



*Tier 2 Final Environmental Assessment
I-66 Interchange Justification Report*

Appendix G

Environmental Assessment

FINAL – AUGUST 2016

Chapter 1 – Introduction, National Environmental Policy Act Tiering Process, and Executive Summary

The May 2015 Tier 2 Draft Environmental Assessment (EA) for proposed Interstate 66 (I-66) corridor improvements from US 15 in Prince William County to I-495 in Fairfax County was prepared in accordance with requirements of the National Environmental Policy Act of 1969 (NEPA) through a joint effort by the Federal Highway Administration (FHWA), the Virginia Department of Transportation (VDOT), and the Virginia Department of Rail and Public Transportation (DRPT). The Federal Transit Administration, the US Army Corps of Engineers, and the US Environmental Protection Agency served as cooperating agencies. The Tier 2 study was undertaken to advance improvements identified at a conceptual level in the Tier 1 Final Environmental Impact Statement (Tier 1 FEIS) and Tier 1 Record of Decision (Tier 1 ROD) published in November 2013. Chapter 1 of the Tier 1 FEIS contains additional information on the tiering process, including the regulatory basis for tiering. A Tier 2 Revised Environmental Assessment was prepared following public hearings and identification of the Preferred Alternative and the document was distributed for public review and comment in January 2016. This Tier 2 Final EA identifies the Preferred Alternative and its impacts, updates analyses as necessary, and addresses substantive comments received on the Tier 2 Revised EA.

1.1 Tier 1 FEIS and Tier 1 ROD

1.1.1 Purpose of Tier 1 Study

As stated in the Purpose and Need chapter of the Tier 1 FEIS, the purpose of the Tier 1 study was to “address existing and future transportation problems on I-66 and improve multimodal mobility along the corridor by providing diverse travel choices in a cost-effective manner, and to enhance transportation safety and travel reliability for the public.” The study was designed to aid in the development of a long-term vision for the I-66 corridor from US 15 to I-495 (Capital Beltway), taking into account corridor-wide multimodal concepts to assist in making informed decisions about the best program of near-term and long-term transportation improvements. The corridor-level conceptual study provided opportunities for

transportation agencies to work together to address issues ripe for decision-making and to preserve a long-term vision while allowing on-going improvements to continue under the authority of the appropriate lead agencies. This approach was designed, in part, to recognize that each lead agency has different methods of project identification, programming, and project development. A full description of the Tier 1 scope of analyses and decisions was provided in Chapters 1 and 6 of the Tier 1 FEIS, the Memorandum of Agreement in Appendix A of the Tier 1 FEIS, and the Tier 1 ROD in Appendix E of the Tier 1 FEIS. The Tier 1 FEIS and Tier 1 ROD can be viewed at: <http://www.transform66.org/>.

1.1.2 Decisions from Tier 1 Study

The decisions enumerated in the Tier 1 ROD included the following:

- Ten improvement concepts were advanced (these were described in detail in Chapter 3 of the Tier 1 FEIS and are summarized below in Section 1.1.3). [Note: The Tier 1 FEIS explains how no single improvement concept would fully meet the identified transportation needs in the corridor. Therefore, the six capacity improvement concepts were characterized as discrete units, or “building blocks,” with unique carrying abilities that could be put together in various combinations to address travel demands within the corridor. The Tier 1 FEIS then evaluated various logically consistent combinations of the improvement concepts that would additively meet more fully the estimated person-trip demands in the corridor. This approach presumes that implementation of one or more improvement concepts would not preclude implementation of other improvement concepts independently or at a later time. Furthermore, the other four improvement concepts that would address non-capacity needs also could be either advanced independently or combined with the capacity-related improvement concepts. The Tier 1 FEIS was clear that the fact that ten improvement concepts were advanced does not mean that projects associated with each improvement concept will be implemented, and that projects with independent utility associated with individual improvement concepts may be advanced independently of projects associated with other improvement concepts.]
- The general location for studying future highway and transit improvements is within the existing I-66 corridor, with the exception of Virginia Railway Express (VRE) improvements for which the general location is the existing VRE alignment. Each of the improvement concepts would be located within the corridor in which it currently exists, rather than within new-location corridors.
- No specific individual projects associated with the Tier 1 FEIS were identified in the Tier 1 ROD; rather, the Tier 1 ROD allowed the Commonwealth of Virginia to identify individual Tier 2 projects for subsequent study.
- The consideration of tolls as a funding source was advanced for subsequent study.

1.1.3 Summary of Improvement Concepts Advanced from Tier 1

The following ten general improvement concepts were advanced in the Tier 1 ROD:

- **General Purpose Lanes:** Construction of additional highway lanes open to all traffic.
- **Managed Lanes:** Conversion of the existing HOV lane into either a one- or two-lane (in each direction) facility that would operate as a high-occupancy toll facility where only high-occupant vehicles would be exempt from paying a toll.
- **Metrorail Extension:** Metrorail service extending west from Vienna to either Centreville or Haymarket.
- **Light Rail Transit:** Light rail service extending west from Vienna to either Centreville or Haymarket.

- **Bus Rapid Transit:** Separate guideway bus rapid transit extending west from Vienna to Haymarket; service could extend east of Vienna.
- **VRE Extension:** Extension of existing VRE service from Manassas to Haymarket.
- **Improve Spot Locations/Chokepoints:** Improvements that address operations constraints at discrete locations (chokepoints) such as individual interchanges or specific junction points within the interchanges (i.e., merge, diverge, or weaving areas).
- **Intermodal Connectivity:** Availability of a full range of travel modes within the corridor, as well as availability and functionality of connections between travel modes.
- **Safety Improvements:** Safety improvements that address both location-specific and corridor-wide safety concerns.
- **Transportation Communication and Technology:** Continued enhancements to Intelligent Transportation Systems (ITS) technology for all modes in the corridor, including traveler information, corridor and incident management, and transit technology.

Chapter 6 of the Tier 1 FEIS outlined steps, analyses, and decisions anticipated during subsequent Tier 2 NEPA documentation to show the process by which improvement concepts would be implemented. In addition, the Tier 1 ROD noted that in accordance with NEPA principles, the No-Build Alternative would be under consideration for each Tier 2 project.

1.2 Scope and Executive Summary of Tier 2 Final EA

This Tier 2 Final EA addresses a set of transportation improvements derived from the Tier 1 improvement concepts.

Chapter 2, Purpose and Need, reiterates the existing and future transportation conditions and needs that were defined in the Tier 1 FEIS for the study corridor, but provides updated supporting traffic and transportation information. The purpose of the project is to address existing and future transportation problems on I-66 and improve multimodal mobility along the corridor by providing diverse travel choices in a cost-effective manner, and to enhance transportation safety and travel reliability for the public. The elements of transportation needs include the following.

- Transportation capacity deficiencies. Travel demands in the corridor exceed the carrying capacity of I-66, resulting in congestion, reduced travel speeds, and unserved demand.
- Major points of congestion. Existing traffic operations are adversely affected by points of constraint based on either capacity or geometric issues. The locations of localized constraints (chokepoints) where daily peak period congestion occurs in the existing condition, which affects both cars and bus transit operations, are:
 - VA 234 interchange.
 - VA 234 Business interchange.
 - US 29 “east” interchange at Centreville.
 - I-66 mainline between US 29 “east” and VA 28.
 - VA 28 interchange.
 - Fairfax County Parkway (VA 286) interchange.
 - US 50 interchange.
 - VA 123 interchange.
 - Nutley Street/Vienna Metrorail station access interchange.
- Limited travel mode choices. Alternatives to single-occupant vehicle (SOV) travel are limited. Even if transit services were more extensive, they would suffer from the same congested conditions as all other vehicles in the corridor because they have to share the same roadway.

Alternative multimodal opportunities such as bicycling and walking, whether as the primary transportation mode for a trip or as a means to connect to other modes, are lacking within the corridor. Although there are several park-and-ride facilities along the corridor, intermodal transfer centers and connections that are more supportive of access to intermodal facilities by walking and bicycling are limited. Coordination of traveler information across travel modes as well as physical linkages between travel modes is also lacking in the corridor.

- Safety deficiencies. Congestion in the corridor creates the potential for crashes, especially rear-end and side-swipe crashes. In addition to safety challenges caused by this congestion, deficient geometric features create safety impacts in the corridor. These deficient geometrics include short acceleration and deceleration lanes and the lack of a shoulder during peak periods.
- Transportation predictability. Although it is difficult to quantify, travelers currently experience highly unreliable travel times on I-66, particularly during peak periods. With volumes either at or over capacity, events such as a disabled vehicle in the travel lane or on the shoulder, or adverse weather conditions and glare from sunrises or sunsets, can result in substantial differences in travel time.

Chapter 3, Alternatives, describes the set of specific proposed improvements, which is comprised of a mix of five of the ten concepts advanced by the Tier 1 ROD. Information is provided regarding the basis for advancing this set of improvements at this time, while leaving other concepts for potential further advancement independently. Specific alternatives involving different elements (e.g., typical cross sections, access points, and interchange configurations) of the proposed improvements are described and evaluated. In developing the alternatives, a key goal was to design them in such a way as to not preclude future implementation of the remaining five improvement concepts from the Tier 1 study. Chapter 3 also describes the Preferred Alternative and the basis for it. The Preferred Alternative consists of the following multimodal improvements:

- Two express lanes and three general purpose lanes in each direction of I-66, and a median for future separate guideway transit.
- Dedicated access points serving the express lanes.
- High-frequency, fast, and reliable bus service along the corridor during extended peak periods.
- Four new and expanded park-and-ride lots, all having direct access to the express lanes.
- Corridor-wide bikeway, trail, and sidewalk improvements.
- Safety and operational improvements at key interchanges throughout the I-66 corridor.

Chapter 4, Affected Environment and Environmental Consequences, describes the affected environment and the direct, indirect, and cumulative environmental effects of the alternatives for the proposed corridor improvements being considered in this Tier 2 Final EA. For the Tier 1 FEIS, the evaluation of potential environmental effects of the “Build” concepts was performed at a level of analysis commensurate with the conceptual nature of the improvements and the broad level decisions to be made in Tier 1. In contrast, for this Tier 2 Final EA, quantitative analyses have been conducted using data based on ground surveys, engineering design, and precise modeling.

Chapter 5, Comments and Coordination, describes the public and agency coordination efforts during the course of preparing this Tier 2 Final EA. The issues discussed in this Tier 2 Final EA reflect the extensive public and agency input received during studies for both the Tier 1 FEIS and this Tier 2 Draft EA, Tier 2 Revised EA, and Tier 2 Final EA. Federal, state, and local agencies were contacted at the beginning of the studies and asked to provide any comments and suggestions they had regarding important issues that should be considered. Additional agency coordination occurred through various meetings, correspondence, and teleconferences. A number of agencies also participated in the Stakeholders Technical Advisory Group and the Transit Technical Advisory Group. The Tier 2 Draft EA

and the Tier 2 Revised EA were distributed to agencies for review and comment. Since initiation of the Tier 2 study, there have been:

- 12 public information meetings or public hearings.
- 75 presentations to federal, state, and local governing bodies.
- 80 meetings with federal, state, and local elected officials.
- 51 meetings with homeowners associations and other groups.

1.3 Basis for Preparing an EA

1.3.1 Regulations

NEPA requires federal agencies to prepare an Environmental Impact Statement for major federal actions that significantly affect the quality of the human environment (42 USC § 4332(2)(C)). The federal Council on Environmental Quality (CEQ) regulations at 40 CFR §§ 1500 –1508 tell federal agencies what they must do to comply with the procedural provisions of NEPA. The CEQ's regulations direct federal agencies to adopt procedures that supplement CEQ's regulations, including the identification of types of actions that normally would require an EIS.

FHWA's regulations implementing NEPA identify the types of actions that normally require an EIS (23 CFR § 771.115(a)), e.g., a highway project of four or more lanes on new location). The I-66 Tier 2 project is not a type of action that normally requires an EIS under that regulation. Instead, this project, which is along the existing I-66 corridor, falls under the category of actions for which an EA is the appropriate document type (23 CFR § 771.115(c)).¹

In addition, CEQ's NEPA tiering provisions at 40 CFR § 1502.20 explicitly provide that a Tier 2 NEPA document can be an EIS or an EA. If, at any point during the EA process, significant environmental impacts are identified, then an EIS would be prepared at that point.

1.3.2 Administrative Process

The Memorandum of Agreement (MOA, June 2011) mentioned in Section 1.1.1 outlined the tiered study approach to be used for transportation improvements in the I-66 corridor between US 15 and I-495. The Tier 1 FEIS and Tier 1 ROD were completed consistent with that approach. As described in greater detail in Chapter 3, Alternatives, following completion of the Tier 1 FEIS and ROD, VDOT and DRPT began examining combinations of Tier 1 concepts to advance with the goal of implementing effective corridor improvements in the near term, and VDOT and DRPT used the planning efforts, findings, and decisions from the Tier 1 FEIS to frame the elements of a Tier 2 project. These efforts included public meetings and collaboration with local governments in early 2014.

On April 23, 2014, VDOT recommended to FHWA that an EA be prepared as the Tier 2 NEPA document for the proposed I-66 project. On May 7, 2014, FHWA concurred with the preparation of an EA for the I-66 Tier 2 NEPA study.

The Tier 2 Draft EA was approved for public availability by FHWA on May 11, 2015. The Tier 2 Draft EA was distributed to federal, state, and local agencies and elected officials and was made available for public review and comment at VDOT District and Residency offices, at local libraries, at offices of local

¹ FHWA has supplementary guidance on environmental documents and procedures for its programs in Technical Advisory T6640.8A, October 30, 1987,

elected officials, on the project website, and at a series of public hearings held in late May and early June 2015.

The Tier 2 Revised EA was approved for public availability by FHWA on January 5, 2016, and it was made available for review and comment in the same manner as described above for the Tier 2 Draft EA, except that additional public hearings were not held. FHWA will consider the Tier 2 Final EA as well as comments received in making a Tier 2 NEPA decision for the project.

1.3.3 Environmental Consequences

A decision to prepare an EIS instead of an EA is based on a determination that significant environmental impacts would occur. As used in NEPA, the determination of impact significance requires considerations of both context and intensity (40 CFR § 1508.27). Context refers to the setting of the project. The setting of this project is 25 miles of an existing heavily traveled interstate highway in an urbanized area. The highway has been in place for decades. Lands along the corridor are largely developed as residential, commercial, and office properties. Lands that aren't developed are largely publicly owned as parks. The proposed improvements would be largely contained within existing highway right of way. The proposed highway improvements would consist mainly of adding one additional lane in each direction. The new lane, along with conversion of the existing high-occupancy vehicle (HOV) lane, would result in creation of two toll/HOV express lanes in each direction. Three general purpose lanes in each direction would remain. A number of transit and ride-sharing improvements would be included to better facilitate movement of people rather than just vehicles.

Chapter 4, Affected Environment and environmental consequences, describes the environmental impacts of the project. Based on the analyses of the intensity of those impacts, the impacts would not be significant. The following information supports this conclusion:

- The Preferred Alternative would not cause any violation of federal, state, or local law or requirements imposed for the protection of the environment.
- The Preferred Alternative would have no adverse effect on historic properties along the corridor, a determination with which the Virginia State Historic Preservation Officer has concurred.
- With one exception, the Preferred Alternative would not use any Section 4(f) properties along the corridor. The one exception would be Random Hills Park, a Fairfax County Park. However, the project would have a *de minimis* impact on that park.
- Although the Preferred Alternative would result in approximately 11 residential displacements, this number is not inordinately high given the size of the project. Furthermore, all displacees can be successfully relocated in accordance with federal relocation requirements.
- There would be no disproportionately high or adverse environmental effects on minority or low-income populations.
- All applicable air quality requirements of NEPA and federal and state transportation conformity regulations would be met. As such, the project would not cause or contribute to a new violation, increase the frequency or severity of any violation, or delay timely attainment of the National Ambient Air Quality Standards established by the US Environmental Protection Agency.
- Although noise impacts would occur throughout the corridor, these impacts can be mitigated by replacement of existing noise barriers that would need to be removed to accommodate the project and by installation of new barriers where they are determined to be feasible and reasonable. Because this is already an existing heavily traveled highway, future build condition noise levels would not be substantially higher than no-build condition noise levels.

1.3.4 Agency and Public Input

Numerous federal, state, and local agencies provided input on the project during scoping, at Stakeholder Advisory Group Meetings, and in comments on the Tier 2 Draft EA and the Tier 2 Revised EA. Several agencies also served as cooperating agencies during the preparation of the Tier 2 Draft EA, Tier 2 Revised EA, and this Tier 2 Final EA. No comments were received from any of the agencies objecting to the preparation of an EA rather than an EIS for the Tier 2 studies. Chapter 5, Comments and Coordination, summarizes the agency participation during the studies, and Appendices B, C, and D include the correspondence from federal, state, and local agencies, respectively, commenting on the Tier 2 Draft EA. Appendix G includes the agency correspondence received on the Tier 2 Revised EA.

Among public comments received on the Tier 2 Draft and Revised EAs were suggestions that an EIS should be prepared (see Appendices E and G). However, based on the analyses of environmental consequences presented in this Tier 2 Final EA, the Preferred Alternative would have no significant environmental impacts.

1.4 Next Steps

This Tier 2 Final EA is being submitted to FHWA along with a request for a Tier 2 NEPA decision.

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