better options for passenger and freight rail service, and for the city, than enlarging the VAT. Unlike many cities and states, DC does not have a comprehensive rail transportation plan. To remedy this, the Council's DC budget for fiscal year 2015 includes $500,000 to produce a comprehensive rail plan for the District, including plans to accommodate future increases in passenger, commuter, and freight rail traffic (DC Rail Plan). No Record of Decision (ROD) should be issued until the DC Rail Plan is completed and presented to the Council and the public for comment.

(1) The FEIS fails to respond adequately to CHRS's comments on the DEIS

The responses to CHRS's comments in Vol. 4, Appendix L (#18) fail to address adequately many issues that CHRS raised concerning the build alternatives. The responses generally repeat and rely on the flawed data and analysis carried over from the Draft Environmental Impact Statement (DEIS) to the FEIS.

Air quality
CHRS DEIS comments, pp. 3-4, Response 18-2 (p. L-79)
Response 18-2, relying on FEIS 5.15.1, states that the build alternatives "will reduce the number of intermodal freight trains passing through the District when compared to the no build condition." While it is true that a train carrying double-stacked containers can transport more containers than a single-stacked train, this misses the point entirely. The increase in freight will translate into more trains and higher emissions. In addition, CSX does not transport only intermodal containers but also uses other types of rail cars, including tank cars carrying Bakken crude oil.

As we pointed out in our comments on the DEIS, increased CSX emissions are only one part of likely increases in emissions. CSX requires that Amtrak and MARC also use diesel locomotives on CSX tracks in DC. These rail lines also project an increase in traffic, which will further increase diesel emissions on Capitol Hill. Response 18-2 and the FEIS fail to address the effect on air quality from these additional sources of emissions.

FEIS 5.5.1, pp. 5-18-5-19 states that the Limits of Disturbance (LOD) is already at nonattainment (marginal) for ozone and nonattainment for small particulate matter PM 2.5. Increased emissions from diesel locomotives and construction equipment will increase these pollutants.

Noise
CHRS DEIS comments, p. 4
Response 18-3 (p. L-80) and the FEIS continue to indicate that noise levels during construction are predicted to exceed RCNM noise levels at several points, including Capper Senior Apartments (an environmental justice population of low-income seniors) and the 300 and 400 block of Capitol Quarter houses. FEIS 5.6.2, pp. 5-26-31. While we appreciate the commitment to noise monitoring, the availability of the data in real time and online should be required.

Vibration
CHRS DEIS comments pp. 4-5
Response 18-4 and the FEIS respond to some of the issues raised by CHRS. Vibration monitoring is a positive step. Again, data should be available in real time. Please see additional comments below.

Safety and security - hazardous cargo
CHRS DEIS comments p. 5-6.
Response 18-5 continues to evade the safety issue of transporting hazardous materials through the city (i.e., any materials that can explode or burn, such as Bakken crude).

Effects on wildlife
CHRS DEIS comments, pp. 6-7
Response 18-6 does not respond to the issues raised by CHRS. An acknowledged loss of habitat, including over 400 trees, is very likely to cause mortality in species of greatest conservation need. Response 18-6 fails to specify "the analysis available to us" supporting this position.

Traffic
CHRS DEIS comments, p. 8
If Alternative 3 goes forward, we hope that the process promised in Response 18-7 will be followed.

Parks
CHRS DEIS comments, pp. 8-9
While it is helpful to know that that there are plans to secure the park, and that the Virginia Avenue Park will not be used for staging construction equipment for the entire project, Response 18-8 fails to state what equipment and materials will be stored at the park, and whether they may be hazardous to people or pets.

Parking
CHRS DEIS comments, p. 9
Response 18-9 fails to respond to the serious parking issues that CHRS raised: paying a fee to DDOT for lost spaces or trying to prevent construction workers from parking on public streets, does not address the already-serious parking problem in the area. At the July 1, 2014 public meeting, in response to questioner #8, there was an indication that CSX may provide additional parking. Details on this are needed.

Potential damage to buildings in the Capitol Hill Historic District
CHRS DEIS comments, p. 10
The process outlined in FEIS 5.7.4 is a step in the right direction, and we look forward to seeing the details. We request that, if possible, the surveys, claims, and resolution of claims be posted on the project's website. Response 18-11.

Streetscape - tree loss
CHRS DEIS comments, p. 10-11
Key steps that we mentioned to try to compensate for the loss of trees are omitted: the soil (which will be 100 percent replacement soil) must be certified by Urban Forestry Administration (UFA) as suitable to sustain healthy trees, and CSX must pay to water all new trees for the first two years. To rectify this devastation it is completely unacceptable to state that "The project team may also partner with other organizations to assist in tree planting and maintenance of planted trees." Response 18-12, emphasis added. Again,

UFA must be in charge of this entire effort (and not just coordinated with). However, aspects of Response 18-13 are a step in the right direction.

(2) The FEIS contains serious errors in scope, data, and analysis leading to invalid findings

Noise

At the public meeting on July 1, 2014, several residents expressed concerns about construction period adverse effects on children. As noted, we appreciate the commitment to pre-construction planning and to noise monitoring during construction. However, the FEIS fails to state which agencies will have access to noise monitoring, whether access will be in real time, or what actions will be required if noise monitoring reveals noise levels exceeding the limits, and who will make those decisions. The public is entitled to access to noise level readings in real time and online, but there is no commitment to do this. Further, there is no commitment to implement any of the mitigation measures listed on pp. 5-35-36, only an open-ended statement that these measures "could" reduce the amount of noise and are believed to be reasonable and feasible. FEIS 5.6.4, pp. 5-35-36.

As we pointed out in our DEIS comments, there is no ongoing need for the VAT: CSX has no District customers. In addition, the DC Rail Plan may conclude that to accommodate expected increases in rail and passenger operations, separating passenger and freight rail should be pursued, in which case there would be no need for the VAT. For these reasons, it is misleading to refer to any future need to maintain the tunnel, or vibration or noise resulting from such maintenance. FEIS 5.7.2, p. 5-38-40.

Toxic dust

The FEIS identifies over 60 "facilities of concern" that may have polluted the soil or groundwater in the tunnel excavation area. The soil and groundwater in that area are contaminated with polychlorinated biphenyls (PCBs), petroleum hydrocarbons, BTEX compounds (including benzene), metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). FEIS 4.8.2.1, pp. 4-49-54; Appx. G. There is asbestos in the tunnel (8,000 square feet of black felt paper). FEIS 4.8.2,.2, p. 4-54. The FEIS concludes that some chromium levels are comparable to typical background readings, but adds, "Nevertheless, the recorded concentrations of chromium, even if naturally occurring, would be an environmental concern if uncovered." FEIS 4.8.2.2, p. 4-52.

Although FEIS 5.5.4 describes mitigation measures for dust, these appear to be dust-suppression measures designed for removing ordinary soil from a construction site, not for removing contaminated soil, groundwater and asbestos. The FEIS fails to relate the dangers posed by the materials to be removed to specific measures for safe removal of these materials. For example, there is no mention of negative air pressure techniques to remove the asbestos.

If Alternative 3 goes forward, these toxic substances must be removed, excavating to a depth of approximately 35 feet. FEIS Figure 3-18, p. 3-57. Trucks transporting contaminated soil will follow the construction haul route out and pass near homes,

schools [Eagle Academy, two locations, and Van Ness School (to be reopened)], and Garfield Park. See FEIS 3.5.3, p. 3-28, Figure 3-6, p. 3-29 and Figure 4-1, p. 4-3.

Vibration

The FEIS vibration study suffers from serious defects and underestimates the vibration levels, particularly during the months of construction. The FEIS fails to account for vibration from loaded trucks on the haul routes, and also from the calculation of vibration from train pass-bys, and the interaction of train pass-bys with other vibration events.

Vibration from more than 14,000 loaded construction trucks damaging to historic buildings

Fragile historic buildings located on the construction route out can be damaged by vibrations from loaded trucks passing the buildings. Vibration at 90 VdB or higher will cause damage to older fragile buildings. Loaded trucks generate 86 VdB at a distance of 25 feet. As a result, fragile older buildings on the route out will be subject to vibrations at or near the level that causes damage. In addition, some buildings may be closer than 25 feet from a passing loaded truck, or other construction on non-construction-source vibration (e.g., a returning empty truck passing a loaded truck) may push the vibration level above 90 DvB. The FEIS omits vibration data for empty trucks. FEIS Appx. F, Tables 4-2, 5-5; FEIS 3.5.3, p. 3-28, Figure 3-36, p. 3-29; Figure 4-15, p. 4-67; Table 5-14, p. 5-39 (loaded trucks).

There will be approximately 14,800 to 19,600 trucks needed to haul away the material from the existing tunnel.[1] If these dump trucks were spread over the estimated excavation

[1] The existing tunnel partially overlaps the proposed tunnel location. The phasing plans for Alternative 3 suggest that the plan is to leave the north wall of the existing tunnel in place. The FEIS lists the existing tunnel at about 3,800 feet. FEIS 1, p. 1-1.

We do not know how much of the material will be kept on site, at the large staging area at the west end of the project, for reuse as backfill once the tunnels have been installed. To estimate, as much as 50 percent of the excavated soil could remain on site. On the other hand, there is a very good chance that the soil that is removed from the tunnel will be contaminated and not suitable for backfill. FEIS 4.8, pp. 4-47-50. In that case, not only will additional trucks be needed to remove that soil but there will be more trucks at the end of the construction phase to bring in new backfill in the same volume as the retained, essentially double the trucks for that portion of the work.

Estimated need for numbers of truck trips:

(1) *Excavated soil*:
New tunnel: 16 ft depth x 30 ft width x 4,000 ft length = 1,920,000 cu. ft. x 120 lbs/cu. ft. = 230,400,000 lbs, or 115,200 tons
Around existing tunnel: 8 ft depth x 40 ft width x 3,800 ft length = 1,216,000 cu. ft. x 120 lbs/cu. ft. = 145,920,000 lbs, or 72,960 tons above/below. 30 ft depth x 40 ft width x 200 ft length = 240,000 cu. ft. x 120 lbs/cu. ft. = 28,800,000 lbs, or 14,400 tons for the tunnel extension.

(2) *Excavated rock*:
18 ft depth x 8.5 ft. width x 3,800 ft length = 581,400 cu. ft. x 200 lbs/cu. ft. = 116,280,000 lbs, or 58,140 tons for the south wall.

and demolition period, this would mean about 60 trucks a day.[2] This high volume of truck traffic, creating high VdB levels, threatens fragile historic buildings on the haul routes.

Vibration from train pass-bys and other vibration events causing vibration damage

The vibration study and analysis suffer from several shortcomings in method and logic, and fail to reliably predict vibration levels. Key variables affecting the calculation of annoyance and damage from vibration are computed incorrectly: (1) the weight of trains, (2) train speed, (3) the number of train pass-bys, and (4) the interaction between simultaneous train pass-bys, construction vibration, and loaded dump trucks passing empty dump trucks. For these reasons, the area of annoyance to people and the area of potential damage to buildings is certainly larger, and likely much larger, than the FEIS indicates. These defects also cast doubt on the FEIS's conclusions regarding post-construction vibration in FEIS Appx. F, Table 5-6.

(1) Only lighter trains studied to compute vibration

Locomotives, the heaviest element in a train, range between 210 to 216 tons. FEIS Appx. F, p. 2-3. The video shown at the July 31, 2014 public meeting shows a CSX train powered by two locomotives, suggesting that two locomotives is a typical configuration.

The FEIS states that double-stacked intermodal trains are relatively light compared to other trains, at 19 to 22 tons per freight car. Other types of freight cars are much heavier:

- food and food products: 65 tons per freight car
- lumber and wood products: 78 tons per freight car
- grain: 95 tons per freight car
- sand and gravel: 101 tons per freight car
- coal: 116 tons per freight car

FEIS Appx. F, p. 2-3.

Roof: 3ft depth x 30 ft width x 3,800 ft length = 342,000 cu. ft. x 200 lbs/cu. ft. = 68,400,000 lbs, or 34,200 tons.

Total excavation
294,900 tons @ 15 tons per truck = 19,660 trucks if all excavated material is removed from the site
Backfill: 30 ft depth x 10 ft width x 4,000 ft length = 1,200,000 cu. ft. x 120 lbs/cu. ft. = 144,000,000 lbs, or 72,000 tons
72,000 tons @ 15 tons per truck = 4,800 trucks that would not be required if the backfill is stored on site, or 4,800 additional trucks that would be required to bring fresh backfill if the current soil is inadequate.

This calculation yields a total range of between 14,800 and 19,660 trucks for the excavation period.

[2] The FEIS estimates the time to excavate the new tunnel at six to eight months and time to demolish the existing tunnel at two to three months (FEIS, pp. 3-19 and 3-21) for a total of about 10 months or 300 days. If the dirt and stone removal were evenly spaced over that 10 month period, this would mean 50-65 dump truck round trips a day.

The FEIS states, "Freight trains comprised of double-stacked intermodal containers will weigh less than many of the current trains utilizing the Virginia Avenue Tunnel." FEIS Appx. F, p. 2-3. CSX hauls other types of freight cars through the city, presumably heavier than intermodal containers, including tankers carrying Bakken crude. The FEIS acknowledges that a heavier train traveling at the same speed as a lighter train produces higher vibration levels. FEIS Appx. F, p. 2-3. But the DEIS and FEIS model only the lighter single-stacked trains. As a result, the vibration studies must understate the amount of vibration during construction and post-construction, and cannot be relied upon.

(2) Train speeds at 25 mph (or possibly 40 mph) allowed during Alternative 3 construction likely to increase vibration

The FEIS acknowledges that higher speeds increase vibration levels. FEIS Appx. F, p. 2-3. The 2012 vibration study of train pass-bys measured trains traveling between 12 and 20 mph. DEIS, Appx. F, pp. 11-12.[3] However, speeds up to 25 mph will be allowed through the VAT during construction, and although not totally clear, speeds up to 40 mph may be allowed during phases of the construction of Alternative 3. FEIS, S7.3, S-33, Q-18; Table 3-2, 3.4.1, p. 3-6.

(3) Number of train pass-bys and vibration events to likely increase during construction

CSX currently runs between 20 trains and 30 per day through the city. FEIS 2.2, p. 2-7. Freight tonnage nationwide is expected to increase after 2010 by 1.6 percent per year. The construction period for Alternative 3 will also coincide with the expected increase in intermodal freight through the Panama Canal, beginning in 2015. CSX anticipates carrying an increased amount of freight through its network, which includes DC. FEIS 2.2, p. 2-5-7; Figure 1-2.[4] As a result, the number of train pass-bys (and vibration events) will increase.

(4) Real-life simultaneous vibration events intentionally excluded from the study

The FEIS states that "Normally, vibration from a train pass by would not cause building damage. However, the potential for damage to older fragile buildings located very near or within the right of way could be a concern." FEIS 5.7.1, p. 5-37. There are no studies cited to support the first statement. The FEIS notes that fragile buildings (such as St. Paul AUMP Church) can be damaged by PPV of 0.12 in/sec or 90 VdB. FEIS 5.7. 1, p. 5-38.[5]

[3] Additional train pass-by vibration readings were taken in 2013, but the FEIS and Appx. lack data on the number of rail cars or speed.

[4] CSX has refused to tell even DC government the number of trains that it expects to run through the VAT post-construction. It is crucial to look at what the tunnel enables CSX to do – not just CSX's immediate plans - the relevant temporal unit is the effective life of the new tunnel: the next 100 years. A reasonable inference from CSX's refusal to disclose the estimated future number of trains is that the number of trains running through DC will increase, perhaps dramatically.

[5] We discuss St. Paul AUMP Church because the FEIS provides data on this fragile historic building. Many more fragile historic buildings may be affected by damaging vibration from the project, and, as noted, the area for damaging vibration effects is larger than the area stated in the FEIS.

The FEIS fails to account for simultaneously occurring vibration from construction site equipment, dump trucks traveling in opposite directions and from train pass-bys. FEIS 5.7. The FEIS models each vibration source in isolation and never combines them, but people and buildings will experience the combined effects of vibration from train pass-bys, from construction site equipment, and from loaded and empty dump trucks. A spike in the intensity of the vibration occurs when a train pass-by occurs at the same time as another vibration event as shown in the graph in FEIS App. G, Figure 4-3.[6] But the FEIS expressly dismisses this combined vibration event. Combined vibration events from the construction phases of Alternative 3 will likely occur together with increased number of train pass-bys. The trains currently run through the Virginia Avenue Tunnel at a maximum of 15 mph. DEIS 2.2, p. 2-5. During construction, all alternatives would allow the trains to run at up to 25 mph. DEIS, 5.15.1.1, p. 5-63. After construction, trains could have "a minimum operating speed of 40 mph." DEIS 2.2, p. 2-1.

The peak vibration for construction at St. Paul AUMP Church is estimated to range from PPV 0.070 in/sec or 85 VdB. At peak vibration level of 85 VdB, it would require only an additional 5 VdB from a train pass-by to reach the building-damaging level of 90 VdB. FEIS Appx. F, Tables 4-2, 5.5. The FEIS data itself strongly suggests that the church will suffer damaging vibration.

Similarly, the FEIS states that VdB of 80 or more potentially causes human annoyance in residences. FEIS 5.7.2, p. 5-39. The highest vibration measured for a train pass-by at Capper Senior Apartments was 81 VdB, and the estimated peak vibration from construction is 85 VdB. Both these readings exceed the threshold for annoyance. Similarly, for the Marine Band Practice Hall, readings of 63 for train pass-by and of 68 to 71 for construction, are close to or exceed acceptable vibration levels for concert or band halls (65 VdB). FEIS 5.7.1, pp. 5-38; Appx. G, Table 4-2, 5.5. Again, these readings for human annoyance consider vibration from train pass-by and construction in isolation, and thus understate the combined effects of vibration events.

Thank you for the opportunity to submit comments on the FEIS.

Sincerely,

Lisa Dale Jones

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President

cc:

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[6] A third source of vibration, "highest measured non-train event" in 2012 and 2013, shows vibration between 66 and 85 VdB for the monitoring locations. FEIS Appx. F, Table 4-2. We are unsure what these non-train events represent, but they clearly are not from VAT construction, and may represent another source of vibration that must be taken into account.

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