GSA

GSA Northwest/Arctic Region

Ms. Angela Freudenstein
Alaskan Way Viaduct Replacement Project
999 Third Ave, Suite 2424
Seattle, Washington 98104

RE: GSA Comments on the Supplemental Draft Environmental Impact Statement – SR 99 Bored Tunnel.

Dear Ms.Freudenstein.

GSA has reviewed the Supplemental Draft Environmental Impact Statement for the proposed SR 99 Bored Tunnel project and the project's specific impact on the existing Federal Office Building located at 909 First Avenue in downtown Seattle. The presentation of these comments is not an acceptance of the EIS or an approval of work in, around or under, the Federal Office Building nor is it an endorsement of the Bored Tunnel option for the Seattle Viaduct Replacement Project. Additionally, this response does not necessarily represent all of GSA's concerns associated with this project option.

The specific issues associated with the 2010 Supplemental Draft EIS for the Bored Tunnel Option are as follows:

F-002-001

1. Tunnel elevation under the Federal Office Building remains unresolved. Conflicting data and ambiguity of details leads GSA to believe that the top of the tunnel will be seventy-five feet (75') below the Federal Office Building's basement which places the tunnel right at the base of the foundation piers. Other sections indicate that the bottom of the tunnel will be one hundred feet (100') below the Federal Building's basement which, when subtracting the fifty-four foot (54') diameter, places the top of the tunnel approximately forty-six feet (46') below the Federal Office Building basement and in the middle of the foundation piers. Both described elevation place this historic building and its occupants in permanent jeopardy.

2. Appendix G of the Draft EIS states that "Subsurface property acquisitions would be required for between 52 and 59 parcels for the proposed 54-foot bored tunnel. "The subsurface property acquisition would consist of a three-dimensional corridor below the surface of the ground for the tunnel, and they would not affect land uses on the

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F-002-001

FHWA, WSDOT, and the City of Seattle acknowledge these comments. The top of the bored tunnel would be approximately 115 feet below the ground surface at Madison Street. Design drawings for the Federal Building show that the wood piles below the building extend as much as 51 feet below the ground surface. The wooden piles are likely founded in glacially overconsolidated material. The distance between the bottom of the piles and the top of the bored tunnel would be approximately 64 feet. The subsurface property acquisition would be outside the practical building requirements for typical building foundations and zoning requirements. The lead agencies will continue to coordinate with GSA during the final design process to address concerns about potential effects to the Federal Building, including an acquisition strategy and mitigation measures, if they become necessary.

F-002-001

surface because the limits are outside the practical building requirements for typical building foundations and zoning requirements."

a. Such a conclusion regarding the Federal Office Building site relies upon inaccurate and unreliable data. Considering that the top elevation of the tunnel is not known, it is possible that the tunnel could have significant impact on GSA's ability renovate or expand the facility. For example, should it be necessary to replace the existing timber pile foundation system, the tunnel could prevent installation of new piles. Modern pile foundations extend significantly deeper than the timber piles which currently support the Federal Office Building. Piles on a renovation project just south of downtown Seattle extend as much as one hundred sixty feet (160') below grade. The presence of the tunnel would hamper installation and increase the cost of any project requiring new foundation piles.

3. Attachment "A" of the EIS indicates that the proposed tunnel routing requires a construction easement and a subsurface acquisition for the Federal Office Building site. A proposed agreement for any such acquisition, easement, or acquisition strategy has not yet been presented to GSA for review.

a. Additionally, Exhibit A-1, Appendix G, page A-1 of the EIS indicates that the subsurface easement area required would be 18,930 square feet and a volume of 3,066,585 cubic feet. Exhibit 6-2, Appendix G, page 73 states that a construction easement of 59,239 square feet would be needed for settlement mitigation. How do these two easement calculations relate to each other and is the settlement mitigation permanent or is it limited to a specific period after the tunnel is constructed? What happens should settlement occur after the tunnel is fully operational?

F-002-002

4. Page A-1 of Appendix G lists properties that the EIS suggest may have negative foundation impacts due to the tunnel location. The Federal Office Building is not included in this list but is identified elsewhere in the document as a structure that will be subject to the 2 – 3 inches of settlement due to the construction. Since the tunnel will only impact a portion of the Federal Office Building, differential settlement may occur. A historic masonry structure like the Federal Office Building could experience cracking of brittle finishes and even cracking through the mortar joints due this settlement. While the compensation grouting process may mitigate some of these issues it cannot prevent the problem completely. Additionally, the compensation grouting could impact GSA's ability to perform future foundation repairs by creating a barrier to pile installation.

F-002-003

5. During a major modernization of the Federal Office Building in the mid 1990. GSA discovered a methane gas build-up in the space between the ground and parking level concrete floor slab. GSA's investigation revealed that the Federal Office Building site was part of a large land reclamation effort performed by the City of Seattle in the early 1900's (tidal areas were backfilled to create land for city building

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This concern is noted by the lead agencies. Appendix G, Land Use Discipline Report, of the Final EIS notes that Federal Building will receive Level 3 monitoring. Level 3 monitoring is the most intensive monitoring used for the most vulnerable historic buildings. This monitoring would include manual surveying, tilt meters, crack monitors, and GPS monitors to detect differential settlement as it occurs. Damage caused by the project to historic buildings would be repaired. The subsurface property acquisition would be outside the practical building requirements for typical building foundations and zoning requirements. The lead agencies will continue to coordinate with GSA on an acquisition strategy for this property. Chapter 8, Mitigation of this Final EIS describes how project effects would be mitigated.

F-002-003

The design-build contractor must comply with WISHA regulations for underground construction (tunneling) WAC 296-155-730 Tunnels and Shafts, which requires that the atmosphere in underground work areas be tested quantitatively as often as necessary to ensure a safe work environment. The tunnel boring machine would be equipped with a continuous flammable gas monitoring system capable of monitoring conditions within the occupied working spaces and shutting down the electrical power if statutory limits are exceeded. The contractor would also be responsible for potential mitigation measures including ventilation. Other engineering controls and procedures would be implemented as necessary. In the vicinity of the Federal Building, the tunnel would be advanced through glacial soils at a depth well below the wood debris area. The tunnel would be under the water table, and the level of methane dissolved in the water should not change in overlying soils because of the tunneling operation.

F-002-003

expansion). The backfill material contained a significant amount of organic material that has since decayed and produced methane gas as a by-product. What is the proposed method for monitoring and mitigating any methane gas build-up within the tunnel and specifically around the Federal Office Building?

F-002-004

6. While these comments do not necessarily reflect all of GSA's concerns regarding the construction of the Bored Tunnel Project under the Federal Office Building they do serve as a guidepost for issues that need to be resolved prior to the start of construction.

If you have any questions, please feel free to contact me at 253.931.7326.

Sincerely,

Carrie L. Mosher
Director, Portfolio Management Division
GSA, PBS Northwest/Arctic Region

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WSDOT will continue to coordinate with GSA throughout the design and construction process to address your concerns.