

Environmental Assessment

US 340 Rock Slide Repair Project

State Project No. S319-340-15.78.00

Federal Project No. NHPP-0340(063)D

Harpers Ferry, Jefferson County, WV

October 7, 2021

Prepared for:

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WV State Project: S319-340-15.78.00
Federal Project: NHPP-0340(063)D

US 340 ROCK SLIDE REPAIR
JEFFERSON COUNTY, WV

ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to 42 USC 4332(2)(C)
U.S. Department of Transportation
Federal Highway Administration
and
West Virginia Department of Transportation, Division of Highways

9-29-2021

DATE OF APPROVAL

10/7/2021

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The proposed project consists of slide repair along US 340, in Harpers Ferry, Jefferson County, West Virginia.

Comments on this Environmental Assessment are due by December 9, 2021
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Executive Summary

The West Virginia Department of Transportation (WVDOT), Division of Highways (WVDOH), in cooperation with the Federal Highway Administration (FHWA), is proposing to remediate a rock slide area along US 340 in Harpers Ferry, Jefferson County, West Virginia.

This document provides an evaluation of anticipated environmental impacts associated with the remediation efforts. The project entails the repair of a rock slide along US 340 in Harpers Ferry, West Virginia. US 340 is a high-volume (approximately 35,000 vehicles per day), two-lane principal arterial roadway that traverses the water gap through the Blue ridge Mountains created by the Shenandoah and Potomac Rivers, between Harpers Ferry, West Virginia, and the West Virginia-Virginia state line. The project is located along the northbound (NB) and southbound (SB) lanes of US 340 in the Loudoun Heights region of the Harpers Ferry National Historical Park (HFNHP). The natural rock slopes adjacent to US 340 range in height from 150 feet to 600 feet above the US 340 roadway grade. These slopes exhibit varying degrees of rockfall activity and present concerns to the traveling public. Ongoing maintenance activities by the WVDOH is required to maintain the road for safe travel by the public through this area.

A Phase I Design Study (Preliminary Design Phase) was completed between December 2015 and April 2018 (HDR 2018). This work included a geologic evaluation and preliminary rockfall remediation design for three slope areas adjacent to US 340 between Chestnut Hill road (CR-32) and Harpers Ferry Road (VA-671). The purpose of the study was to provide a preliminary assessment of the potential rockfall within the study area and estimated probably construction costs for feasible rockfall remediation options. Slope investigation methods implemented to complete the assessment included roadway-level and upper-slope geologic evaluations, as well as mobile and aerial LiDAR mapping. Rockfall assessments included evaluation of potential rockfall generators on the slopes and the potential for rockfall from these sources to reach the roadway. This work focused primarily on the slope areas within WVDOH right-of-way (ROW), and immediately contiguous areas on National Park Service (NPS) property that affected potential rockfall concerns in the slope areas studied.

Investigation efforts included coordination between WVDOH, Virginia Department of Transportation (VDOT), Maryland State Highway Administration (MDSHA), the NPS, local politicians, and civic groups.



Remediation Efforts

The Phase I Design Study Report identified a high potential for rockfall in the area and established the public safety need to implement rockfall protection and stabilization mitigation measures for the three slide areas studied. The proposed remediation options have been developed based on the design study completed on the slopes within the existing WVDOH ROW rockfall protection and stabilization measures associated with the three slide areas studied. Eight remediation options were proposed in the Phase I Design Report:

- Pinned Rock Berm
- Rockfall Barrier
- Gabion Basket Barrier
- Rock Slope Drape
- Attenuator Drape
- Maintenance Scaling
- Localized Rock Bolting and Localized Pinned Mesh
- Attenuator Barrier

During final design studies it was determined that Pinned Rock Berms and Gabion Baskets would no longer be necessary and are no longer considered as part of the remediation efforts.

The remediation efforts for the project are referred to as the Action Alternative for the purposes of evaluation in this EA. Based on the analysis conducted to date, WVDOH has determined that the Action Alternative best meets the purpose and need for the project with the least environmental impact. The No-Action Alternative is also considered. The key impacts of the Action Alternative analyzed in this NEPA document are identified in **Table E-1**.

Table E-1: Impact Assessment of Action Alternatives

Environmental Resource Category	Action Alternative
Environmental Justice	No disproportionately high and adverse impact
Right-of-way Acquisition	Three temporary construction easements on NPS property
Residential Displacements	None
Business Displacements	None
Community Facilities/Services	Temporary impact to public transportation due to detour.
Bicycle/Pedestrian Facilities	No impact to bicycle or pedestrian facilities.
Community Cohesion	No impact



Environmental Resource Category	Action Alternative
Change in Travel Patterns	No permanent impact to automobile or bus traffic; temporary detour during construction is required.
Land Use	No impact
Archaeological Resources	No impact
Historic Resources	No Adverse Effect
Section 4(f) Properties	A Section 4(f) temporary occupancy will occur as a result of the project due remediation efforts that will occur on NPS property.
100-year Floodplain	No impact
500-year Floodplain	No impact
Streams	No impact
Wetlands	No impact
Water Quality	No permanent impacts. Temporary impacts may occur due to runoff associated with remediation activities. BMPs will be implemented by the contractor.
Wild and Scenic Rivers	No impact
Natural and Wild Areas	No impact
Vegetation	Minor impacts-Approximately 1.024 acres of vegetation will be removed.
Wildlife (migratory birds, terrestrial wildlife, and aquatic wildlife)	Minor impacts associated with noise from remediation activities.
Rare, Threatened, and Endangered Species	No impacts
Prime and Unique Farmland	No impact
Geologic Resources	No impact
Aesthetics and Visual Resources	Impact would be minor and powder coatings would be used on the remediation treatments to minimize visual impacts and blend the treatments with the existing rock face.
Groundwater	No impact
Waste Sites	No impact
Air Quality	No permanent impact; temporary impact as a result of increased pollutants during remediation activities.
Noise	No permanent impact. Temporary impact associated with remediation activities.
Cumulative Impacts	No cumulative impacts.
Secondary Impacts	No secondary impacts.
Cost Estimate (Option A)	\$6,500,000
Cost Estimate (Option B)	\$7,400,000



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List of Acronyms

ACS	American Community Survey
APE	Area of potential effect
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CWA	Clean Water Act
EA	Environmental Assessment
EJ	environmental justice
EPTA	Eastern Panhandle Transit Authority
FAST Act	Fixing America's Surface Transportation Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GIS	geographic information system
HDR	HDR Engineering, Inc.
HEPMPO	Hagerstown-Eastern Panhandle Metropolitan Planning Organization
HFNHP	Harpers Ferry National Historical Park
L RTP	Long Range Transportation Plan
MDSHA	Maryland State Highway Administration
NAAQS	National Ambient Air Quality Standards
NB	northbound
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NPS	National Park Service
NWI	National Wetland Inventory
ppm	parts per million
ROW	right-of-way
SB	southbound
SHPO	State Historic Preservation Officers
STIP	Statewide Transportation Improvement Program
T&E	threatened and endangered
TIP	Transportation Improvement Program
USACE	United States Army Corps of Engineers
USC	United States Code
USCB	United States Census Bureau
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
ug	microgram
VDOT	Virginia Department of Transportation



VDHR	Virginia Department of Historic Resources
VDWR	Virginia Department of Wildlife Resources
v/c	Volume to capacity ratio
WV	West Virginia
WVDCH	West Virginia Division of Culture and History
WVDEP	West Virginia Department of Environmental Protection
WVDNR	West Virginia Division of Natural Resources
WVDOE	West Virginia Department of Education
WVDOH	West Virginia Division of Highways
WVDOT	West Virginia Department of Transportation
WVSHPO	West Virginia State Historic Preservation Office

1. Purpose and Need

1.1. Project History and Description

This document provides an evaluation of anticipated environmental impacts associated with the repair of rock slides along US 340 in Harpers Ferry, West Virginia. The project study area is located along the northbound (NB) and southbound (SB) lanes of US 340 in the Loudoun Heights region of the HFNHP and west of the West Virginia/Virginia border on the southern bank of the Shenandoah and Potomac Rivers (**Figure 1-1**). US 340 is a high-traffic volume corridor serving local, commuter, and truck traffic from West Virginia, Virginia, and Maryland. This corridor also experiences high traffic volume from seasonal tourism due to its recreational and historical significance in the region, including the Appalachian Trail to the west of the Study Area. The existing cut slopes in the project study area are a product of US 340 construction in the mid-1950's and natural erosion along the Shenandoah River. The cut slopes in the project study area exhibit varying degrees of rockfall activity that present potential hazards to the traveling public. Alternatives included in this EA include the No-Action and the Action Alternative. This EA evaluates the anticipated socioeconomic, cultural, and natural environmental impacts of the proposed project in accordance with the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality's (CEQ) implementing regulations for NEPA (40 Code of Federal Regulations (CFR) 1500-1508), FHWA's implementing regulations for NEPA (23 CFR 771), U.S. Department of Transportation (USDOT) Federal Highway Administration (FHWA) guidelines (Technical Advisory T 6640.8A, October 30, 1987 – *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*), the Fixing America's Surface Transportation Act (FAST) (Public Law 114-94, December 4, 2015, 129 Stat. 1312), and related guidance.

Environmental Study Area

The environmental study area, as shown in **Figure 1-2**, is defined as approximately 2,250 lineal feet of slopes along US 340 that consisted of lower tier slope evaluations of high rockfall hazard potential sections situated on both WVDOH ROW and NPS property, extending to an approximate 300 feet above US 340. The length of the project is approximately **one mile**.

Figure 1-1: Project Location



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Figure 1-2: Environmental Study Area





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1.2. Purpose and Need Statement

Purpose

The purpose of this project is to implement rockfall protection and stabilization measures associated with the existing slopes along US 340 NB, while considering local traffic impacts during construction and future development of the US 340 corridor.

Need

US 340 is a high-traffic volume corridor serving local, commuter and truck traffic from West Virginia, Virginia, and Maryland. In addition, this corridor also experiences high traffic volume from seasonal tourism due to its recreational and historical significance in the region. Current Average Daily Traffic along this section of US 340 is 23,910 vpd. Due to the volume of traffic, and that US 340 is the main route through this area, rockfalls pose a threat to public safety not only due to the rockfall itself, but from road closures that result from rockfalls and the potential impact to emergency vehicle response times. As identified in the Design Study prepared in April 2018, there is a high potential for rockfall in the area and an established public safety need to implement rockfall protection and stabilization mitigation measures for the priority slopes (HDR, 2018).

Supporting Documentation

The existing slopes along US 340 NB consist of natural rock slopes (cliffs and rock spires), boulder fields and debris channels, along with roadway rock cuts associated with the original construction of the roadway along the Potomac River in the 1950s. The cut slopes and the exposed rock of natural slopes vary in height from 150 feet to greater than 600 feet above the roadway. Rockfalls and other failures have been documented along US 340 over the last two decades. The rockfall events appear to have historically occurred primarily in the spring and winter months and appear to correspond with freeze-thaw cycles and wetter seasons. A majority of the failures that occur along US 340 are rockfalls of minor volume and impact, however, large rockfall events have occurred in the past and continue to pose a risk in the future. The cut slopes in the project study area exhibit varying degrees of rockfall activity that present potential hazards to the travelling public and require ongoing maintenance by the WVDOT.

2. Alternatives

The alternatives considered for this project include the Action Alternative, which consists of the repair of three slides, Slope 1, Slope 2, and Slope 3, located within the project area and the No-Action Alternative (**Figure 2-1 thru 2-3**). There are a variety of mitigation techniques available and many of these techniques will be used in combination to mitigate the slide areas within the US 340 project area. Section 2.1 discusses the slope treatment and Section 2.2 identifies the combination of slide repair remediation techniques that will be associated with the Action Alternative. The maintenance scaling, rock slope drape, localized rock bolting, attenuator drape, localized safety scaling remediation techniques are expected to extend beyond the WVDOH ROW and take place on HFNHP property (**Figure 2-1 thru 2-3**). Temporary easements will be coordinated with NPS to access these areas.

2.1. Action Alternative

2.1.1. Slope 1 Remediation

Remediation for Slope 1 consists of localized rock bolting, maintenance scaling, rockfall barrier, attenuator drape and an attenuator barrier.

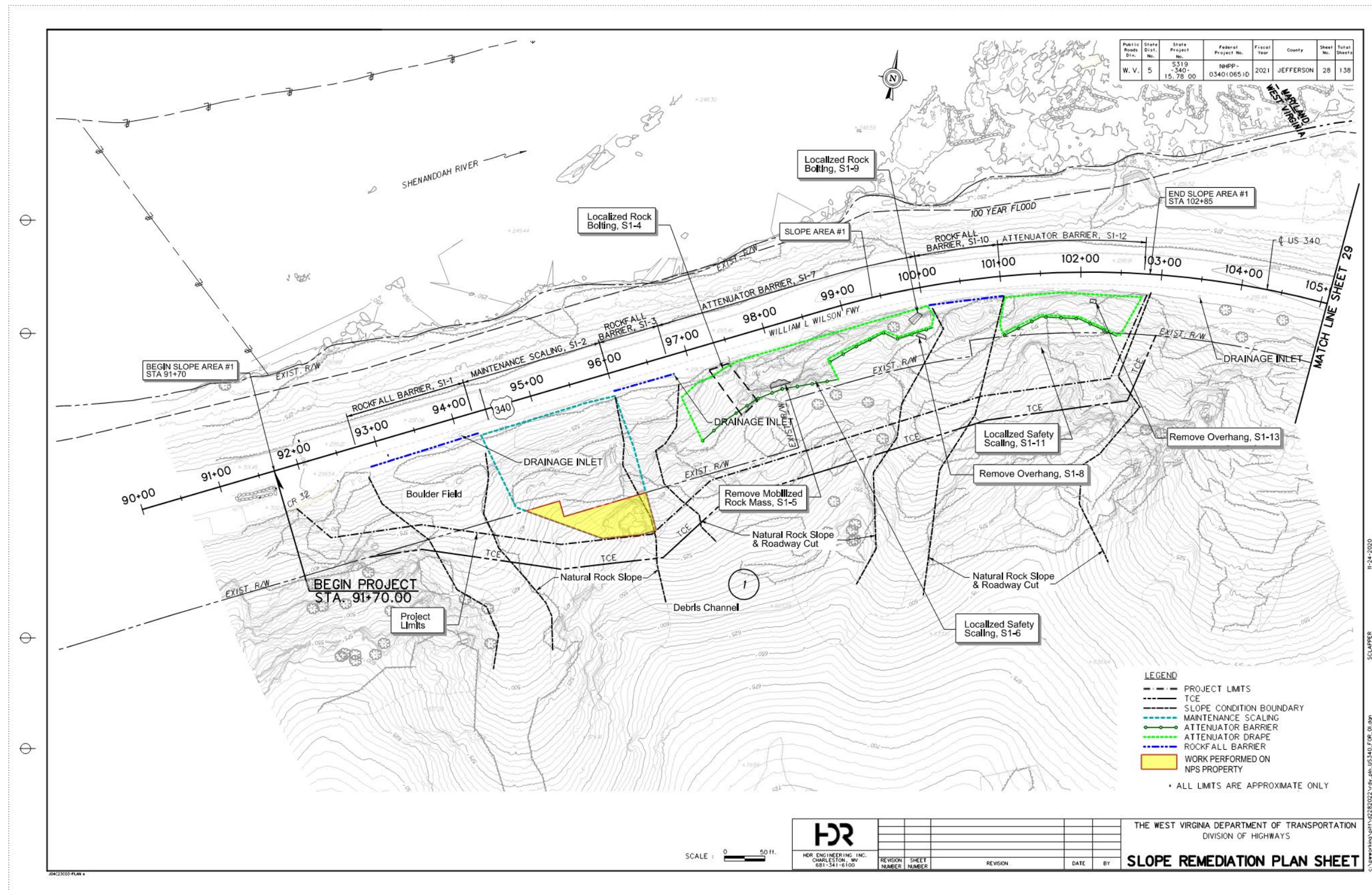
2.1.2. Slope 2 Remediation

Remediation for Slope 2 consists of localized rock bolting, rock slope drape, maintenance scaling, and rockfall barrier.

2.1.3. Slope 3 Remediation

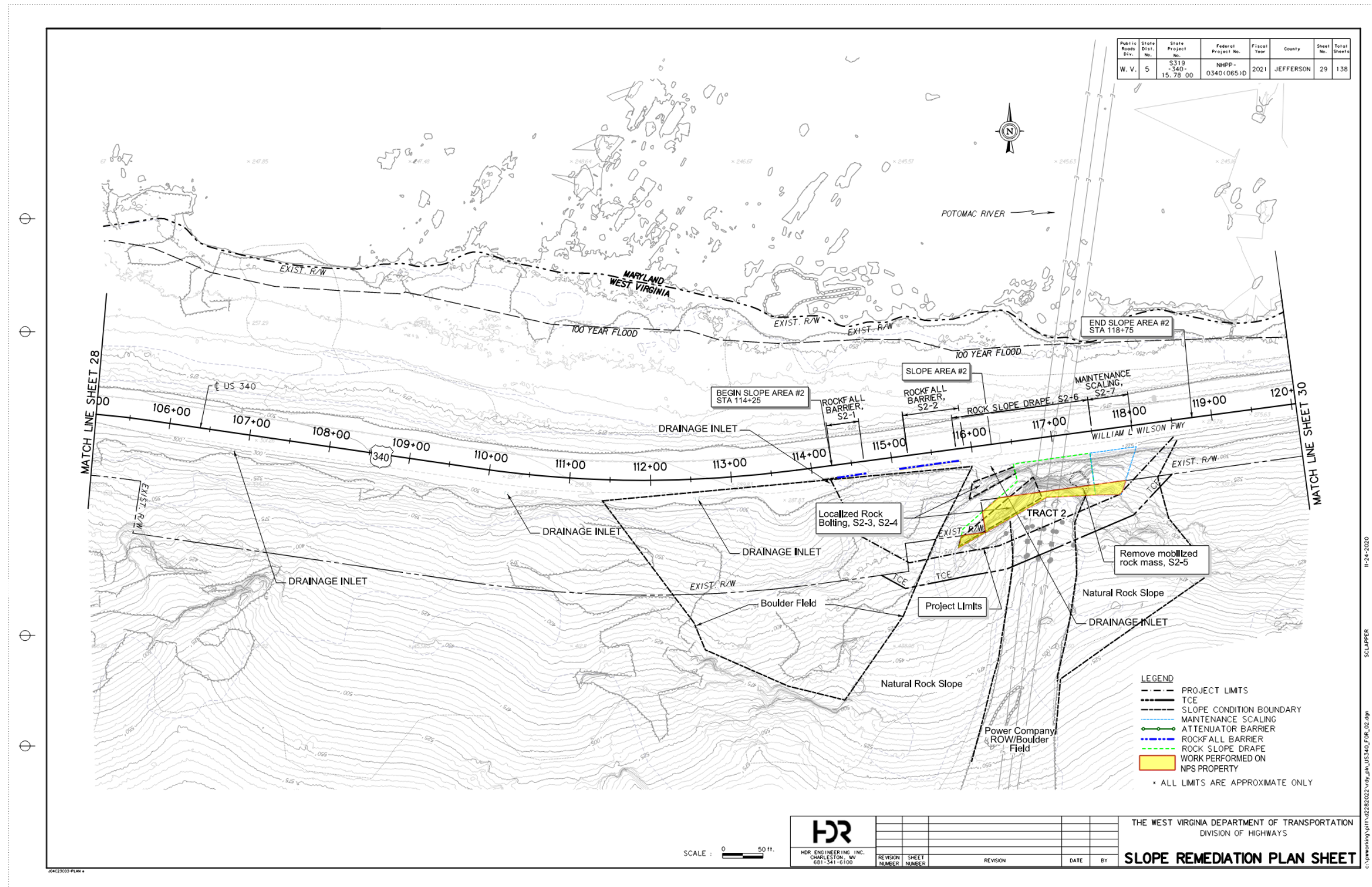
Remediation for Slope 3 consists of localized rock bolting, localized pinned mesh, attenuator barrier, maintenance scaling, and attenuator drape.

Figure 2-1: Slope 1



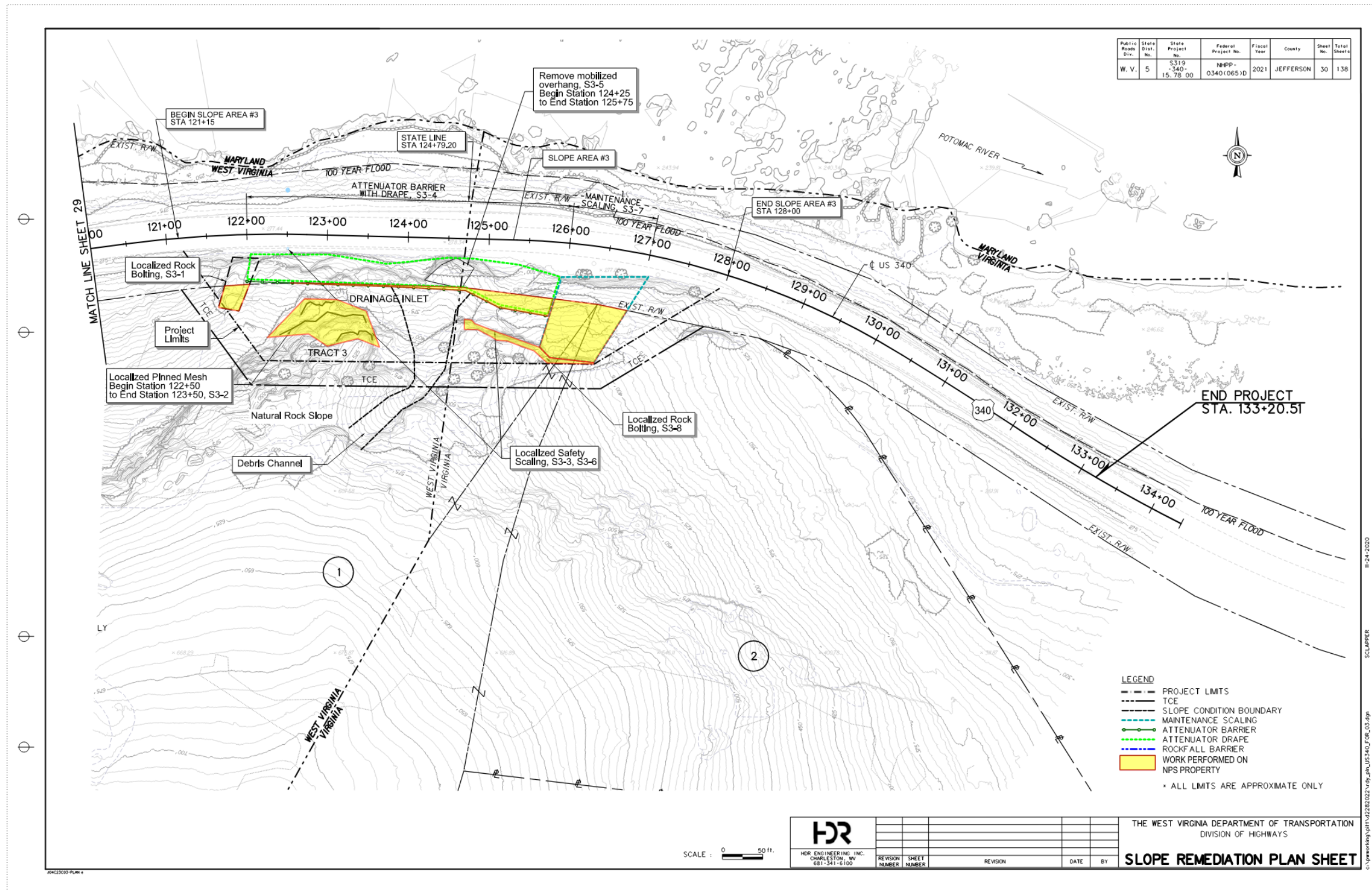
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Figure 2-2: Slope 2



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Figure 2-3: Slope 3



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To complete the remediation activities, closure of US 340 would be required, and a 23-mile detour is the only viable option while US 340 is closed. Based on concerns expressed by the public at a February 6, 2020 public workshop, WVDOH also looked at an option to maintain traffic during remediation activities. The following are the options for traffic control during remediation activities:

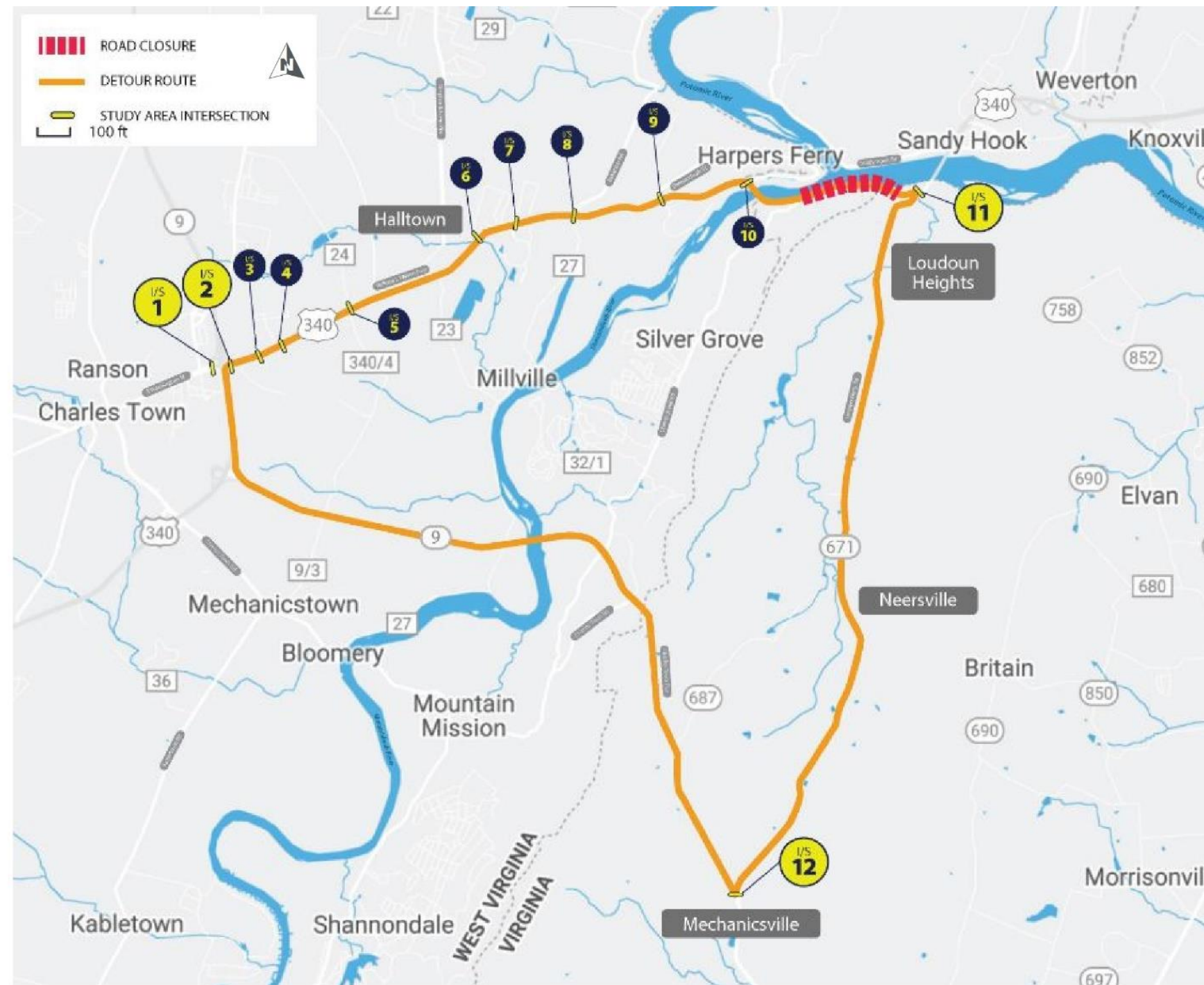
Option A

The Option A traffic control plan consists of a full detour for the duration of the project. The detour consists of an approximately 23-mile route around the site from near Charles Town, WV, south into Virginia, then north on VA Route 671 to near the eastern terminus of the project area in Virginia near the intersection of US 340 and WV Rt. 671. This method permits the contractor to work in multiple areas along the corridor, as well as avoid installation of temporary traffic treatments. Duration of the project, road closure, and detour would be approximately 90-days. The detour route is located in Appendix A and **Figure 2-4**. This option was taken into consideration as part of the Action Alternative in the environmental analysis in this EA.

Option B

The Option B Traffic Control Plan consists of staged traffic patterns to permit vehicular traffic during construction. This would consist of an initial 23-mile detour during which work would be performed in high risk areas where potentially dangerous rockfall could occur, and in areas requiring larger equipment. Following the initial full detour, temporary traffic control measures would be installed as well as improvements to the existing shoulder. Traffic would be shifted to the improved shoulder to permit a single lane of traffic, followed by then reconfiguring to permit two-way traffic during the least impeding work efforts. This option would require full closure and detour for 65 days to improve the shoulder and the overall length of the project would be 170 days. Plans with shoulder improvements are included in Appendix A. Shoulder improvements were taken into consideration in the environmental analysis in this EA and is considered part of the Action Alternative.

Figure 2-4: Proposed Detour



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2.2. Slide Repair Mitigation Techniques

Three areas containing rock slides were identified: Slope 1, located at Station 91+70 to Station 102+85; Slope 2, located at Station 114+24 to Station 118+50; and Station 3, located at Station 121+50 to Station 128+00 (**Figures 2-1 thru 2-3**).

Studies were conducted to determine the most appropriate treatments for rockfall protection and mitigation. Selecting rock slope and rockfall protection and mitigation treatments appropriate to the site conditions is critical to mitigating rockfall hazards impacting the traveling public. The rockfall protection and mitigation features best suited for the slides in the project area are described as follows. Examples of the remediation techniques are depicted in **Figure 2-5**.

Maintenance Scaling

Maintenance scaling is the process of manually or mechanically removing loose rock from a slope.

Rock Slope Drape

A rock slope drape system consists of woven wire and/or rolled cable fabric drape suspended over a slope and secured with rock anchors typically located at the top of the slope. The system is designed to allow rockfall to roll or fall along the slope behind the drape to the base of the slope. This reduces freefall of the rockfall material and contains it in a rock catchment at the toe of slope. The drape would consist of spiral rope or cable nets and would be supplemented with a double twist mesh or chain link fabric backing. Safety scaling would be required prior to installation of the drape to remove loose material on the slope. Protection of utilities and pavement would be required to minimize damage from falling rock. Traffic on US 340 would be detoured to protect traffic from rockfall hazards during scaling operations and installation of the drape.

Attenuator Barrier with Drape

An attenuator barrier, with drape, is similar to a rock slope drape system. However, rather than attaching the drape to the slope rock with rock anchors, it would be attached to the back of attenuator posts designed to control rock from rockfall generators above the attenuator. This type of drape is typically designed to allow rock to fall in a controlled manner into a catchment provided at the toe of slope. The attenuator barriers can be installed on the slope or at the toe of the existing debris channel and boulder fields along the corridor. Safety scaling would be required prior to installation of the attenuator drape. Protection of utilities and

pavement would be required to minimize damage from falling rock. Similarly, detouring traffic from US 340 would be required to protect traffic from rockfall hazards from the scaling operation and the installation of the drape system.

Flexible Rockfall Barrier

A flexible rockfall barrier is typically a flexible fence whereby a net is secured by posts and cables, which are supported with ground or rock anchors. Posts are typically anchored to foundations or competent bedrock. The netting or panels would likely consist of wire mesh and/or spiral rope nets, cable nets, or ring nets. A traffic detour and roadway closure would be required to facilitate construction of the rockfall barrier.

Pinned Mesh

A pinned mesh system consists of woven wire and/or rolled cable fabric drape suspended over a slope and secured with rock anchors in a grid-like pattern on the face of the slope. The system is designed to allow for movement behind the mesh but to maintain any rockfall within the pinned area. This prevents rockfall material from being mobilized down the slope. The mesh would consist of spiral rope or cable nets and would be supplemented with a double twist mesh or chain link fabric backing. Safety scaling would be required prior to installation of the drape to remove loose material on the slope. Protection of utilities and pavement would be required to minimize damage from falling rock. Traffic on US 340 would be detoured to protect traffic from rockfall hazards during scaling operations and installation of the drape.

Rock Bolting

A rock bolt is a tensioned steel bar and strands that can be installed into the rock slope to actively increase shear strength along discontinuities by increasing the normal force acting along potential failure surfaces. This prevents large scale global rockfall events. Final location of rock bolts is determined in the field based on existing conditions. Due to the equipment and potential for rockfall during construction, a traffic detour and roadway closure would be required to facilitate construction of the rockfall barrier.

Figure 2-5: Project Area Upgrades



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Table 2-1: Impact Assessment of Action Alternative

Environmental Resource Category	Action Alternative
Environmental Justice	No disproportionately high and adverse impact.
Right-of-Way Acquisition	Three temporary construction easements on NPS property
Residential Displacements	None
Business Displacements	None
Community Facilities/Services	Temporary impact to public transportation due to detour.
Bicycle/Pedestrian Facilities	No impact to bicycle or pedestrian facilities.
Community Cohesion	No impact
Change in Travel Patterns	No permanent impact to automobile or bus traffic; temporary detour during construction is required.
Land Use	No impact
Archaeological Resources	No impact
Historic Resources	West Virginia State Historic Preservation Office (WVDOH) has determined that the project will not result in an adverse effect to the Harpers Ferry National Historical Park.
Section 4(f) Properties	A Section 4(f) use will occur as a result of the project due to portions of the slide that extend on to NPS property. A temporary easement will be needed to access NPS property and conduct repairs to the slide.
100-year Floodplain	No impact
500-year Floodplain	No impact
Streams	No impact
Wetlands	No impact
Water Quality	No impact
Wild and Scenic Rivers	No impact
Natural and Wild Areas	No impact
Vegetation	Minor impacts-Approximately 1.024 acres of vegetation will be removed.
Wildlife (migratory birds, terrestrial wildlife, and aquatic wildlife)	Minor impacts



Environmental Resource Category	Action Alternative
Rare, Threatened, and Endangered Species	No impacts to bald eagles or Indiana bats or northern long-eared bats.
Prime and Unique Farmland	No impact
Geologic Resources	No impact
Aesthetics and Visual Resources	Minor impact.
Groundwater	No impact
Waste Sites	No impact
Air Quality	No permanent impact; temporary impact as a result of increased pollutants during construction.
Noise	No permanent impact; temporary impact associated with remediation activities.
Cumulative Impacts	See Table 3-11 .
Secondary Impacts	See Section 3.5.2 .
Cost Estimate (Option A)	\$6,500,000
Cost Estimate (Option B)	\$7,400,000

2.3. No-Action Alternative

The No-Action Alternative would result in no repairs to the three rock slide areas identified previously. Rock would continue to fall and pose a safety hazard to the traveling public. The No-Action Alternative does not meet the project purpose and need; therefore, it is not carried forward.

3. Environmental Effects

This section of the EA contains the background research, impacts, and mitigation required to determine the environmental impacts associated with the Action Alternative. Environmental commitments and mitigation efforts are summarized in **Section 3.6**.

3.1. Socioeconomic Impacts

Socioeconomic impacts include changes in the community, neighborhoods, travel patterns, and accessibility; impacts on school districts; impacts on safety; the number of relocated households and/or businesses; and economic impacts that can reasonably be expected after the completion of this project.

Based on the nature of the project, there will be no right-of-way acquisitions, residential or commercial displacements. Two temporary traffic control measures are under consideration; Option A full temporary detour and Option B staged traffic patterns during construction with a temporary detour. Option A is anticipated to be complete in approximately 90 days and Option B is anticipated to have a full closure and detour for 65 days to improve the shoulder and the overall length of construction to be 170 days.

Demographics

Demographic data were collected from the United States Census Bureau (USCB) 2000 Census and 2010 Census (USCB 2000, 2010). Supplemental data on age, race and income was gathered from the 2015–2019 American Community Survey (ACS). The US Census Decennial data was evaluated for the Census Tracts, Counties, and States that the Study Area resides. There were significant population increases in Census Tract 6101 and Census Tract 9726, at 51.66% and 31.60% respectively. Loudoun County had the highest percentage change of the geographical regions with a population increase of 85.15% from 2000 to 2010. The state of West Virginia had the smallest population growth with a percentage change of 2.47% Population data from the 2000 and 2010 decennial census and population trends are shown on **Table 3-1**.

Table 3-1: Population Trends

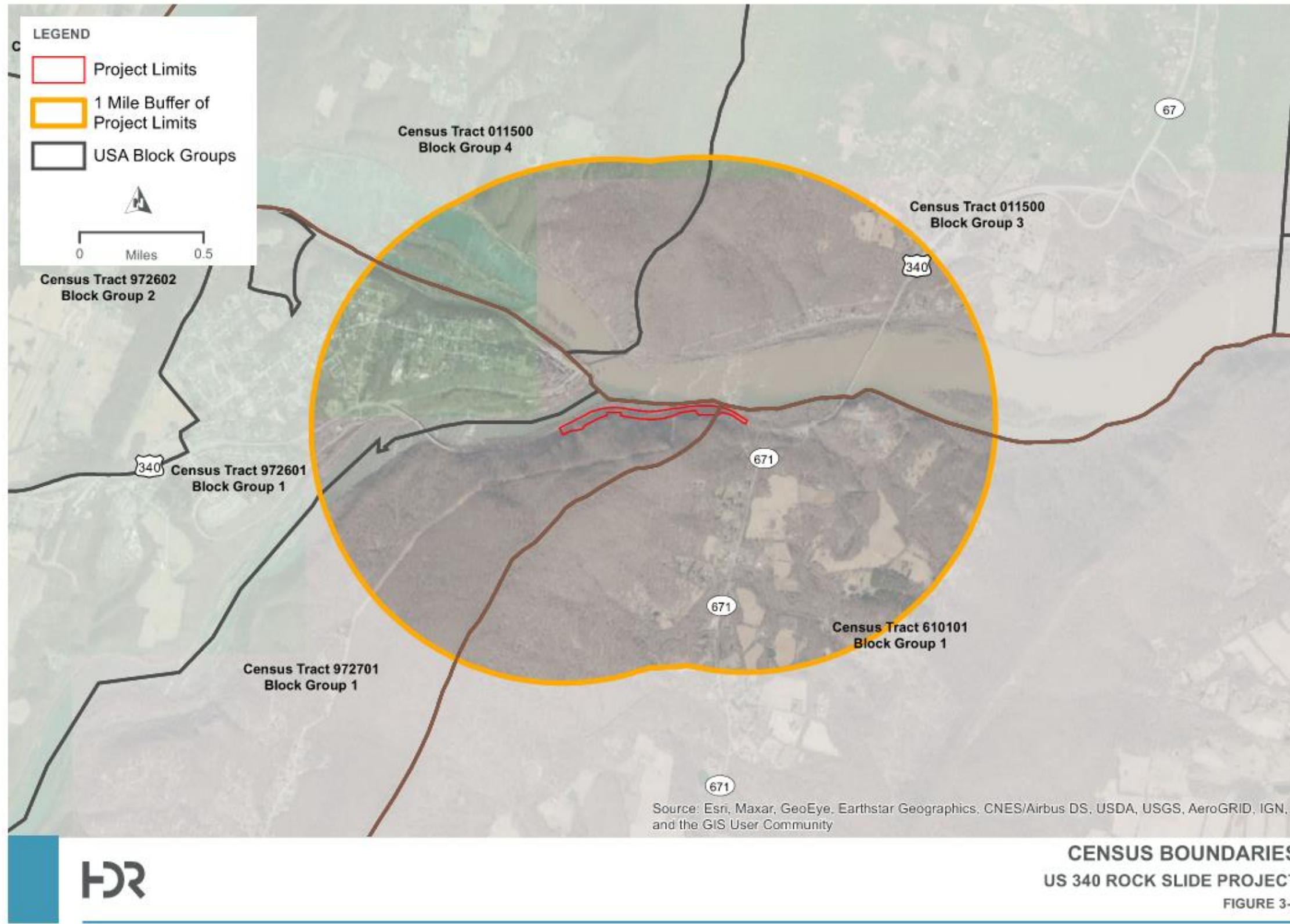
	Population		Percentage Change
	2000	2010	2000–2010
West Virginia	1,808,344	1,852,994	2.47%
Jefferson County	42,190	53,498	26.80%
Census Tract 9726	4,484	5,901	31.60%
Census Tract 9727*	6,381	6,767	6.05%
Virginia	7,078,515	8,001,024	13.03%
Loudoun County	169,599	312,311	84.15%
Census Tract 6101*	6,381	7,583	51.66%

Source: USCB 2000, 2010a

* Census Tracts where project work is proposed to occur

Socioeconomic characteristics within a 1-mile radius of the Action Alternative were examined. Data was examined at the block group level as opposed to census tracts group, when data was available. The project work is to be conducted within Census Tracts 9727.01, Block Group 1, in Jefferson County, West Virginia, and Census Tract 6101.01, Block Group 1, in Loudoun County, Virginia. A large portion of Census Tract 9726.01 in Jefferson County, West Virginia lies within this 1-mile radius and was included in this analysis. Since the small portions of Census Tracts 011500 in Washington County, Maryland within the 1-mile radius are part of the HFNHP, they were not included in the analysis. See **Figure 3-1**.

Figure 3-1: Census Boundaries





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Age and Race

Table 3-2 summarizes the age and racial data for the block groups that fall within the Study Area using the 2015–2019 ACS. The data for Census Tract 9726.01, Block Group 1 and Census Tract 9727.01, Block Group 1 were compared to Jefferson County and West Virginia and Census Tract 6101.01, Block Group 1, was compared to Loudoun County and Virginia. According to the ACS data from 2015 - 2019, the demographics of Census Tract 9726.01, Block Group 1 show that 78.25% of the population is of the age of 18 or over, similar to Jefferson County and West Virginia, with a population for the same age bracket of 77.55% and 76.34%, respectively. Census Tract, 9727.01, Block Group 1 has a significantly higher population for the same age bracket at 87.83%. Both of the block groups have populations similar to Jefferson County and West Virginia that are of the age of 65 or over.

Census Tract 6101.01, Block Group 1 has a similar percentage of the population that is of the age of 18 or over compared to the populations of Loudoun County and Virginia. However, the population in the block group that is 65 years or older (20.36%) is similar to Virginia (19.30%), but significantly larger than Loudoun County (12.61%).

Minority populations represent a small portion of the block groups that encompass the overall Study Area. Census Tract 6101.01, Block Group 1 and Census Tract 9727.01, Block Group 1, have a smaller percentage of minority populations compared to their reference county and state. Census Tract 9726.01, Block Group 1 has a larger minority population (9.26%) than West Virginia (8.02%), but smaller than Jefferson County (16.79%). The majority of the study area is Caucasian and between the ages of 18 and 65 (USCB 2015–2019a, b). Further information about the racial makeup of the study area is presented in the Environmental Justice Section.

Table 3-2: 2015-2019 Age and Race

	Population	≥ 18 Years of Age	≥ 65 Years of Age	Non-minority	Minority
West Virginia	1,817,305	1,387,313 76.34%	352,114 25.38%	1,671,546 91.98%	145,759 8.02%
Jefferson County	56,506	43,819 77.55%	8,781 20.04%	47,020 83.21%	9,486 16.79%
Block Group 1, Census Tract 9726.01	1,922	1,504 78.25%	335 22.27%	1,744 90.74%	178 9.26%
Block Group 1, Census Tract 9727.01*	978	859 87.83%	180 20.95%	966 98.77%	12 1.23%
Virginia	8,454,463	6,588,764 77.93%	1,271,946 19.30%	5,227,569 61.83%	3,226,894 38.17%
Loudoun County	395,134	282,513 71.50%	35,615 12.61%	221,708 56.11%	173,426 43.89%
Block Group 1, Census Tract 6101.01*	2,528	1,876 74.21%	382 20.36%	2,178 86.16%	350 13.84%

Source: USCB 2015-2019a, b

* Block Group where project work is proposed to occur

Economic Data

Census tract data was used for reviewing economic data due to lack of data for at the block group level. The unemployment percentage of Census Tract 9726.01 of 3.69% was similar to Jefferson County and West Virginia with unemployment percentages of 3.91% and 3.48%, respectively. Census Tract 9727.01 had a slightly higher unemployment percentage of 4.58%. Comparatively, the unemployment percentage was lower within the Virginia (2.95%), Loudoun County (2.44%), and Census Tract 6101.01 (1.22%). Refer to **Table 3-3** for economic data for the census tracts, counties and states that encompass the Study Area (USCB 2015-2019c).

Within the Study Area, the median household income ranges from \$64,853 in Census Tract 9727.01 and \$157,083 in Census Tract 6101.01. (USCB 2015-2019d). The percentages of low-income population (below poverty level) in Census Tract 9726.01 (9.31%) and Census Tract 9727.01 (15.92%) were below or in range with those of Jefferson County (9.72%) and West Virginia (17.56%). The percentage of low-income population in Census Tract 6101.01 (1.88%) was below than that in Loudoun County (3.39%) and Virginia (10.56%) (USCB 2015-2019e).

Table 3-3: 2015-2019 Economic Data

	Persons	
	Unemployed	Below Poverty Level
West Virginia	51,910 3.48%	310,044 17.56%
Jefferson County	45,400 3.91%	5,336 9.72%
Census Tract 9726.01	1570 3.69%	178 9.31%
Census Tract 9727.01*	2443 4.58%	456 15.92%
Virginia	6,799,060 2.95%	865,691 10.56%
Loudoun County	295,105 2.44%	13,342 3.39%
Census Tract 6101.01*	3,536 1.22%	87 1.88%

Source: USCB 2015-2019c, d, e,
 * Block Group where project work is proposed to occur

Housing Data

Census block group data was reviewed for housing data within the Study Area. The housing units within the study area are mostly single-family residences with a majority of the units being owner-occupied (USCB 2015-2019c).

Housing in the study area is primarily owner-occupied. There is a higher percentage of vacant homes in Census Tract 9726.01, Block Group 1 (27.24%), compared to Jefferson County (9.86%) and West Virginia (18.64%).

Table 3-4: 2015-2019 Housing Data

	Housing Units			
	Total	Renter Occupied	Owner Occupied	Vacant
West Virginia	732,585	196,432 26.81%	536,153 73.19%	166,808 18.64%
Jefferson County	20,891	4,923 23.57%	15,968 76.43%	2,286 9.86%
Block Group 1, Census Tract 9726.01	764	194 25.39%	570 74.61%	286 27.24%
Block Group 1, Census Tract 9727.01*	419	74 17.66%	345 82.34%	77 15.52%
Virginia	3,151,045	1,063,334 33.75%	2,087,711 66.25%	370,411 10.40%
Loudoun County	128,637	28,237 21.95%	100,400 78.05%	4,426 3.33%
Block Group 1, Census Tract 6101.01*	858	133 15.50%	725 84.50%	89 9.40%

Source: USCB 2015-2019f, g

* Block Group where project work is proposed to occur

Environmental Impacts

The No-Action Alternative or the proposed work of Action Alternative will not change the demographics, housing, or economics of the Study Area, Jefferson County and West Virginia or Loudoun County and Virginia.

3.1.1. Environmental Justice

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations) was signed on February 11, 1994. This Executive Order was established to protect minority and low-income populations from experiencing disproportionately high and adverse impacts resulting from federally funded projects. It requires agencies to identify and address high and adverse impacts of projects that will be disproportionately borne by minority or low-income populations. If disproportionately high and adverse impacts are expected, the proposed project cannot be completed unless it can be proven that there is a substantial need for the project; that avoidance and mitigation of the impacts is not practicable, or will have increased high and adverse social, economic, environmental, or human health impacts that are more severe; or there are increased costs of extraordinary magnitude.

In order to understand the makeup of the Study Area from an environmental justice perspective in comparison to the proposed project and the usage of US 340 by the public, minority and low-income populations were analyzed within the same 1-mile radius used in the Demographics analysis. This level of analysis uses Census block group data (rather than census tracts) when the data is available and provides a more in-depth view of the persons that could be directly affected by any temporary or permanent impacts of the project. The temporary closure of US 340 during the remediation of the rock slide area will impact all users of the roadway. Automobiles, buses, pedestrians, and bicyclists will need to use alternative routes during construction, or use the accommodations provided by the contractor.

The environmental justice study area comprises Census Tract 6101.01, Block Group 1 in Loudoun County, Virginia, and Census Tract 9726.01, Block Group 1, and Census Tract 9727.01, Block Group 1 in Jefferson County, West Virginia. As seen in Figure 3-1, these are large block groups with a relatively small portion of them within the study area.

Minority and Hispanic/Latino Populations

Table 3-5 presents the minority and Hispanic/Latino populations within 1-mile of the proposed project. The following definitions are used in this analysis and in **Table 3-5**:

- All races/ethnicity groups except non-Hispanic or Latino White alone are considered minority populations.
- Total Minority is defined as the Total Hispanic or Latino and the Non-Hispanic or Latino Minority combined.
- Non-Hispanic or Latino Minority is defined as all non-Hispanic or Latino races except for non-Hispanic or Latino White alone.

Shaded values in the study area in **Table 3-5** are higher than the reference geographies (county or state). Figure 3-1 depicts the location of block groups with Environmental Justice (EJ) populations and the location of the proposed project. The block groups within the study area are predominantly Caucasian. As shown in **Table 3-5**, the percentage of minority population in Census Tract 9726.01, Block Group 1 (9.26%) is higher than percentage of minority population in West Virginia (8.02%). Census Tract 9727.01, Block Group 1 and Census Tract 9726.01, Block Group 1 have percentages of minority populations smaller than their reference counties and states (USCB 2015-2019b).

Table 3-5: 2015-2019 Minority and Hispanic Populations

	West Virginia	Jefferson County	Census Tract 9726.01, Block Group 1	Census Tract 9727.01, Block Group 1*	Virginia	Loudoun County	Census Tract 6101.01, Block Group 1*
Total Population¹	1,817,305	56,506	1,922	978	8,454,463	395,134	2,528
Total Non-Minority	1,671,546 91.98%	47,020 83.21%	1,744 90.74%	966 98.77%	5,227,569 61.83%	221,708 56.11%	2,178 86.16%
Total Minority^{2,3}	145,759 8.02%	9,486 16.79%	178 9.26%	12 1.23%	3,226,894 38.17%	173,426 43.89%	350 13.84%
Total Hispanic or Latino	28,368 1.56%	3,242 5.74%	44 2.29%	6 0.61%	792,001 9.37%	53,812 13.62%	105 4.15%
Non-Hispanic or Latino Minority⁴	117,391 6.46%	6,244 11.05%	134 6.97%	6 0.61%	2,434,893 28.80%	119,614 30.27%	245 9.69%
<i>Black or African American Alone</i>	65,848 3.62%	3,460 6.12%	48 2.50%	0 0.00%	1,588,726 18.79%	28,667 7.26%	79 3.13%
<i>American Indian and Alaskan Native Alone</i>	3,593 0.20%	136 0.24%	0 0.00%	0 0.00%	18,092 0.21%	882 0.22%	0 0.00%
<i>Asian Alone</i>	14,319 0.79%	769 1.36%	17 0.88%	0 0.00%	536,076 6.34%	72,940 18.46%	97 3.84%
<i>Native Hawaiian and Other Pacific Islander Alone</i>	404 0.02%	0 0.00%	0 0.00%	0 0.00%	5,146 0.06%	301 0.08%	0 0.00%
<i>Some Other Race</i>	3,292 0.18%	407 0.72%	11 0.57%	0 0.00%	21,750 0.26%	1,722 0.44%	0 0.00%
<i>Two or More Races</i>	29,935 1.65%	1,472 2.61%	58 3.02%	6 0.61%	265,103 3.14%	15,102 3.82%	69 2.73%

Source: USCB 2015-2019b

¹ Total population comprises Total Non-Minority and Total Minority Populations.

² Minority is defined as all races/ethnicity groups except non-Hispanic or Latino White alone.

³ Total Minority is the Total Hispanic or Latino and the Non-Hispanic or Latino Minority combined.

⁴ Non-Hispanic or Latino Minority is defined as all non-Hispanic or Latino races except for non-Hispanic or Latino White alone.

* Block Groups where the Action Alternative work is proposed

Shading represents block groups with higher percentages compared to reference values which is either state or county



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Low-income Populations

Table 3-6 lists low-income populations in the 1-mile Study Area. The higher percentages of low-income population in the study area compared to the reference geographies (county and state) are shown in the shaded cells in **Table 3-6**. Census Tract 9727.01, Block 1, has 12.37% of people with incomes below the poverty level (Table 3-6 and Figure 3-1), which is higher than Jefferson County (9.72%), but less than West Virginia (17.56%). Census Tract 9726.01, Block Group 1, and Census Tract 6101.01, Block Group 1, had smaller percentages of people with incomes below the poverty level compared to their reference geographies (USCB 2015–2019e). Most of the population in Census Tract 9727.01, Block Group 1 and Census Tract 6101.01, Block Group 1, are located outside of the Study Area (Figure 3-1).

Table 3-6: 2012-2019 Low-Income Populations

	Population for Whom Poverty Status Is Determined	Income in Past 12 Months Below Poverty Level
West Virginia	1,765,715	310,044 17.56%
Jefferson County	54,907	5,336 9.72%
Census Tract 9726.01, Block Group 1	1,911	178 9.31%
Census Tract 9727.01, Block Group 1*	978	121 12.37%
Virginia	8,201,608	865,691 10.56%
Loudoun County	393,005	13,342 3.39%
Census Tract 6101.01, Block Group 1*	2,520	41 1.63%

Source: USCB 2015-2019e

* Block Groups where the Action Alternative work is proposed

Environmental Impacts

There are EJ populations identified within the Study Area. This analysis concluded the following:

- There are minority populations in Census Tract 9726.01, Block Group 1 in comparison to the state of West Virginia.
- There are low-income populations in Census Tract 9727.01, Block Groups 1 in comparison to Jefferson County.

The No-Action Alternative will affect these populations, as the continued deterioration of the rock formations adjacent to US 340 will result in continuing rock slides, which will cause closures of US 340. However, since US 340 will be closed to all traffic (both EJ and non-EJ populations), no disproportionately high and adverse effects on EJ populations will occur under the No-Action Alternative.

Under Action Alternative, the Preferred Alternative, US 340 will be closed to all traffic during the remediation efforts. Likewise, EJ and non-EJ pedestrians generally do not use this section of US 340 due to it being heavily trafficked and containing very narrow shoulders. WVDOH will include a requirement in the contract plans and specifications that the contractor must provide reasonable accommodation for traffic and pedestrians during construction.

Closure of US 340 during construction activities will equally affect all traffic (both EJ and non-EJ populations) using the roadway. Since the US 340 roadway will be closed to all traffic during remediation activities, no disproportionately high and adverse effects on EJ populations will occur under the Action Alternative.

Under the Action Alternative US 340 will be closed to all traffic during the remediation efforts. Likewise, EJ and non-EJ pedestrians generally do not use this section of US 340 due to it being heavily trafficked and containing very narrow shoulders. WVDOH will include a requirement in the contract plans and specifications that the contractor must provide reasonable accommodation for traffic and pedestrians during construction.

Closure of US 340 during construction activities will equally affect all traffic (both EJ and non-EJ populations) using the roadway. Since the US 340 roadway will be closed to all traffic during remediation activities, no disproportionately high and adverse effects on EJ populations will occur under the Action Alternative.

Mitigation

Representatives of WVDOH will work with the surrounding area to post notices regarding US 340 prior to and during construction to inform all users of the temporary closure during the construction phase. This notice will inform the public of the approximate closure period and the availability of the US 340 roadway, as well as other reasonable accommodation as developed by the contractor. WVDOH has conducted public meetings and collected comments on Thursday, February 6, 2020 in regard to the proposed project.

3.1.2. Right-of-Way and Displacements

The anticipated right-of-way acquisitions and temporary easements were developed as part of the Design Study and are based on preliminary cut/fill lines for Action Alternative.

Environmental Impacts

The anticipated right-of-way acquisitions and temporary easements are summarized in **Table 3-7**. The No-Action Alternative will not require any temporary or permanent easements. The Action Alternative will require three (3) temporary construction easements on NPS property. There will be no displacements associated with the No-Action or Action Alternatives.

3.1.3. Community Facilities and Services

Community facilities are those that are open to the community for gatherings or public services. There are no community facilities within the study area. The nearest community facilities are located in the town of Harpers Ferry. Other publicly owned facilities, including parks, are described in subsequent sections of the EA.

School Facilities

There are multiple schools whose districts are within the 1-mile Study Area radius in the town of Harpers Ferry. Students from these school districts may use US 340 to commute to their school facilities and be impacted by the Action Alternative. There is one preschool (the Bolivar Christina Academy), two elementary schools (Blue Ridge Elementary School and Shipley Elementary School), one middle school (Harpers Ferry Middle School) and two high schools (Jefferson High School and Washington High School) whose students may use US 340.

Cemeteries

The Harpers Cemetery, St. Peter’s Cemetery and the gravesite of Robert Harper are located within the 1-mile Study Area, in Harpers Ferry, WV. St. Peter’s Cemetery is an active cemetery. The Harpers Cemetery and the gravesite of Robert Harper are located within the HFNHP.

Emergency Services

There are multiple law enforcement departments located on either side of the Study Area that may utilize US 340 to respond to emergency calls. On the north/west side of the Study Area in West Virginia are the Jefferson County Sheriff’s Department and the Harpers Ferry Police Department, which work in conjunction with each other and the NPS. On the southern side of the Study Area in Virginia, there are the Loudoun County, VA Sheriff’s Department, the Purcellville VA, Police Department, and the Brunswick, MD Police Department.

As these emergency service departments utilize the Study Area, they would be affected by temporary closures of US 340 during the construction activities in during the Action Alternative.

Health Care Facilities

The WVU Medicine - Harpers Ferry Family Medicine is located with the 1-mile radius of the Study Area in Harpers Ferry, WV. There are hospitals and ambulance services outside of the Study Area on each side of US 340 which may use the roadway during emergencies. In West Virginia, there is the Jefferson Memorial Hospital and Jefferson County Ambulance Authority in Ranson, WV. In Maryland across the Potomac River, there is the Frederick Health Hospital in Frederick, MD and the Brunswick Volunteer Ambulance in Brunswick, MD.

Worship Facilities

There are seven places of worship located within the 1-mile radius of the Study Area. All the places of worship are churches located in the town of Harpers Ferry, WV; St. John’s Lutheran Church, Camp Hill – Wesley United Methodist Church, Gospel Chapel Assembly of God, St. Peter’s Roman Catholic Church, Curtis Freewill Baptist Church, St. John’s Episcopal Church, and Bolivar United Methodist Church.

Public Transportation

The Amtrak Capitol Limited line and the MARC Brunswick line are two train lines that service the Study Area with a station in Harpers Ferry. The Amtrak Capitol Limited line travels from Martinsburg, WV, through Harpers Ferry, WV, to Rockville, MD. The MARC Brunswick line is a commuter line that travels through Harpers Ferry, with stops at nearby Duffields, WV and Brunswick, MD. Both train lines pass through the Study Area on the opposite side the Potomac River and do not travel adjacent to US 340. Neither train lines should be affected by the proposed project, with the exception of increased usage due to temporary closures of US 340 for the proposed project work.

The Eastern Panhandle Transit Authority (EPTA), which has stations throughout West Virginia and Maryland, services the surrounding areas of the Study Area. The EPTA MARC-C and MARC- H bus routes traverse the Study Area using US 340 to stations in Harpers Ferry, WV and Brunswick, MD. These bus routes would be affected by the temporary closures of US 340.

Other Facilities

The Harpers Ferry Post Office and Hillside Chile Care/Development Center are both located within the town of Harpers Ferry on Washington St, west of the Study Area.

Environmental Impacts

The No-Action Alternative could affect access to community facilities over time because US 340 is a heavily trafficked route used by the public throughout the area. Without remediation of the rock outcrops, rock slides will continue, which will impact the safety of the public using US 340 and result in continued closures of the roadway. The No-Action Alternative could increase emergency response times as a result of these temporary closures to US 340 for all traffic and related detours.

The Action Alternative will result in temporary closures of US 340 which will have to be communicated with local emergency responders. Regarding public transportation, the Action Alternative will require a temporary re-route of local bus service during construction.

The Action Alternative will require an automobile and truck detour during construction, as discussed in Section 3.4. The detour will be temporary and short term and will not significantly increase travel time. As this area of US 340 is not used for pedestrian access, accommodations for pedestrian access during construction will not be needed.

Mitigation

No mitigation is warranted.

3.1.4. Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities, combined with public transportation, are key elements of an area's transportation network. Within the Study Area, there are no known bicycle or pedestrian facilities along US 340, as it is a heavily trafficked roadway with narrow shoulders.

Environmental Impacts

The No-Action Alternative and the Action Alternative will not affect pedestrian and bicycle facilities as they currently do not exist within the Study Area and it is not within the scope of work of the Action Alternative to develop them.

Mitigation

No mitigation is warranted.

3.1.5. Community Cohesion

Community cohesion results from the interaction of persons and groups within a community. Generally, this interaction is based on physical (e.g., proximity and shared commercial and community facilities) or social (e.g., shared background, values, or goals) connections. Community cohesion impacts result when these physical and social connections are altered. To identify potential impacts to community cohesion, windshield, walking, and desktop surveys were performed within the study area.

The project is located outside the town of Harpers Ferry, where there are shared commercial and community facilities. However, there are various neighborhoods, residential areas, and community facilities located on both sides of the Study Area in the nearby villages, towns, and cities. US 340 serves as the main connection between the town of Harpers Ferry, WV, village of Loudoun Heights, VA, and the city of Brunswick, MD.

Environmental Impacts

The No-Action Alternative could potentially result in closure of the roadway due to rockfalls and necessary cleanup and maintenance activities. A detour would be required during these activities. The temporary road closures would not result in permanent impacts to community cohesion. The Action Alternative would require a detour that would

be in place for approximately 60-days. The detour would not result in permanent impacts to community cohesion. Impacts associated with the detour would be temporary.

Mitigation

Representatives of WVDOH will meet with local officials, local schools, residents, and businesses and/or publish notifications of traffic detours in local newspapers and through other appropriate media.

3.2. Cultural Resources

Cultural resources are historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. Depending on the condition and historic use, such resources might provide insight into the cultural practices of previous civilizations, or they might retain cultural or religious significance to modern groups.

Cultural resources that are listed in or eligible for listing in the National Register of Historic Places (NRHP) are known as historic properties. Section 106 of the National Historic Preservation Act (NHPA), as amended and its implementing regulations at 36 CFR Part 800, requires federal agencies (or their designees) to assess the impact of their undertakings on historic properties in the undertaking's Area of Potential Effects (APE). The APE is the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR 800.16[d]). Because the Project crosses state lines, WVDOH consulted under Section 106 with both the Virginia and West Virginia State Historic Preservation Officers (SHPO).

As a part of the Section 106 process, WVDOH has defined the APE in consultation with the SHPOs and the NPS. The Project APE is composed of an archaeological APE and an architectural APE. The APE takes into account direct and indirect effects of the Project, as well as temporary and permanent effects resulting from construction activities. Pertinent to the present project are effects such as the alteration of a historic property and visual effects such as changes to the setting of a historic property where the setting contributes to its significance. The archaeological APE consists of three non-contiguous areas that collectively measure approximately 11.3 acres and the architectural APE for the project generally consists of a 0.25-mile buffer that extends from the project improvements on the west, north, and east sides, and follows the ridge of the northern

slope of Loudoun Heights on the south side. The architectural APE extends approximately 1,000 feet into Virginia from the West Virginia/Virginia border.

All work and reporting meet the Secretary of the Interior's Standards for Preservation Planning, Standards for Identification, and guidelines of the respective SHPO.

3.2.1. Archaeological Resources

A Phase I archaeological investigation was conducted to identify cultural resources, evaluate the potential for archaeological resources, document existing ground conditions and topography, and document evidence of prior disturbances to archaeological features. Initial background research was performed in March 2020 using the West Virginia SHPO Geographic Information System (GIS) Map Viewer, the Virginia Department of Historic Resources (VDHR) Virginia Cultural Resource Information System, and the Maryland Historical Trust's Medusa program, the state's cultural resource information system. The APE for archaeology includes all areas that may be affected by ground disturbance or stabilization of the existing US 340 ROW and northern slope of Loudoun Heights. The West Virginia portion of the APE encompasses approximately 10.5 acres, while the portion in Virginia is approximately 0.8 acres. A field reconnaissance of the direct APE was conducted between December 2 and December 4, 2019.

The background investigation identified eight previous archaeological surveys, 78 archaeological sites, 15 NRHP -listed properties, 14 Civil War-era resources, and 2 cemeteries within the 1-mile search radius of the APE; however, none of these are in the direct APE where construction will occur. The Phase I archaeological field investigation included a pedestrian survey of the archaeological APE to identify aboveground resources and determine the appropriate areas for subsurface shovel testing. The existing US 340 ROW within the APE has been heavily disturbed through cutting and filling episodes designed to raise the elevation of the roadway. The portions of the APE south of the existing ROW consist almost entirely of deeply dissected stone outcrop cliffs, ledges, and boulder fields. Slopes within the APE were typically a minimum of 45 to 60 percent, with most areas of the APE exceeding these angles of slope. The pedestrian survey identified no areas appropriate for subsurface shovel testing and no shovel tests were excavated. No archaeological sites were identified within the APE.

The Phase I archaeological survey was submitted to the VDHR on September 8, 2020 and WVSHPO on April 27, 2020.

In letters dated September 21, 2020 from VDHR, and April 28, 2020 from WVSHPO, the agencies concurred with the finding that no further archaeological investigation is necessary because there are no archaeological resources within the (see Appendix C).

3.2.2. Architectural Resources

The architectural APE for the project generally consists of a 0.25-mile buffer around the proposed Project. The architectural APE extends approximately 1,000 feet into Virginia from the border with West Virginia. The overall architectural APE encompasses portions of West Virginia, Virginia, and Maryland, with the vast majority of the APE located in West Virginia. Using LiDAR data and a GIS model, HDR conducted a viewshed analysis to determine where the project might be visible. Those areas where the project would be most likely to be visible were included within the architectural APE.

Examination of the records at the SHPOs identified nine (9) historic properties within the architectural APE. This included 1 bridge crossing, 5 historic districts, 1 ruin, 1 bridge ruin, and 1 church, 6 of which are located in West Virginia, 2 in Virginia, and 1 that is located in both states (HFNHP). Because all architectural resources within the APE had been previously surveyed and evaluated for listing in the NRHP, many within the last five years, resources within the APE were revisited and photographed but no new survey was completed. Secretary of the Interior-qualified architectural historians conducted site visits in January, March, and June 2020.





During consultation with the NPS and HFNHP, NPS expressed concerns about the visual impacts of the Project on historic properties. They were particularly concerned with the viewshed from five popular areas within the HFNHP, including Maryland Heights, Shenandoah Shoreline, St. Peter's Roman Catholic Church, C&O Canal Towpath, and Jefferson Rock. These sites are popular locations for tourists to view the scenery and landscape and take photographs. These locations also have some of the broadest views of the Project area.

HDR used LiDAR data collected for the project to develop viewshed maps from these five resources that show the extent the Project would be visible from these five locations. Photographs were also taken from these site locations to the Project area to show the existing views. Images taken indicate that even with the leaves off the trees, the existing roadway is difficult to see through the trees. It is also difficult to see the existing rock outcroppings that will need to be scaled or draped. These visual effects were taken into account during the assessment of effects.

Historic architectural properties and their individual assessment of effects is located in **Table 3-7**. The Assessment of Effects report was submitted to the VASHPO on September 8, 2020 and WWSHPO on January 20, 2021. WVDOH determined there would be no adverse effects on historic properties within the architectural APE. The VASHPO concurred with the finding in a letter dated September 21, 2020 and the WWSHPO concurred in a letter dated January 21, 2021 (Appendix C).

Table 3-7: Assessment of Effects

Photograph	ID Number	Name	Location	NRHP Status	Assessment of Effect
	NR-460/ WA-III-027 (MD)/ 78001484 (WV)	B&O Railroad Potomac River Crossing (Bridge, Potomac River & Tunnel)	Confluence of Shenandoah and Potomac Rivers, MD/WV	Listed	No adverse effect
	66000041 (NPS/WV)/ WA-III-072 (MD)/ 053-1094 (VA)	Harpers Ferry National Historical Park	Harpers Ferry Road, MD/VA/WV	Listed	No adverse effect
	79002584 (NPS/WV)	Harpers Ferry Historic District	Harpers Ferry, WV	Listed	No adverse effect
	66000036 (NPS/WV)/ WA-VI-048 (MD)	Chesapeake and Ohio Canal National Historic Park (C&O Canal)	Potomac River, from Georgetown, DC to Cumberland, MD	Listed	No adverse effect
	02000287 (WV)	Bollman Bridge, Wemwag or Latrobe Bridge (B&O Railroad Potomac River Bridge)	Confluence of Potomac and Shenandoah Rivers, WV/MD	Listed	No adverse effect

Photograph	ID Number	Name	Location	NRHP Status	Assessment of Effect
	73001915 (WV)	St. Peter's Roman Catholic Church	Church Street and Jefferson Rock Trail, WV	Listed	No adverse effect
	01000785 (WV)	Niswarner Tract/Sherwood Property (Ruins)	West side of Chestnut Hill Road, WV	Listed	No adverse effect
	053-6297 (VA)	Between the Hills/Harpers Ferry Rural Historic District	Loudoun County, VA	Eligible	No adverse effect
	053-6247 (VA)	Study Area for the Battle of Harpers Ferry	Loudoun County, VA	Eligible	No adverse effect

Under the No-Action Alternative, WVDOH will continue to conduct maintenance activities on the rock slide areas. No remediation treatments would be used and no adverse effects to historic properties would occur.

Overall, the Action Alternative will have No Adverse Effect on historic properties in the APE. The proposed remediation efforts would have no effect on archaeological resources. Treatments would be confined to the rock slope that abuts US 340 and will not extend into the more heavily wooded terrain that contributes to the historic significance and rural character of the historic districts in the APE, including the town site of Harpers Ferry. Due to the location of the project at a steep descent on the hillside, the proposed project components will be minimally or not at all visible from contributing resources to the historic properties in the APE. The proposed remediation treatments consist of steel

components whose colors and materials are visually compatible with the exiting rockface along US 340, and would therefore have minimal or no visual impact on the surrounding environment.

Mitigation

Remediation treatments will be coated with colors that are similar in nature to the existing rock in the study area to further reduce the visibility of the treatments and to make them blend into the surrounding landscape.

3.3. Publicly Owned Land/Section 4(f) Properties

Section 4(f) resources are assessed for impacts under the provisions of the Department of Transportation Act of 1966 and related regulations. All federally funded transportation projects are subject to Section 4(f) of the Department of Transportation Act of 1966, which affords protection to publicly owned properties that are considered significant for recreation or are eligible for the NRHP. The Section 4(f) “use” of a resource is defined and addressed in FhWA Regulations 23 CFR 774.17. A “use” of Section 4(f) property occurs: (1) when land is permanently incorporated into a transportation facility; (2) when there is a temporary occupancy of land that is adverse in terms of the statute's preservation purpose as determined by the criteria in § 774.13(d); or (3) when there is a constructive use of a Section 4(f) property as determined by the criteria in § 774.15.”

FHWA may determine that the use of a Section 4(f) property, including any measure(s) to minimize harm, will have a temporary occupancy, as defined in 23 CFR 774.17. Temporary occupancy occurs when a project either temporarily occupies property from a Section 4(f) resource, but there is no transfer of property. Temporary occupancy can be an exception under 23 CFR 774.13(d), an adverse temporary occupancy does constitute a Section 4(f) use. If a temporary occupancy does not meet all five of the following criteria (23 CFR 774.13(d)), it is considered adverse:

- Duration of project must be temporary, i.e., less than the time needed for construction of the project and there is no change in ownership of the land.
- Scope of work must be minor, i.e. the magnitude of the changes to the Section 4(f) property are minimal.
- There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis.

- The land being used must be fully restored to a condition which is at least as good as that which existed prior to the project; and
- There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) property regarding the above conditions.

The Section 4(f) property must be returned to a condition at least as good as that which existed prior to the project.

A portion of the slide areas within the US 340 project area are on property owned by the HFNHP. The area associated with the slides are noted to be used by climbers according to the NPS Climbing at Harpers Ferry NHP website. Climbing points of interest were identified within the slide areas in WVDOH ROW and NPS property. Remediation activities may have the potential to affect some climbing activities and the area would need to be temporarily closed to rock climbing while the remediation activities are ongoing. If climbers are using the rock face associated with WVDOH right-of-way, impacts to climbers are not taken into consideration as this area belongs to a transportation agency. The area is a vertical rock face extending in height from 150 feet to 600 feet above US 340. The Loudon Heights Trail runs above the rock slide areas and the Appalachian Trail is located approximately 0.5 miles west of the Study Area.

Based on the nature of the project, the “use” of the Section 4(f) property (HFNHP) meets the criteria for temporary occupancy. In a letter dated June 21, 2021, the HFNHP, the official with jurisdiction, concurred with the temporary occupancy determination (Appendix B).

Environmental Impacts

The No-Action Alternative would not impact the HFNHP Property.

The Action Alternative will result in the removal of loose rock and minor vegetation associated with these areas, as well as temporary easements adjacent to the slide repair. These areas total approximately 0.521 acres of HFNHP Property. Additionally, the Loudon Heights Trail will not be directly impacted; however, temporary closures of the trail may be warranted when slide repair activities may be unsafe for trail users. No impacts to the Appalachian Trail are anticipated.

A determination of temporary occupancy has been made and the signed letter from the Official with Jurisdiction is included in Appendix B.

Mitigation

Signage will be posted for trail users identifying closures when slide repair activities may be unsafe for trail users.

3.4. Natural Environmental Impacts

The natural environment includes vegetation, wetlands, wildlife, and other natural resources within which humans live. The balances between the benefit to humans and the cost to the natural environment are evaluated in the following sections.

3.4.1. Floodplains

The protection of floodplains and floodways is required by Executive Order 11988; USDOT Order 5640.2, Floodplain Management and Protection; Federal-Aid Highway Program Manual 6-7-3-2, Location and Hydraulic Design of Encroachments on Floodplains; and 23 CFR 650. The intent of these regulations is to avoid or minimize highway encroachments within the 100-year (base) floodplains, where practicable, and to avoid land use development that is incompatible with floodplain values. Where encroachments are unavoidable, the regulations require taking appropriate measures to minimize impacts. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps designate floodplains (100-year and 500-year) associated with the Shenandoah River and the Potomac River within the Study Area. The Study Area is not located within the 100-year floodplain.

Environmental Impacts

The No-Action Alternative will have no impact to floodplains. Based on the nature of the Action Alternative, no impacts to floodplains would occur.

Mitigation

No mitigation is warranted.

3.4.2. Streams

United States Geological Survey (USGS) Harpers Ferry Quadrangle 7.5 minute topographic map (USGS, 2021a) and field investigations conducted in January 14, 2021 were used to identify and characterize rivers and streams within the study area. The confluence of the Shenandoah River and the Potomac River is located adjacent to the Study Area. Activities conducted in navigable waters of the United States are subject to regulation by United States Army Corps of Engineers (USACE) under Section 10 of the

Rivers and Harbors Act of 1899. The section of the Shenandoah River and Potomac River within the Study Area are not classified as navigable waters, according to Section 10 of the Rivers and Harbors Act of 1899.

Activities involving the placement of fill into certain wetlands and other bodies of water in West Virginia and Virginia are regulated by USACE through Section 404 of the federal Clean Water Act (CWA). Section 404 of the CWA grants the United States Environmental Protection Agency (USEPA) and USACE regulatory power over “Waters of the United States,” as defined by 33 CFR §§ 328.3 and 329.4.

Environmental Impacts

There are no anticipated impacts to the Shenandoah River and the Potomac River under the No-Action or Action Alternative.

Mitigation

No mitigation is warranted.

3.4.3. Wetlands

The study area was reviewed for the occurrence of wetlands using the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetlands Mapper tool (USFWS, 2021a). Activities involving the placement of fill into certain wetlands and other bodies of water in West Virginia and Virginia are regulated by USACE through Section 404 of the CWA. Section 404 of the CWA grants USEPA and USACE regulatory power over “Waters of the United States,” as defined by 33 CFR §§ 328.3 and 329.4.

According to NWI, there are two palustrine, forested wetlands adjacent to the proposed project within the Study Area. The NWI mapper projects one of the wetlands encroaching the proposed construction boundary near the edge of US 340 southbound lanes. A field observation was conducted by HDR staff on January 14, 2021 to confirm the existence and location of wetlands within the Study Area. The field observation concluded that both wetlands are located outside of the proposed project boundary.

Environmental Impacts

The No-Action and the Action Alternative will not cause water quality impacts.

Mitigation

Since the project is located adjacent to the Potomac River and Shenandoah River, standard construction best management practices will be implemented to prevent any potential impacts to the water quality of the adjacent rivers.

3.4.4. Water Quality

The Shenandoah River and the Potomac River are listed as high quality streams (WVDNR, 2001). Streams in West Virginia are classified as high quality if they are stocked with trout or contain native trout populations and/or warm water streams over 5 miles in length with desirable fish populations and public use. High-quality streams provide significant or irreplaceable fish, wildlife, and recreational resources. They are of vital concern to WVDNR in fulfilling its responsibility to all citizens to protect stream resources.

Environmental Impacts

The No-Action and the Action Alternative will not cause water quality impacts.

Mitigation

Standard construction best management practices will be implemented to prevent any potential impacts to the water quality of the adjacent rivers.

3.4.5. Wild and Scenic Rivers

The NPS's National Wild and Scenic Rivers System online mapping tool was reviewed for the study area. There are no wild and scenic rivers in the study area (NPS, 2021).

Environmental Impacts

No impacts to Wild and Scenic Rivers will occur.

Mitigation

No mitigation is warranted.

3.4.6. Natural and Wild Areas

The WVDNR Wildlife Management Area website (WVDNR, 2021) and the Virginia Department of Wildlife Resources (VDWR, 2021) were reviewed for natural and wild areas. There are no natural or wild areas located in the study area.

Environmental Impacts

There are no anticipated impacts to natural or wild areas.

Mitigation

No mitigation is warranted.

3.4.7. Vegetation

Land Cover Types and Vegetation

The study area consists of the US 340 roadway, the developed town of Harpers Ferry, and forested areas of the HFNHP under the jurisdiction of the NPS. The Study Area includes oak-hickory forest, talus woodland, cliff and rock outcrops, and boulder fields. Dominant canopy species include chestnut oak (*Quercus montana*), red oak (*Q. rubra*), black oak (*Q. velutina*), black hickory (*Carya texana*), pignut hickory (*C. glabra*), and tuliptree (*Liriodendron tulipifera*). Adjacent to the study area is a power line and forest area associated with Harpers Ferry National Historical Park.

Environmental Impacts

Under the No-Action Alternative, maintenance associated with the slide areas will be required; therefore, it is anticipated that there will be maintenance-related impacts to land cover or vegetation. The Action Alternative will result in the removal of trees and vegetation within the Study Area to conduct removal of loose rock and remediate the slide areas adjacent to US 340. The tree trimming areas encompass 1.024 acres of the total project boundary of 14.087 acres

Mitigation

Areas where vegetation will be removed are primarily areas where vegetation is growing out of crevices in the rock where freeze/thaw activity has occurred, and enough soil is present in the crevice to allow rooted vegetation. This vegetation can contribute to the existing slide problem. Revegetation of these areas will likely not be possible.

3.4.8. Wildlife

Migratory Birds

The USFWS Information, Planning, and Consultation system (IPaC) lists 13 migratory birds that could potentially be located in the study area (USFWS 2021b). These bird species are summarized in **Table 3-8**.

Table 3-8: Migratory Birds Potentially in Study Area

Common Name	Scientific Name	Season
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Year Round
Black-capped Chickadee	<i>Poecile atricapillus praticus</i>	Breeding
Canada Warbler	<i>Wilsonia canadensis</i>	Breeding
Cerulean Warbler	<i>Dendroica cerulea</i>	Breeding
Henslow's Sparrow	<i>Ammodramus henslowii</i>	Breeding
Golden Eagle	<i>Aquila chrysaetos</i>	November
Kentucky Warbler	<i>Oporomis formosus</i>	Breeding
Prairie Warbler	<i>Dendroica discolor</i>	Breeding
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Breeding
Wood Thrush	<i>Hylocichla mustelina</i>	Breeding
Rusty Blackbird	<i>Euphagus carolinus</i>	April/May
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	Year Round
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	Breeding

With the exception of the Bald Eagle (*Haliaeetus leucocephalus*), all of the migratory birds are considered “birds of conservation concern” (USFWS 2021b).

The proposed project lies within the Atlantic Flyway, which is one of several primary migration routes for North American birds (USFWS 2021c). Undeveloped park, forest, prairie, and wetland habitats in the region provide important habitats for migrating bird species. These various habitats support critical flyways for migratory birds.

Terrestrial Wildlife

Terrestrial wildlife habitat in the study area, including the HFNHP which contains forested areas, is fragmented by the previous construction of US 340 and smaller roads and by the conversion of land for residential, commercial, and industrial uses.

Aquatic Wildlife

There are no streams or wetlands within the study area; therefore, no aquatic wildlife is present.

Environmental Impacts

The No-Action Alternative will not have impacts to wildlife or migratory birds. Impacts such as wildlife mortality are expected from the construction and the subsequent operation and maintenance of Action Alternative.

For the Action Alternative, construction impacts to terrestrial wildlife species and migratory birds in the study area are expected to be minor and short term as remediation

activities may temporarily displace wildlife, but they will likely return after construction or find alternative habitat in the surrounding undeveloped areas. In addition, construction activities will occur within a discrete area and will affect a limited number of trees. A total of 1.024 acres will be affected by tree trimming. Maintenance activities such as herbicide application in the study area are not expected to significantly affect wildlife.

Noise associated with project-related construction activities could temporarily affect migratory bird species located in the vicinity of Action Alternative. Standard construction best management practices will be implemented to address the temporary effects.

Mitigation

WVDOH will work with its contractors to minimize, to the extent reasonably practicable, construction-related noise disturbances. According to the WVDOH 2002 *Construction Manual*, during pre-construction, the Engineering Division will:

- Identify land uses or activities that may be affected by noise from construction.
- Determine appropriate noise criteria limits for the identified receptors.
- Document any measures required during construction to minimize or eliminate adverse construction noise impacts to the surrounding area.

In addition, the project special provisions will document any restrictions or noise abatement measures required of the contractor. These could include shields or physical barriers or limiting work hours, among others.

To minimize impacts to aquatic resources, WVDOH will require the contractor to prepare an Erosion and Sediment Control Plan, and the disturbed areas will be re-vegetated with native species.

3.4.9. Rare, Threatened, and Endangered Species

In compliance with the Endangered Species Act of 1973 (16 United States Code [USC] 1536) and the Migratory Bird Treaty Act (16 USC 703–712), USFWS determines whether a federal action is likely to adversely affect, harm, or jeopardize the continued existence of any federal threatened, endangered, or candidate (T&E) species or its habitat. USFWS also designates federally protected, threatened, endangered, and candidate species.

WVDOH screened the study area using their ArcGIS Screening Tool associated with the MOU between FHWA and USFWS to assess the presence of T&E species in the study

area. Screening map is included in Appendix C. West Virginia has no state endangered species legislation; therefore, the only species listed as threatened or endangered in the state are those listed as such by the federal government (West Virginia Conservation Agency 2016). WVDOH also coordinated with the Virginia Department of Conservation and Recreation and in a letter dated March 26, 2021 indicated that while there are natural heritage resources within the project boundary, they do not anticipate the project would adversely impact these resources (Appendix C).

Environmental Impacts

The No-Action Alternative will not affect rare, threatened or endangered species or their habitat.

The Action Alternative will not affect rare, threatened or endangered species or their habitat. A letter was sent to USFWS on July 15, 2021 stating the WVDOH is making a Not Likely to Adversely Affect (NLAA) determination on the US 340 project on behalf of FHWA and requesting concurrence on the determination. The determination was made that the Indiana bat should not be adversely affected because only one acre of trees will be cleared, and the project is not in a known-use area. In addition, the northern long-eared bat should not be adversely affected by the project due to the small amount of tree clearing and the project is not in a known-use area. Additionally, any effects to the northern long-eared bat would be covered under the 4(d) rule (Appendix C).

The Action Alternative will affect approximately 1.021 acres of vegetation including some trees from the slope remediation areas; however, any species occupying these trees will likely relocate to habitat immediately adjacent to the area from which trees and vegetation will be removed.

Mitigation

No mitigation is required; however, if during construction any of these species are identified, USFWS will be notified and applicable mitigation measures at the time of construction will be established.

3.4.10. Aesthetics

The visual environment in the study area includes natural, historic, and water resources that provide aesthetic value. The Study Area is located within the viewshed of the HFNHP, under the jurisdiction of the NPS. The National Park is a highly visited tourist area, enjoyed for its nearby community of Harpers Ferry consisting of historic structures, and

its protected, natural environment utilized by hikers. It is, therefore, important to retain the areas natural appearance and aesthetic value.

NPS expressed concerns about the visual impacts of the project on historic properties. They were particularly concerned with the viewshed from five popular areas within the HFNHP, including Maryland Heights, Shenandoah Shoreline, St. Peter’s Roman Catholic Church, C&O Canal Towpath, and Jefferson Rock. These sites are popular locations for tourists to view the scenery and landscape and take photographs. These locations also have some of the broadest views of the Study Area.

To determine how the project may affect the viewshed from these vantage points within HFNHP, a viewshed analysis was conducted using LiDAR data to determine the extent the project would be visible from these locations.

Environmental Impacts

The No-Action Alternative will continue routine maintenance of the slide areas and will have no impact to the aesthetic value.

The Action Alternative will have a minor impact on the viewshed; however, the SHPO determined that there would be no adverse effect to historic resources.

Mitigation

To minimize the impacts to the viewshed, the treatments used to remediate the rock slide areas will be powder coated in a color that is similar to the existing rock that will allow the treatments to blend into the existing rock face.

3.4.11. Air Quality

The Federal Clean Air Act of 1970 (42 USC 7401 et seq.) required USEPA to adopt ambient air quality standards. USEPA has established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants to protect the public from the adverse health effects associated with air pollution. A complete listing of the NAAQS is shown in **Table 3-9**. The primary standards are established as levels that are intended to protect the public health. Secondary standards are required to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Pursuant to the Clean Air Act, USEPA has developed regional or local classifications for each federal criteria pollutant. Areas where pollutant concentrations meet the NAAQS are

classified as “attainment” and areas where concentrations of a pollutant exceed the NAAQS are designated as “non-attainment.”

The Hagerstown/Eastern Panhandle Metropolitan Planning Organization (HEPMPO) is responsible for ensuring that the fiscally constrained 2045 Long Range Transportation Plan (LRTP) and 5-year TIP satisfy air quality conformity requirements.

HEPMPO planning region, including Harpers Ferry, is classified as being in “attainment” for all criteria pollutants. HEPMPPO has made conformity determinations the LRTP and TIP. Both the LRTP and TIP are in conformity for all criteria pollutants (HEPMPO 2021). The project is included in the Fiscal Year 2017–2020 TIP as MPO ID number J2015-05 and is considered “exempt” from air quality conformity analysis (HEPMPO 2016).

Table 3-9: National Ambient Air Quality Standards

Pollutant	Average Time	Primary	Secondary	HEPMPO Designation
Particulate Matter (PM₁₀ = 10 microns or smaller)	24-hour	150 ug/m ³	Same as Primary	Attainment
Particulate Matter (PM_{2.5} = 2.5 microns or smaller)	24-hour Annual Mean	35 ug/m ³ 15 ug/m ³	Same as Primary	Attainment
Sulfur Dioxide (SO₂)	24-hour Annual Mean 3-hour	0.14 ppm 0.03 ppm None	None None 0.5 ppm	Attainment
Carbon Monoxide (CO)	8-hour 1-hour	9 ppm 35 ppm	Same as Primary Same as Primary	Attainment
Ozone (O₃)	8-hour/day	0.075 ppm	Same as Primary	Unclassified
Nitrogen Dioxide (NO₂)	Annual Mean	0.053 ppm	Same as Primary	Attainment
Lead (Pb)	Quarterly Mean	1.5 ug/m ³	Same as Primary	Attainment

Source: USEPA Green Book; HEPMPPO TIP, HEPMPPO 2045 Long Range Plan

Environmental Impacts

No permanent changes to air quality will result from the No-Action Alternative or implementation of Action Alternative. Temporary increases in pollutants from remediation activities may occur and will be short term and will not result in permanent increases in air pollutants.

Mitigation

With the application of appropriate BMPs to limit dust emissions during remediation activities, the Action Alternative will not cause any significant, short-term particulate matter air quality impacts.

3.4.12. Noise

Based on the nature of the project, noise would be limited to remediation activities and would occur only during daytime hours. No additional traffic noise would be introduced to the study area.

Environmental Impacts

The No-Action Alternative will not introduce new traffic noise. There may be some temporary noise during rock slide maintenance activities.

Under the Action Alternative there will be no change in the vertical or horizontal alignment of the existing roadway, no additional through-traffic, and no new auxiliary lanes will be constructed. Therefore, there will be no permanent change to the existing noise condition. WVDOH DD-253 indicates that a noise analysis is not required for such projects.

Temporary noise impacts may occur during rock slide remediation activities but will be short term.

Mitigation

No mitigation is warranted.

3.5. Cumulative and Secondary Impacts

This section considers two types of impacts (cumulative and secondary) that are not directly related to the project but that could be influenced by the project.

CEQ defines cumulative impacts as those “impacts on the environment which result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions” (40 CFR 1508.7). Cumulative impacts are the result of the combined impacts of past, current, and future projects within a project’s geographic area (40 CFR § 1508.7). These impacts are ones, when considered in conjunction with other foreseeable projects that result in a combined effect greater than individual impacts.

Secondary impacts are reasonably foreseeable impacts that could occur in the future or at a distance from the proposed project (40 CFR § 1508.8). Secondary impacts include induced growth and related environmental impacts, such as changes to land use patterns, population density or growth rates, and related impacts on air quality, water, and other natural systems.

The indirect and cumulative impacts analysis used the following guidance documents for determining the potential for impacts:

- *Considering Cumulative Effects Under the National Environmental Policy Act (CEQ 1997)*
- *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis (CEQ 2005)*
- *National Cooperative Highway Research Program (NCHRP) Report 466 – Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects (Transportation Research Board 2002)*

3.5.1. Cumulative Impacts

Based on the nature of the project cumulative impacts would be limited to the closure of US 340 and the timing of other projects in Virginia and Maryland and vegetation removal.

WVDOH has, and will continue to, coordinate with VDOT and MDSHA regarding construction schedules and timing of projects to minimize temporary cumulative impacts associated with detours and road closures in the area.

This project will result in approximately 1.024 acres of impact to vegetation. When combined with other past, present, and reasonably foreseeable future projects, the US 340 project would have minor cumulative impact to vegetation in the area.

Table 3-10: Cumulative Impacts Summary Resulting from the Action Alternative

Resource	Cumulative Impacts
Socioeconomics	
Environmental Justice	None (no disproportionately high and adverse impacts)
Right-of-way Acquisitions and Displacements	No cumulative effect on displacements (no direct impacts)
Community Facilities and Services	The Action Alternative will result in a temporary re-route of the local bus service during construction.
Bicycle and Pedestrian Facilities	No cumulative effect on bicycle facilities (no direct impacts)
Community Cohesion	No cumulative effect on community cohesion.
Change in Travel Patterns	The Action Alternative will result in the temporary re-route of traffic during construction.
Land Use	None
Cultural Resources	
Archaeological Resources	None



Resource	Cumulative Impacts
Historic Resources	None
Publicly Owned Land/Section 4(f) Properties	The Action Alternative will require a temporary use of NPS Property to remediate the rock slide areas along US 340. The Action Alternative will not change the use of the NPS property no cumulative effect on this Section 4(f) property is anticipated.
Natural Resources	
Floodplains	None
Streams	
Wetlands	
Water Quality	
Wild and Scenic Rivers	None
Natural and Wild Areas	None
Vegetation	The Action Alternative, in combination with the present and reasonably foreseeable future actions, will disturb land cover, including vegetation, as a result of remediation activities.
Wildlife	The Action Alternative in combination with the present and reasonably foreseeable future actions, will not likely affect wildlife due to the nature of the project.
Rare, Threatened, and Endangered Species	None
Prime and Unique Farmland	None
Geologic Resources	None
Aesthetics and Visual Resources	The Action Alternative will result in minor changes to aesthetics or visual resources. The action in combination with the present and reasonably foreseeable future actions, may have a cumulative impact to aesthetics and visual resources; however, mitigation to reduce the visibility of the remediation treatments will be utilized.
Groundwater	None
Waste Sites	None
Air Quality	The Action Alternative, in combination with reasonably foreseeable future actions, will likely only have a temporary cumulative effect on air quality. The effect will be temporary and will cease after remediation activities are complete.
Noise	The Action Alternative, in combination with reasonably foreseeable future actions, will likely only have a cumulative effect on noise during construction. This effect will be temporary and will cease after remediation activities are complete.

3.5.2. Secondary Impacts

Based on the nature of the project no secondary impacts would occur.



3.6. Environmental Commitments

Due to the nature of the project, environmental commitments are limited to powder coating of the remediation treatments with colors that will match the natural rock found in the project area. These powder coatings will help to reduce the effect the remediation treatments will have on the aesthetics.



4. Public Involvement

WVDOH conducted a public meeting workshop on February 6, 2020. **Table 4-1** summarizes the purpose and date of the public meeting workshops.

Table 4-1: Public Meeting Workshops

Purpose	Date and Location	End of Comment Period
Pre-NEPA to introduce project, remediation treatments, detour, and next steps.	February 6, 2020: Mather Training Center	March 6, 2020
To present the Environmental Assessment, Section 4(f), and Section 106 evaluation.	TBD	TBD

On February 6, 2020, an informational public workshop meeting was held at the Mather Training Center in Harpers Ferry, West Virginia to present the project including the proposed remediation activities and detour. One hundred and twenty five (125) members of the public, representatives from the NPS, and HEMMPO attended the meeting. During the meeting, the majority of the attendees understood the need for the project, but also expressed concern about the detour.

WVDOH received thirteen (13) formal comments, all of which expressed concern over the detour.

WVDOH will hold a virtual public meeting for comment on the Environmental Assessment on November 9, 2021. The public comment period will be November 9, 2021 through December 9, 2021.

WVDOH also maintained a project website that provided information about the project including the public meeting workshop handouts and displays. The website is located at: <https://transportation.wv.gov/highways/engineering/comment/closed/US340RockSlide/Pages/default.aspx>



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Harpers Ferry WV 25425
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National Park Service
Appalachian Trail Park Office
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304-535-6278

Appalachian Trail Conservancy
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Harpers Ferry, WV 25425
info@appalachiantrail.org
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6. References

- Hagerstown/Eastern Panhandle Metropolitan Planning Organization (HEPMPO). 2016. FY 2017-2020 Transportation Improvement Program.
- HEPMPO. 2018. Direction 2045 Long Range Transportation Plan.
- HEPMPO. 2021. Air Quality. Available at: <https://www.hepmo.net/air-quality>.
- HDR. 2018. Final Phase I Design Study Report, US 340 Rock Slide Investigation Project State Project S319-340-15.78 00, Federal Project NHPP-0340(063)D, Harper's Ferry, Jefferson County, West Virginia.
- HDR. 2020. Bat Portal Assessment for the West Virginia Department of Transportation US 340 Rock Slide Investigation.
- HDR. 2021. Assessment of Effects for the US 340 Rock Slide Repair Project.
- National Park Service (NPS). 2021. Climbing at Harpers Ferry NHP. Available at: <https://www.nps.gov/gis/storymaps/mapseries/v2/index.html?appid=9e938d9319e648c2a773f9fc5170eed2>. Accessed September 21, 2021.
- NPS. 2021. National Wild and Scenic Rivers System. West Virginia Wild and Scenic Rivers. Available at: <https://www.rivers.gov/west-virginia.php>. Accessed February 4th, 2021.
- RK&K. 2020. Phase I Archaeological Identification Survey for the US 340 Rock slide Investigation.
- United States Census Bureau (USCB). 2000. Decennial Census. Table P1: Total Population. Available via the internet at: <http://www.census.gov>. Accessed September 2, 2020.
- USCB. 2010. Decennial Census. Table P1: Total Population. Available via the internet at: <http://www.census.gov>. Accessed September 2, 2020.
- USCB. 2015–2019a. American Community Survey (ACS) 5-Year Estimates. Table B01001: Sex by Age. Available via the internet at: <https://www.census.gov/acs/www/data/data-tables-and-tools/>. Accessed September 2, 2020.
- USCB. 2015–2019b. ACS 5-Year Estimates. Table B03002: Hispanic or Latino Origin by Race. Available via the internet at: <https://www.census.gov/acs/www/data/data-tables-and-tools/>. Accessed September 2, 2020.
- USCB. 2015–2019c. ACS 5-Year Estimates. Table B23001: Sex by Age by Employment Status for the Population 16 Years and over. Available via the internet at: <https://www.census.gov/acs/www/data/data-tables-and-tools/>. Accessed September 2, 2020.
- USCB. 2015–2019d. ACS 5-Year Estimates. Table B19013: Median Household Income in the Past 12 Months (in 2019 Inflation-adjusted Dollars). Available via the internet at: <https://www.census.gov/acs/www/data/data-tables-and-tools/>. Accessed September 2, 2020.

- USCB 2015–2019e. ACS 5-Year Estimates. Table B17021: Poverty Status of Individuals in the Past 12 Months by Living Arrangement. Available via the internet at: <https://www.census.gov/acs/www/data/data-tables-and-tools/>. Accessed September 2, 2020.
- USCB. 2015–2019f. ACS 5-Year Estimates. Table B25003: Tenure. Available via the internet at: <https://www.census.gov/acs/www/data/data-tables-and-tools/>. Accessed August 14, 2018.
- USCB. 2015–2019g. ACS 5-Year Estimates. Table B25002: Occupancy. Available via the internet at: <https://www.census.gov/acs/www/data/data-tables-and-tools/>. Accessed August 14, 2018.
- United States Department of Agriculture. 2021. Natural Resources Conservation Service. Custom Soil Resource Report for Jefferson County, West Virginia, and Loudoun County, Virginia. Accessed February 5, 2021.
- United States Fish and Wildlife Service (USFWS). 2021a. National Wetlands Inventory. Wetlands Mapper. Accessible at: <https://www.fws.gov/wetlands/data/mapper.html>. Accessed January 12, 2021.
- USFWS. 2021b. Information for Planning and Consultation. Accessible at <https://ecos.fws.gov/ipac/location/FU3XG4OYZREIFHTOXOPXH7X5RA/resources#migration-birds>. Accessed February 8, 2021.
- USFWS. 2021c. Migratory Bird Program. Flyways. Accessible at: <https://www.fws.gov/birds/management/flyways.php>. Accessed on February 8, 2021.
- United States Geological Survey (USGS). 2021a. Topographic Maps. Harpers Ferry 7.5-minute Quadrangle Map. Accessible at: <https://www.usgs.gov/core-science-systems/ngp/tm-delivery/topographic-maps>. Accessed January 12, 2021.
- USGS. 2021b. Mineral Resources Online Spatial Data. Mineral Resources Data System. Accessible at: <https://mrdata.usgs.gov/mrds/map-graded.html>. Accessed February 8, 2021.
- Virginia Department of Wildlife Resources (VDWR). 2021. Wildlife Management Areas. Accessible at: <https://dwr.virginia.gov/wp-content/uploads/media/wma-locator.pdf>. Accessed February 5, 2021.
- West Virginia Department of Natural Heritage (WVDNH). 2019. Data Request for bat hibernaculum in Jefferson County West Virginia.
- West Virginia Division of Natural Resources (WVDNR). 2021. Wildlife Management Areas. Accessible at: <http://www.wvdnr.gov/hunting/wmamap.shtm>. Accessed February 5, 2021.
- WVDNR. 2001. West Virginia High Quality Streams. Sixth Edition. Data available at: <http://wvgis.wvu.edu/data/dataset.php?ID=249>



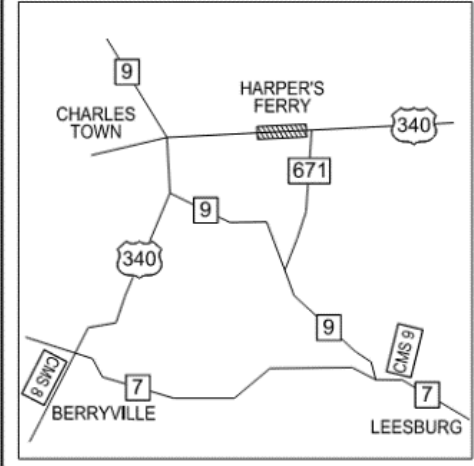
Appendix A

Temporary Traffic Control Options

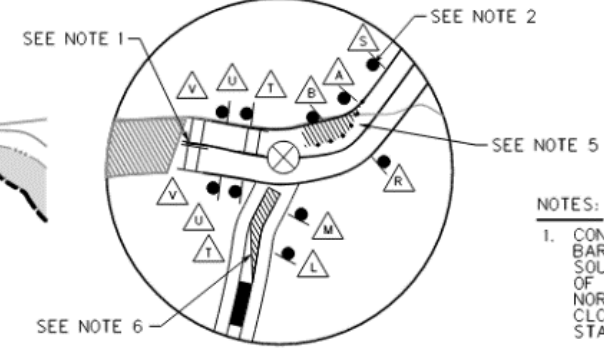


Public Road Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	5	SS19-340-15.78.00	NDPP-0340(065)D	2021	JEFFERSON	22	138

DETAIL "D"



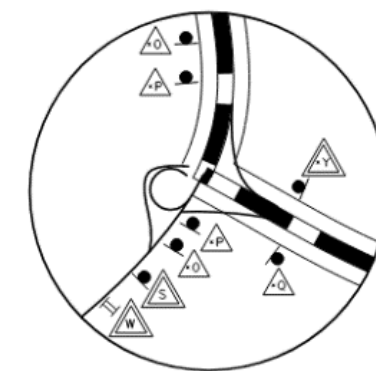
DETAIL "A"



DETAIL "B"



DETAIL "C"



- NOTES:
- CONTRACTOR SHALL USE TYPE III BARRICADES TO CLOSE US 340 SOUTHBOUND LANES IN THE AREA OF THE INTERSECTION. US 340 NORTHBOUND LANES SHALL BE CLOSED WEST OF EXISTING GAS STATION DRIVEWAY.
 - INSTALL SIGN ON BRIDGE PARAPET.
 - CONTRACTOR TO INSTALL TYPE III BARRICADE ON BOTH SHOULDERS ALONG US 340 NORTHBOUND.
 - CONTRACTOR TO INSTALL TYPE III BARRICADE ON BOTH SHOULDERS ALONG CR 32.
- (NOTES CONTINUED BELOW)

- LEGEND
- WORK ZONE
 - TRAFFIC FLOW
 - TRAFFIC SIGNAL
 - US ROUTE
 - STATE ROUTE
 - WV COUNTY ROUTE
 - TYPE III BARRICADE
 - DETOUR ROUTE
 - SIGN ON PORTABLE SUPPORT
 - CHANGEABLE MESSAGE SIGN
 - SIGN ASSEMBLY
 - LARGER SIGN ASSEMBLY
 - OUTSIDE SHOULDER AND MEDIAN SIGN ASSEMBLIES
 - LARGER OUTSIDE SHOULDER AND MEDIAN SIGN ASSEMBLIES
 - ASSEMBLY NOT PART OF STORAGE FROM PREVIOUS PROJECT. QUANTITIES HAVE BEEN ADDED TO QUANTITY TABLE

- NOTES CONTINUED:
- CONTRACTOR SHALL CLOSE EXISTING US 340 SB THRU LANE. ALL TRAFFIC SHALL TURN LEFT FROM THE EXISTING LEFT TURN LANE. REFER TO NOTE 1 FOR TYPE III BARRICADE PLACEMENT. CONTRACTOR SHALL INSTALL A 48"x48" R3-7 (MODIFIED) TO READ "ALL TRAFFIC MUST TURN LEFT". SIGN SHALL BE MOUNTED TO A TYPE III BARRICADE OR TEMPORARY SUPPORT. DRUMS SHALL BE SPACED AT 10' INTERVALS. FOR REFERENCE, THE SPEED LIMIT FOR US 340 IN THIS VICINITY IS 45 MPH.
 - CONTRACTOR SHALL CLOSE NORTHBOUND LEFT TURN LANE OF VA 671 IN ACCORDANCE WITH VA WORK AREA PROTECTION MANUAL TTC 29.1. FOR REFERENCE, THE SPEED LIMIT FOR VA 671 IN THIS VICINITY IS 55 MPH.
 - FIELD ADJUSTMENTS TO TRAFFIC CONTROL MAY BE REQUIRED DUE TO CONFLICTS.
 - PRIOR TO THE DETOUR, CONTRACTOR SHALL COORDINATE THE CLOSURE WITH CHENG HSU (VDOT) @ 703-259-3357 TO ENSURE SIGNAL TIMINGS HAVE BEEN ADJUSTED ACCORDINGLY AT THE INTERSECTION OF US 340 AND SR 671.
 - CONTRACTOR SHALL USE CASE E4 TO CLOSE LEFT LANE AND LEFT TURN LANE OF US 340 NORTHBOUND AT THE INTERSECTION OF SHORELINE DRIVE AND WEST WASHINGTON STREET.

DETOUR LENGTH - 22 MILES

NOT TO SCALE

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CHARLESTON, WV
601-341-6100

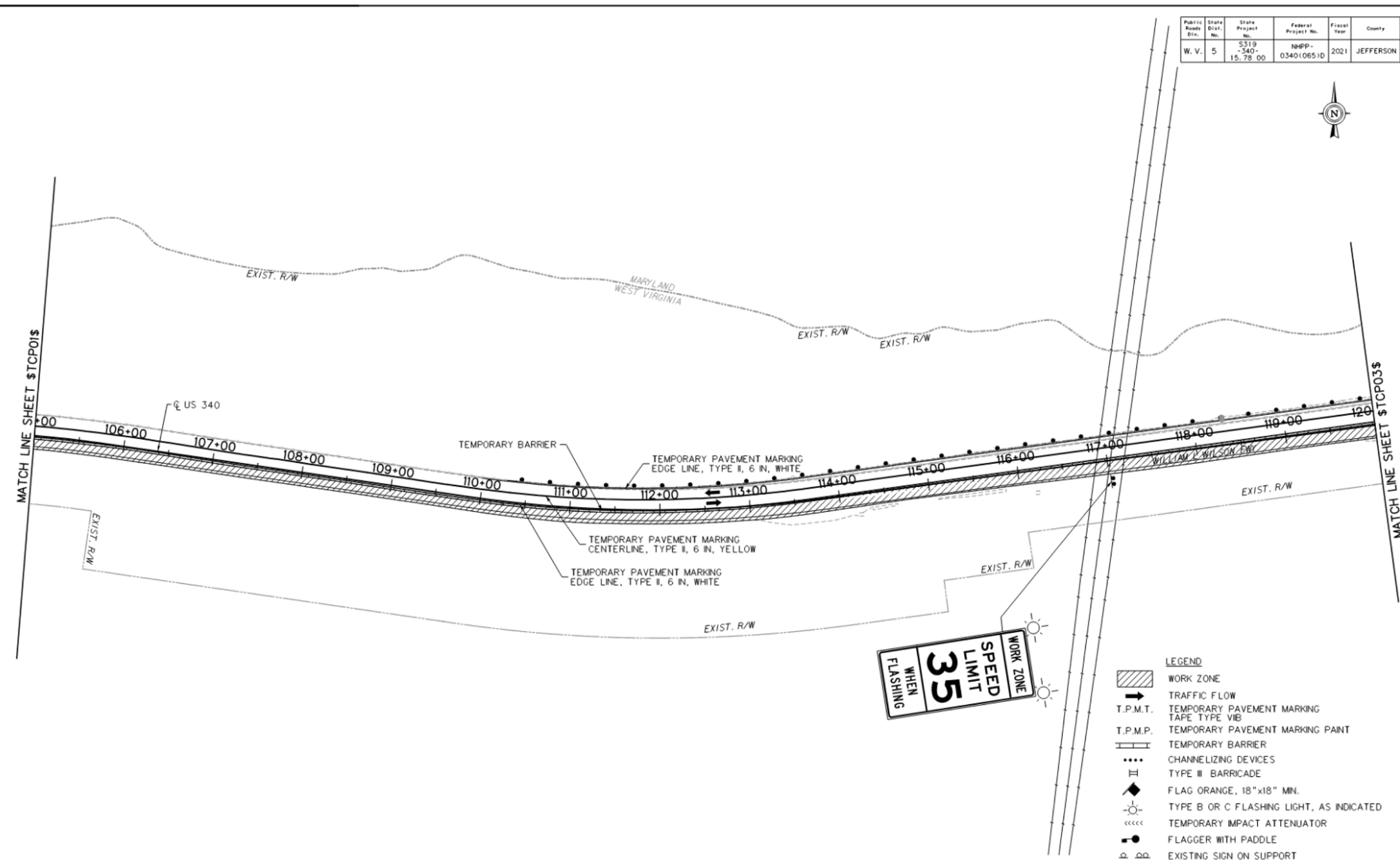
REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
OPTION A TTCP PHASE 1
OPTION B TTCP PHASE 1

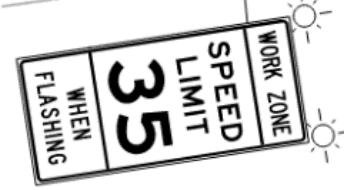
TTCP-8

11/24/2020 GPHALEN

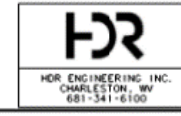
Public Road Dist.	State No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V. 5	5319-340-15.78	00	NHPP-0340(065)D	2021	JEFFERSON	25	138



- LEGEND**
- WORK ZONE
 - TRAFFIC FLOW
 - T.P.M.T. TEMPORARY PAVEMENT MARKING TAPE TYPE VIIIB
 - T.P.M.P. TEMPORARY PAVEMENT MARKING PAINT
 - TEMPORARY BARRIER
 - CHANNELIZING DEVICES
 - TYPE III BARRICADE
 - FLAG ORANGE, 18"x18" MIN.
 - TYPE B OR C FLASHING LIGHT, AS INDICATED
 - TEMPORARY IMPACT ATTENUATOR
 - FLAGGER WITH PADDLE
 - EXISTING SIGN ON SUPPORT
 - PROPOSED SIGN ON SUPPORT



SCALE : 0 50 ft.



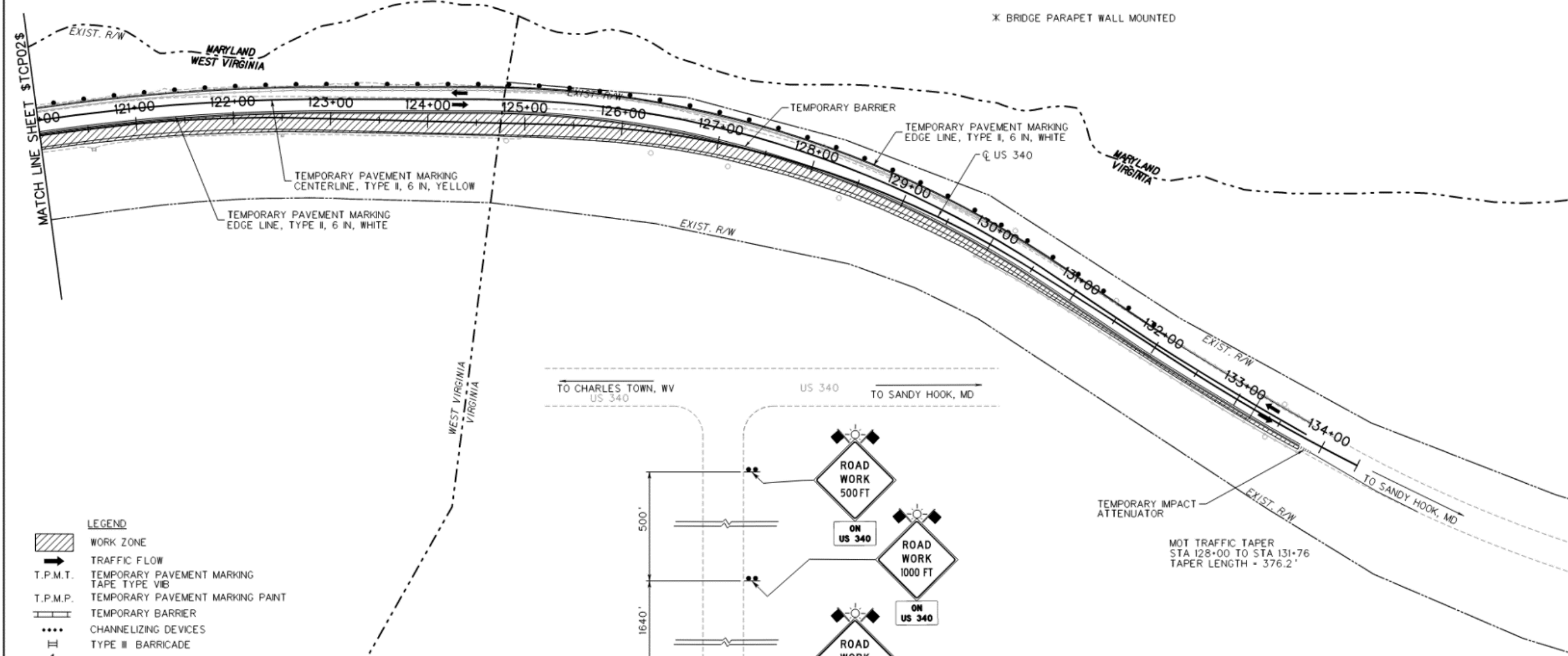
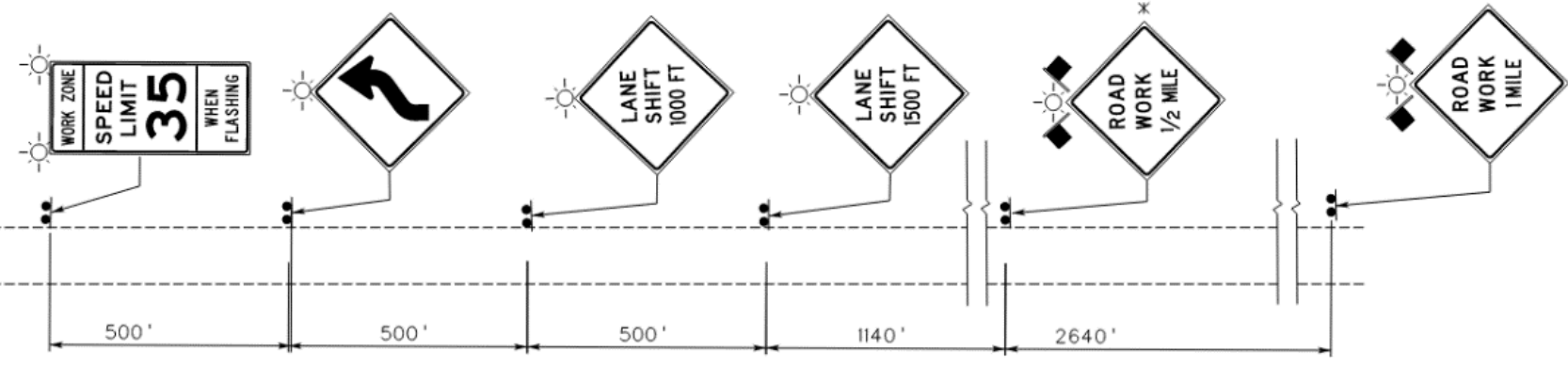
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THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
OPTION B TTCP PHASE 2

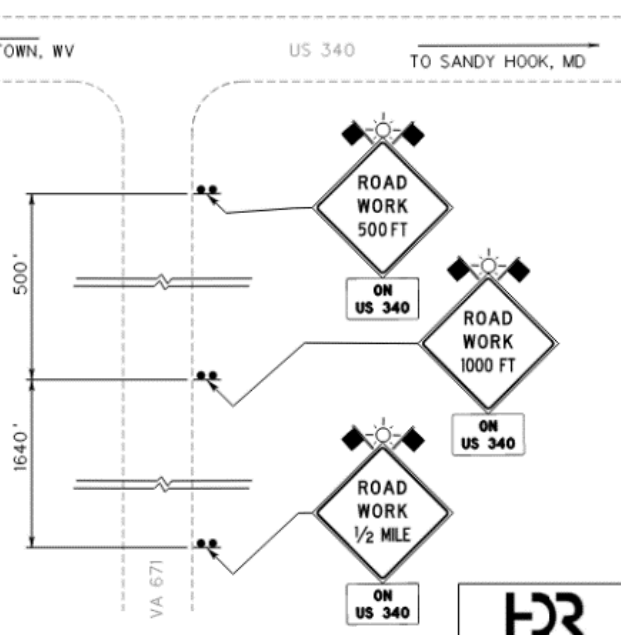
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W. V.	5	S319-540-15.78.00	NHPP-0340(065)D	2021	JEFFERSON	26	138



- LEGEND**
- WORK ZONE
 - TRAFFIC FLOW
 - T.P.M.T. TEMPORARY PAVEMENT MARKING TAPE TYPE VIB
 - T.P.M.P. TEMPORARY PAVEMENT MARKING PAINT
 - TEMPORARY BARRIER
 - CHANNELIZING DEVICES
 - TYPE III BARRICADE
 - FLAG ORANGE, 18"x18" MIN.
 - TYPE B OR C FLASHING LIGHT, AS INDICATED
 - TEMPORARY IMPACT ATTENUATOR
 - FLAGGER WITH PADDLE
 - EXISTING SIGN ON SUPPORT
 - PROPOSED SIGN ON SUPPORT



SCALE : 0 50 ft.

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 HDR ENGINEERING, INC.
 CHARLESTON, WV
 681-341-6100

REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

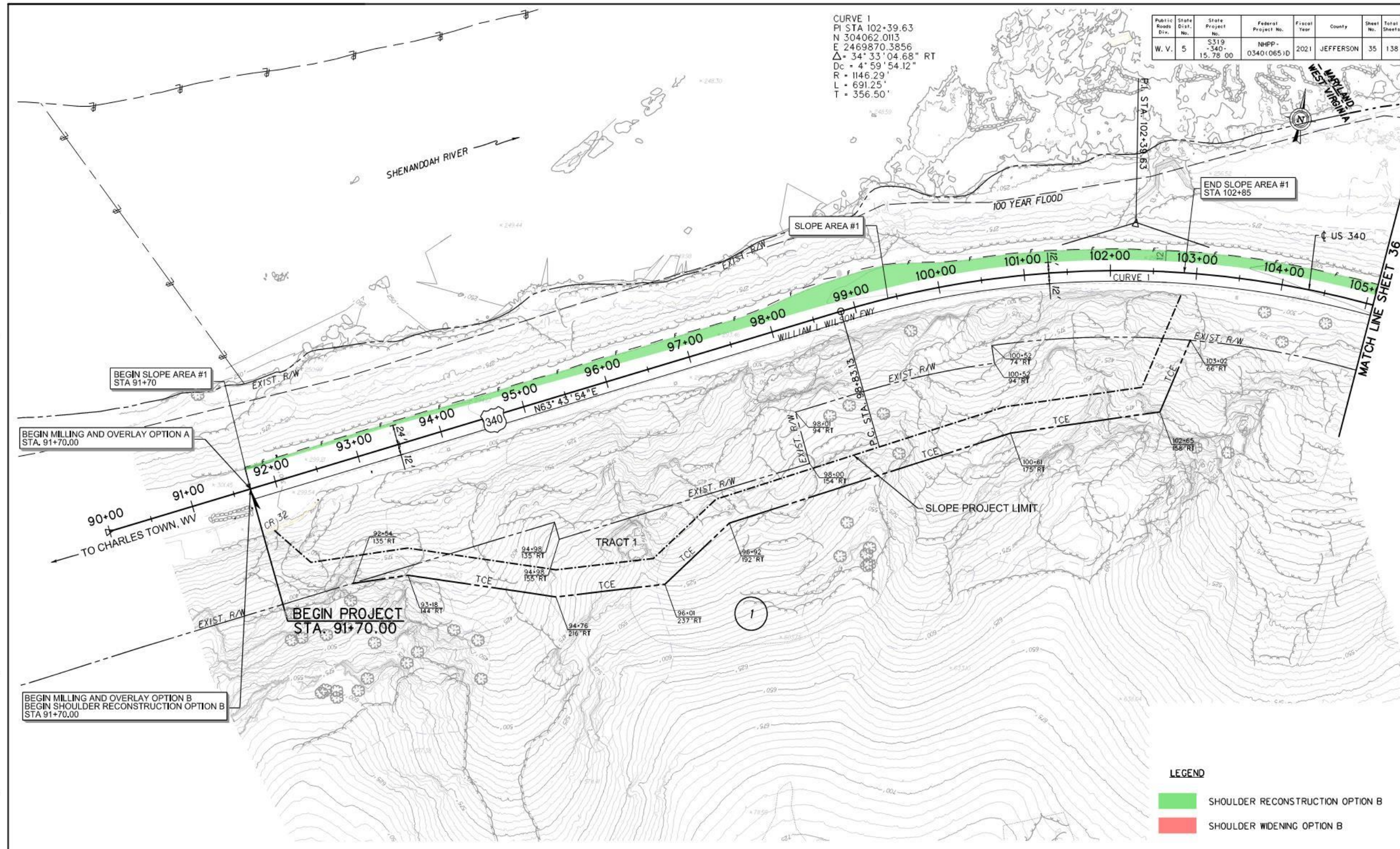
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
OPTION B TTCP PHASE 2

TTCP-12

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Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	5	S319-340-15.78.00	NHPP-0340(065)D	2021	JEFFERSON	35	138

CURVE 1
 PI STA 102+39.63
 N 304062.0113
 E 2469870.3856
 $\Delta = 34^{\circ} 33' 04.68''$ RT
 $D_c = 4^{\circ} 59' 54.12''$
 $R = 1146.29'$
 $L = 691.25'$
 $T = 356.50'$



BEGIN SLOPE AREA #1
 STA 91+70

BEGIN MILLING AND OVERLAY OPTION A
 STA. 91+70.00

BEGIN MILLING AND OVERLAY OPTION B
 BEGIN SHOULDER RECONSTRUCTION OPTION B
 STA 91+70.00

BEGIN PROJECT
 STA. 91+70.00

SLOPE AREA #1

END SLOPE AREA #1
 STA 102+85

- LEGEND**
- SHOULDER RECONSTRUCTION OPTION B
 - SHOULDER WIDENING OPTION B

SCALE : 0 50 ft.

		THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS			
		REVISION NUMBER	SHEET NUMBER	REVISION	DATE BY

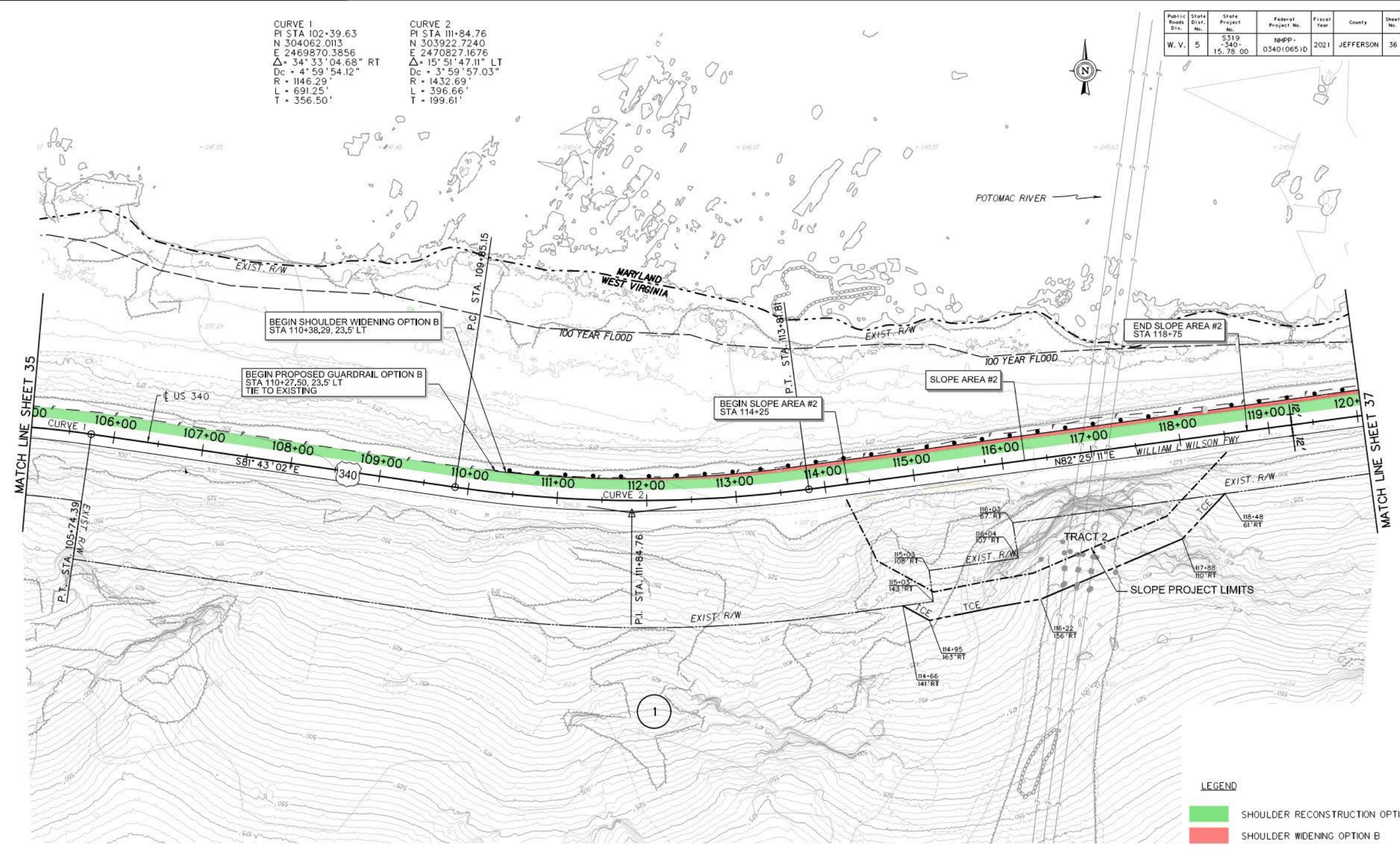
PLAN SHEET

11-24-2020
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CURVE 1
 PI STA 102+39.63
 N 304062.0113
 E 2469870.3856
 $\Delta = 34^{\circ} 33' 04.68''$ RT
 Dc = 4' 59' 54.12"
 R = 1146.29'
 L = 691.25'
 T = 356.50'

CURVE 2
 PI STA 111+84.76
 N 303922.7240
 E 2470827.1676
 $\Delta = 15^{\circ} 51' 47.11''$ LT
 Dc = 3' 59' 57.03"
 R = 1432.69'
 L = 396.66'
 T = 199.61'

Public Roads Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	5	S319-340-15.78.00	NHPP-0340(065)D	2021	JEFFERSON	36	138



MATCH LINE SHEET 35

MATCH LINE SHEET 37

LEGEND

SHOULDER RECONSTRUCTION OPTION B

SHOULDER WIDENING OPTION B

SCALE : 0 50 ft.



REVISION NUMBER	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

PLAN SHEET

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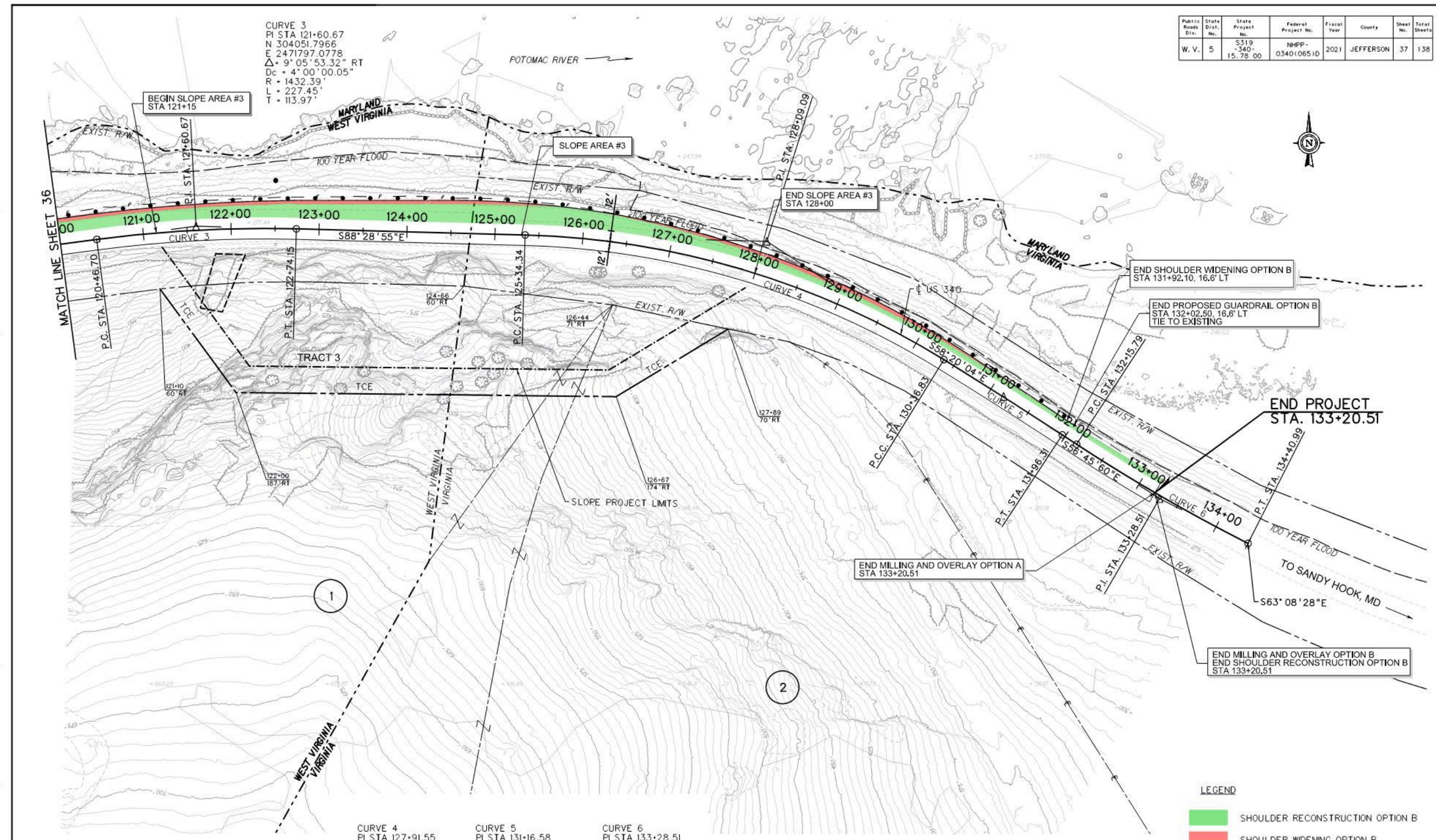
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W. V.	5	S519-340-15.78.00	NHPP-0340(065)D	2021	JEFFERSON	37	138

CURVE 3
 PI STA 121+60.67
 N 304051.7966
 E 2471797.0778
 $\Delta = 9^{\circ} 05' 53.32''$ RT
 $Dc = 4' 00'' 00.05''$
 R = 1432.39'
 L = 227.45'
 T = 113.97'

CURVE 4
 PI STA 127+91.55
 N 304035.0720
 E 2472428.2179
 $\Delta = 30^{\circ} 08' 51.45''$ RT
 $Dc = 5' 59'' 58.41''$
 R = 955.00'
 L = 502.50'
 T = 257.21'

CURVE 5
 PI STA 131+16.58
 N 303858.1857
 E 2472715.0066
 $\Delta = 1^{\circ} 34' 04.32''$ RT
 $Dc = 0' 58'' 59.37''$
 R = 5827.72'
 L = 159.47'
 T = 79.74'

CURVE 6
 PI STA 133+28.51
 N 303742.0311
 E 2472892.2837
 $\Delta = 6^{\circ} 22' 27.97''$ LT
 $Dc = 2' 49'' 49.73''$
 R = 2024.24'
 L = 225.21'
 T = 112.72'



LEGEND

- SHOULDER RECONSTRUCTION OPTION B
- SHOULDER WIDENING OPTION B

HR HR ENGINEERING, INC. CHARLESTON, WV 681-341-6100	REVISION	SHEET NUMBER	REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
PLAN SHEET

SCALE: 0 50 ft.

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OPTION A

Public Road Div.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V.	5	S319-340-15.78.00	NHPP-0340(065)D	2021	JEFFERSON	18	138

PHASE 1 (DETOUR)

WORK AREA/ACTIVITIES

TWO (2) WEEKS PRIOR TO THE PLANNED CLOSURE, THE CONTRACTOR SHALL ERECT ALL DETOUR SIGNS AND CHANGEABLE MESSAGE SIGNS IN THE FOLLOWING LOCATIONS AND AS DETAILED IN THE TEMPORARY TRAFFIC CONTROL PLANS. CONFIRM MESSAGES WITH THE TRAFFIC ENGINEERING DIVISION OR DISTRICT 5 TRAFFIC ENGINEER THREE (3) WEEKS PRIOR TO NEED. THESE SIGNS SHALL REMAIN IN PLACE THROUGH THE DURATION OF THE CLOSURE.

- US 340 SB IN THE VICINITY OF THE WV 67 INTERCHANGE IN SANDY HOOK, MD.
- US 340 AND VA 671 IN VA.
- US 340 NB AND CR 27 IN BOLIVAR, WV.
- US 340 NB SOUTH OF THE WV 9 INTERCHANGE IN CHARLES TOWN, WV.
- WV 9 EB WEST OF US 340 INTERCHANGE IN CHARLES TOWN, WV.
- CR 13 EB IN THE VICINITY OF WV 115 AND WV 51 IN CHARLES TOWN, WV.
- VA 9 WB EAST OF HARPERS FERRY ROAD (VA 671) IN MECHANICSVILLE, VA.
- VA 7 EB WEST OF US 340 EXIT
- VA 7 WB EAST OF VA 9 EXIT

CLOSE US 340 NORTHBOUND LEFT LANE AT THE INTERSECTION OF SHORELINE DRIVE AND WEST WASHINGTON STREET..

REPLACE ANY DAMAGE TO US 340 AFTER BLASTING IS COMPLETED PRIOR TO BEGINNING PHASE 2 WORK.

TRAFFIC CONDITION:

LOCAL TRAFFIC DETOUR

R11-3A SIGNS SHALL BE PLACED AT THE FOLLOWING LOCATIONS TO DIRECT LOCAL TRAFFIC:

- US 340 NB SOUTH OF THE WV 9 INTERCHANGE.
- CR 13 EB WEST OF THE US 340/WV 9 INTERCHANGE.
- CR 32 NB NEAR INTERSECTION WITH CR 32 / 1 (KEYES GAP RD.)

US 340 DETOUR

US 340 SHALL BE CLOSED BETWEEN HARPERS FERRY ROAD (VA 671) AND CHESTNUT HILL ROAD (CR 32). CONTRACTOR SHALL IMPLEMENT DETOURS AS SHOWN ON THESE PLANS AND AS PER EACH STATE'S STANDARDS FOR TEMPORARY TRAFFIC CONTROL.

USE CASE E4 TO CLOSE LEFT TURN LANE AND LEFT LANE OF US 340 NORTHBOUND AT THE INTERSECTION OF SHORELINE DRIVE AND WEST WASHINGTON STREET.

PHASE 2

WORK AREA/ACTIVITIES:

INSTALL WEARING COURSE, SIGNING AND FINAL PAVEMENT MARKINGS ALONG BOTH DIRECTIONS US 340 FROM STA. 91+70 TO STA. 133+20.51.

TRAFFIC CONDITION:

ALL TRAFFIC MAINTAINED ON EXISTING US 340 USING CASE A9. CONTRACTOR MAY USE CASES A3 OR A4 FOR CONSTRUCTION ALONG CR 32.

THIS WORK SHALL BE DONE DURING NIGHTTIME HOURS FROM 7:00 PM TO 6:00 AM.

TTCP-4

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
**SEQUENCE OF CONSTRUCTION
OPTION A**

HDR HDR ENGINEERING, INC. CHARLESTON, WV 681-541-6100	REVISION	SHEET	REVISION	DATE	BY
	NUMBER	NUMBER			

SRWTS

JH43203-PLAN

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OPTION B

Federal Road Dist.	State Dist. No.	State Project No.	Federal Project No.	Fiscal Year	County	Sheet No.	Total Sheets
W. V. 5	5319-3440-15.78.00	534010651D	NHPP-	2021	JEFFERSON	19	138

PHASE 1 (DETOUR)

WORK AREA/ACTIVITIES

TWO (2) WEEKS PRIOR TO THE PLANNED CLOSURE, THE CONTRACTOR SHALL ERRECT ALL DETOUR SIGNS AND CHANGEABLE MESSAGE SIGNS IN THE FOLLOWING LOCATIONS AND AS DETAILED IN THE TEMPORARY TRAFFIC CONTROL PLANS. CONFIRM MESSAGES WITH THE TRAFFIC ENGINEERING DIVISION OR DISTRICT 5 TRAFFIC ENGINEER THREE (3) WEEKS PRIOR TO NEED. THESE SIGNS SHALL REMAIN IN PLACE THROUGH THE DURATION OF THE CLOSURE.

- US 340 SB IN THE VICINITY OF THE WV 67 INTERCHANGE IN SANDY HOOK, MD.
- US 340 AND VA 671 IN VA.
- US 340 NB AND CR 27 IN BOLIVAR, WV.
- US 340 NB SOUTH OF THE WV 9 INTERCHANGE IN CHARLES TOWN, WV.
- WV 9 EB WEST OF US 340 INTERCHANGE IN CHARLES TOWN, WV.
- CR 13 EB IN THE VICINITY OF WV 115 AND WV 51 IN CHARLES TOWN, WV.
- VA 9 NB EAST OF HARPERS FERRY ROAD (VA 671) IN MECHANICSVILLE, VA.
- VA 7 EB WEST OF US 340 EXIT
- VA 7 NB EAST OF VA 9 EXIT

CLOSE US 340 NORTHBOUND LEFT LANE AT THE INTERSECTION OF SHORELINE DRIVE AND WEST WASHINGTON STREET.

CONSTRUCT SHOULDER WIDENING, SHOULDER RECONSTRUCTION AND GUARDRAIL ALONG US 340 SOUTHBOUND FROM STA. 91+70 TO STA. 133+19.66.

TRAFFIC CONDITION:

LOCAL TRAFFIC DETOUR

R11-3A SIGNS SHALL BE PLACED AT THE FOLLOWING LOCATIONS TO DIRECT LOCAL TRAFFIC:

- US 340 NB SOUTH OF THE WV 9 INTERCHANGE.
- CR 13 EB WEST OF THE US 340/WV 9 INTERCHANGE.
- CR 32 NB NEAR INTERSECTION WITH CR 32 / 1 (KEYS GAP RD.)

US 340 DETOUR

US 340 SHALL BE CLOSED BETWEEN HARPERS FERRY ROAD (VA 671) AND CHESTNUT HILL ROAD (CR 32). CONTRACTOR SHALL IMPLEMENT DETOURS AS SHOWN ON THESE PLANS AND AS PER EACH STATE'S STANDARDS FOR TEMPORARY TRAFFIC CONTROL.

DURING DETOUR CONTRACTOR SHALL CONSTRUCT SHOULDER WIDENING, SHOULDER RECONSTRUCTION AND GUARDRAIL ALONG US 340 SOUTHBOUND FROM STA. 91+70 TO STA. 133+19.66.

USE CASE E4 TO CLOSE LEFT TURN LANE AND LEFT LANE OF US 340 NORTHBOUND AT THE INTERSECTION OF SHORELINE DRIVE AND WEST WASHINGTON STREET.

PHASE 2 (LANE SHIFT AND SLOPE WORK)

WORK ACTIVITIES:

INSTALL TEMPORARY SIGNING AND LANE SHIFT DEVICES, ERADICATE PAVEMENT MARKINGS, INSTALL TEMPORARY PAVEMENT MARKINGS, REMOVE AND RESET TEMPORARY BARRIER AND TEMPORARY IMPACT ATTENUATING DEVICES AS SHOWN IN TEMPORARY TRAFFIC CONTROL PLANS.

SHIFT TRAFFIC AND PERFORM SLOPE WORK AS DESCRIBED IN PLANS.

TRAFFIC CONDITION:

US 340 AND SIDE ROADS SHALL HAVE TWO WAY TRAFFIC SHALL BE MAINTAINED DURING DAYTIME HOURS DURING THIS PHASE.

CONTRACTOR MAY USE CASES A4, A6, AND/OR A9 TO PREPARE LANE SHIFT AS NECESSARY.

CONTRACTOR MAY USE CASES A3 OR A4 AS NECESSARY FOR CONSTRUCTION ALONG SIDE ROADS.

LANE SHIFT WORK SHALL BE DONE DURING NIGHTTIME HOURS FROM 7:00 PM TO 6:00 AM.

ALL OTHER WORK MAY BE DONE DURING DAYTIME HOURS.

PHASE 3 (ONE LANE ALTERNATING TRAFFIC)

PHASE 3A

WORK AREA/ACTIVITIES:

INSTALL TEMPORARY TRAFFIC SIGNALS.
BEGIN WORK ON SLOPE AREA #1 FROM STA. 91+70 TO STA. 102+85.
COMPLETE WORK ON SLOPE AREA #1 PRIOR TO MOVING TO SLOPE AREA #2 OR SLOPE AREA #3 WORK.

TRAFFIC CONDITION:

US 340 TRAFFIC MAINTAINED IN ONE LANE IN EACH DIRECTION ON TEMPORARY PAVEMENT WITH TEMPORARY TRAFFIC SIGNALS USING CASE D5B FOR SLOPE AREA #1.

PHASE 3B

WORK AREA/ACTIVITIES:

REMOVE AND RESET TEMPORARY TRAFFIC SIGNALS.
BEGIN WORK ON SLOPE AREA #2 FROM STA. 114+25 TO STA. 118+75.
COMPLETE WORK ON SLOPE AREA #2 PRIOR TO BEGINNING WORK ON SLOPE AREA #3.

TRAFFIC CONDITION:

US 340 TRAFFIC MAINTAINED IN ONE LANE IN EACH DIRECTION ON TEMPORARY PAVEMENT WITH TEMPORARY TRAFFIC SIGNALS USING CASE D5B FOR SLOPE AREA #2.

PHASE 3C

WORK AREA/ACTIVITIES:

REMOVE AND RESET TEMPORARY TRAFFIC SIGNALS.
BEGIN WORK ON SLOPE AREA #3 FROM STA. 121+15 TO STA. 128+00.
COMPLETE WORK ON SLOPE AREA #3.

TRAFFIC CONDITION:

US 340 TRAFFIC MAINTAINED IN ONE LANE IN EACH DIRECTION ON TEMPORARY PAVEMENT WITH TEMPORARY TRAFFIC SIGNALS USING CASE D5B FOR SLOPE AREA #3.

PHASE 4

WORK AREA/ACTIVITIES:

INSTALL WEARING COURSE, SIGNING AND FINAL PAVEMENT MARKINGS ALONG BOTH DIRECTIONS US 340 FROM STA. 91+70 TO STA. 133+20.51.

TRAFFIC CONDITION:

ALL TRAFFIC MAINTAINED ON EXISTING US 340 USING CASE A9.
CONTRACTOR MAY USE CASES A3 OR A4 FOR CONSTRUCTION ALONG CR 32.

THIS WORK SHALL BE DONE DURING NIGHTTIME HOURS FROM 7:00 PM TO 6:00 AM.

SRWTS

TTCP-5

HR	HR ENGINEERING, INC.		REVISION	DATE	BY
	CHARLESTON, WV 607-541-8100		REVISION	DATE	BY

THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SEQUENCE OF CONSTRUCTION
OPTION B

C:\pwworking\jw14232022\14232022.plt, 152, 90x, US340.dwg, USERNAME1 11/24/2022



Appendix B

4(f) Temporary
Occupancy OWJ
Letter



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

Byrd E. White, III
Secretary of Transportation/
Commissioner of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Jimmy Wriston, P. E.
Deputy Secretary/
Deputy Commissioner

May 7, 2021

Mr. Tyrone Brandyburg
Superintendent
Harpers Ferry National Historical Park
171 Shoreline Drive
Harpers Ferry, West Virginia 25425

Dear Mr. Brandyburg:

State Project No: S319-340-15.78
Federal Project No: NHPP-0340(063)D
US 340 Rock Slide Repair
Section 4(f) Temporary Occupancy
Jefferson County

This letter documents compliance with Section 4(f) of the Department of Transportation Act (49 USC § 303) (Section 4(f)) for the temporary occupancy of Harpers Ferry National Historical Park (Park), during the repair and remediation of rockslides, along US 340. The Park is protected by Section 4(f) because it is a publicly owned park and recreational resource as well as a historic resource under Section 106. Regulations adopted by the Federal Highway Administration provide for the approval of temporary occupancy of Section 4(f) property that is adverse in terms of the statute's preservationist purposes of preserving the integrity of the Section 4(f) property. 23 CFR § 774.13 (d) specifically states that if all the following conditions are met, that such a temporary occupancy is an exception to the requirements of Section 4(f). They are as follows:

1. The duration of the use is temporary and there is no change in the ownership of the land.
2. The scope of the work is minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal.
3. There are no permanent adverse physical impacts anticipated and no interference with the protected activities, features, or attributes of the property on either a temporary or permanent bases.

E.E.O./AFFIRMATIVE ACTION EMPLOYER

Mr. Tyrone Brandyburg
May 7, 2021
Page Two

4. The land being used is fully restored to a condition equal to or better than that which existed prior to the project, map attached.
5. There is a written agreement with the appropriate Federal, state, or local official(s) with jurisdiction over the property regarding the conditions listed above. For historic and archaeological sites, a written agreement would come from the West Virginia State Historical Preservation Office (WVSHPO) and/or Virginia State Historical Preservation Office (VASHPO).

The project will occur primarily within West Virginia Division of Highways (WVDOH) right of way; however, to fully mitigate the slide areas, some work will extend onto National Park Service (NPS) property. All access to NPS property will be from WVDOH and Virginia Department of Transportation (VDOT) Right of Way. The contractor will have to temporarily access land designated as NPS property to conduct the necessary work in areas of deep slope and rockface and will not permanently affect the recreational use of the Park or its historical significance. During the time the slide repairs and mitigation are occurring, the Loudoun Heights Trail (Trail) may require periodic closure of short duration when work is being done adjacent to or below the Trail. During temporary closures, a flagging operation, signage, or other means of closure notification will be utilized to prevent trail users from access to the Trail in the areas that may be unsafe. These closures are anticipated to occur periodically over a six-month period. The Trail will be open during the Memorial Day Holiday period from the Thursday before Memorial Day to Memorial Day (Monday) and the Labor Day Holiday period from the Thursday before Labor Day to Labor Day (Monday).

The Trail is not located in an area where slide repairs are occurring, and the Trail would not be directly impacted by the slide repair project. The closure would be in place for the safety of trail users and construction workers during activities such as blasting and placement of barriers by helicopters. Impacts to NPS property and the use of the Trail will be temporary and short term. A map of the project location is attached for your information.

The Park is also protected under Section 4(f) due to its historical nature. The WVSHPO and VASHPO concur that there will be no adverse effect to historic properties associated with the proposed project.

To reduce viewshed impacts associated with the proposed remediation treatments (rock slope drape, attenuator drape, rockfall barrier, attenuator barrier, etc.) remediation treatments will be powder coated to blend well to the natural rock face.

Mr. Tyrone Brandyburg
May 7, 2021
Page Two

4. The land being used is fully restored to a condition equal to or better than that which existed prior to the project, map attached.
5. There is a written agreement with the appropriate Federal, state, or local official(s) with jurisdiction over the property regarding the conditions listed above. For historic and archaeological sites, a written agreement would come from the West Virginia State Historical Preservation Office (WVSHPO) and/or Virginia State Historical Preservation Office (VASHPO).

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The Park is also protected under Section 4(f) due to its historical nature. The WVSHPO and VASHPO concur that there will be no adverse effect to historic properties associated with the proposed project.

To reduce viewshed impacts associated with the proposed remediation treatments (rock slope drape, attenuator drape, rockfall barrier, attenuator barrier, etc.) remediation treatments will be powder coated to blend well to the natural rock face.

Mr. Tyrone Brandyburg
May 7, 2021
Page Three

Please confirm your agreement with the contents of this letter by signing on Page three (a line is provided above your name). By signing you will be indicating that the temporary uses of the Park, together with the suggested mitigation, do not affect the activities, features, and attributes that qualify the Park for protection under Section 4(f) and the slide repair project, meets the criteria of temporary occupancy. Please return the signed original to the West Virginia Division of Highways, 1334 Smith Street, Charleston, West Virginia 25301. A copy of this agreement is attached for your files.

Should you have any questions or require additional information, please contact Mr. Ben Hark at Ben.L.Hark@wv.gov (304-414-6444) or Ms. Sondra Mullins at Sondra.L.Mullins@wv.gov (304-414-6468), both with the Environmental Section of our Engineering Division.

Sincerely,



Jimmy Wriston, P. E.
Deputy Secretary/
Deputy Commissioner

JW:SI

APPROVED BY:

H. BRANDYBURG

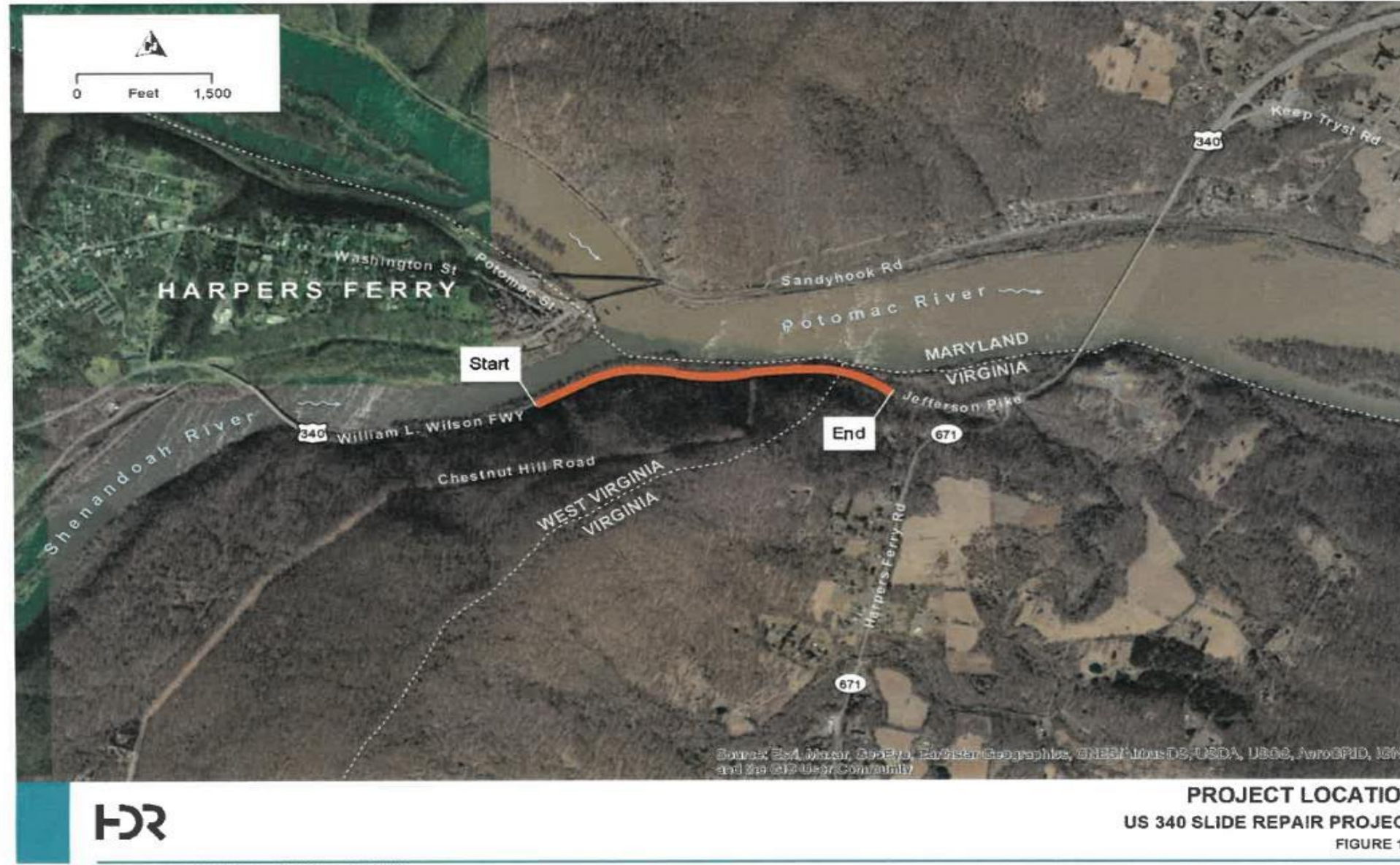
Digitally signed by H.
BRANDYBURG
Date: 2021.06.21 12:57:18 -04'00'

Name: Tyrone Brandyburg, Superintendent
Harpers Ferry National Historical Park

Date:

Attachments

Figure 1-1: Project Location





Appendix C

Agency Coordination





WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Byrd E. White, III
Secretary of Transportation/
Commissioner of Highways

April 27, 2020

Jimmy Wriston, P. E.
Deputy Secretary/
Deputy Commissioner

Ms. Susan Pierce, Deputy State
Historic Preservation Office
Department of Arts, Culture and History
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305-0430

Dear Ms. Pierce:

Phase I Archaeological Survey
US 340 Rockslide Investigation
Jefferson County, WV
State Project: S319-340-15.78 00
Federal Project: NHPP-0340(063)D

Please find located in the Shared Cultural Resources Document File on Drop Box one digital copy of The Phase I Archaeological Survey for The US 340 Rockslide Investigation and one set of GIS files. The West Virginia project area consists of approximately 4.3 hectares on the south side of US340 near Harpers Ferry, West Virginia. An additional 0.3 hectares of project area located in the state of Virginia was also surveyed but is not included in this document. As a result of the survey no significant archaeological resources were encountered and no further archaeological investigations are recommended.

We ask for your concurrence with these findings.

Should you require additional information, please contact Rodney DeMott of our Environmental Section at (304) 414-6435.

Yours very truly,

Sondra Mullins Digitally signed by Sondra Mullins
DN: cn=Sondra Mullins, o=Department of Transportation, ou=Division of Highways, email=Sondra.Mullins@transportation.wv.gov

Ben L. Hark
Section Head
Environmental Section
Engineering Division

H:k

Attachments

Bcc: DDE(RCD)

E.E.O./AFFIRMATIVE ACTION EMPLOYER



The Culture Center
1900 Kanawha Blvd., E.
Charleston, WV 25305-0300
Randall Reid-Smith, Curator

Phone 304.558.0220 • www.wvculture.org
Fax 304.558.2779 • TDD 304.558.3562
FFO/AA Employer

April 28, 2020

Mr. Ben L. Hark
Environmental Section Head
West Virginia Division of Highways, Engineering Division
1334 Smith Street
Charleston, West Virginia 25305

RE: US 340 Rockslide Investigation
State Project S319-340-15.78 00; Federal Project NHPP-0340(063)D
FR# 20-764-JF

Dear Mr. Hark:

We have reviewed the above referenced project to determine potential effects on cultural resources. As required by Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

According to the submitted information, the West Virginia Division of Highways proposes to stabilize a section of existing rock slope located along the southern edge of US 340 to the east of Harpers Ferry in Jefferson County, West Virginia and Loudoun County, Virginia. The area of potential effect (APE), which totals 11.3 acres, is defined as all areas that may be affected by the proposed stabilization. It consists of three non-contiguous areas, most of which is located within Harpers Ferry National Historical Park. The West Virginia portion of the APE totals 10.5 acres. Our comments pertain only to that portion of the proposed project located within West Virginia. We understand that potential effects to architectural resources will be addressed separately.

Archaeological Resources:

Archaeological investigations of the proposed APE, Study Areas A, B, and C, included systematic pedestrian reconnaissance, which confirmed the extremely steep nature of the terrain. Exposed rock outcrops were observed throughout the area. No cultural resources, including rockshelters, archaeological sites, or aboveground resources, were identified within the APE. As a result, we concur that the proposed project will have no effect on archaeological historic properties within West Virginia.

We appreciate the opportunity to be of service. *If you have questions regarding our comments or the Section 106 process, please contact Lora A. Lamarre-DeMott, Senior Archaeologist, at (304) 558-0240.*

Sincerely,

Susan M. Pierce signed electronically 5:23pm 4/28/2020

Susan M. Pierce
Deputy State Historic Preservation Officer

SMP/LLD



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Byrd E. White, III
Secretary of Transportation

September 8, 2020

Jimmy Wriston, P. E.
Deputy Secretary/
Deputy Commissioner

Ms. Julie Langan
State Historic Preservation Officer
Virginia Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221

State Project No.: S319-340-15.78.00
Federal Project No. NHPP-0340(063)D US
US 340 Rock Slide Repair Project
Jefferson County, WV and Loudoun County, VA

Dear Ms. Langan,

The West Virginia Division of Highways (WVDOH) proposes to complete the US 340 Rock Slide Repair (Project) in Harpers Ferry, Jefferson County, West Virginia and Loudoun County, Virginia. As the WVDOH administers Federal-aid projects on behalf of the Federal Highway Administration throughout the State of West Virginia as authorized by Title 23 U.S.C 302, this project is subject to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations at 36 Code of Federal Regulations (CFR) § 800. This letter initiates Section 106 consultation with your office and seeks your concurrence on the Area of Potential Effect, the identification of historic properties, and the finding that the project will result in No Adverse Effect to historic properties in Virginia.

Project Background

The Project entails the repair of a rock slide along US 340 in Harpers Ferry, West Virginia. US 340 is a high-volume (approximately 35,000 vehicles per day), two-lane roadway that traverses the water gap through the Blue Ridge Mountains created by the Shenandoah and Potomac Rivers, between Harpers Ferry, West Virginia and the West Virginia-Virginia state line. The project is located along the northbound (NB) and southbound (SB) lanes of US 340 in the Loudoun Heights region of the Harpers Ferry National Historical Park (HFNHP). The natural rock slopes adjacent to US 340 range in height from 150 feet to 600 feet above the US 340 roadway grade. These slopes exhibit varying degrees of rockfall activity and present concerns to the traveling public. Ongoing maintenance activities by the WVDOH is required to maintain the road for safe travel by the public through this area.

E.E.O./AFFIRMATIVE ACTION EMPLOYER

The Phase I Design Study (Preliminary Design Phase) was completed by HDR Engineering, Inc. (HDR) between December 2015 and April 2018. This work included a geologic evaluation and preliminary rockfall remediation design for three slope areas adjacent to US 340 between Chestnut Hill Road (CR-32) and Harpers Ferry Road (VA-671). The purpose of the study was to provide a preliminary assessment of the potential rockfall within the study area and estimated probable construction costs for feasible rockfall remediation options.

Slope investigation methods implemented to complete the assessment included roadway-level and upper-slope geologic evaluations (on-slope rappelling requiring a roadway closure and detour), as well as mobile and aerial LiDAR mapping. Investigation efforts included coordination between WVDOH, Virginia Department of Transportation (VDOT) Maryland State Highway Administration (MDSHA), the National Park Service (NPS), local politicians, civic groups, and law enforcement.

Rockfall assessments included evaluation of potential rockfall generators on the slopes and the potential for rockfall from these sources to reach the roadway. This work focused primarily on the slope areas within WVDOH right-of-way, and immediately contiguous areas on NPS property that affected potential rockfall concerns in the slope areas studied (note that evaluation of much of the NPS property outside of the project study limit was not completed as it was outside of the scope of HDR's work). Preliminary analyses and design of the remediation options were completed to satisfy WVDOH's 90% rockfall retained design criteria for rockfall generators within the project limits.

Rockfall mitigation treatments were evaluated and considered key factors such as: Construction Cost; Effectiveness to provide rockfall protection (within and above project limits); Construction Complexity; Traffic Impacts; Aesthetics; Rockfall Maintenance; and System Maintenance. A relative risk assessment was completed using the aforementioned key factors aided in development of a "short-list" of remediation options to best fit the geologic and slope conditions in each slope area.

Description of the Undertaking

The purpose of the project is to implement rockfall protection and stabilization measures associated with the existing slopes along US 340 NB, while considering local traffic impacts and future development of the US 340 corridor. Due to the high volume of traffic, and that US 340 is the main route through this area, rockfalls pose a concern for public safety. The concern for safety exists not only from a rockfall itself, but from road closures that result from rockfalls, and the potential impact to emergency vehicle response times should there be a rockfall. Based on the analysis in the Phase I Design Study prepared in April 2018, there is a high potential for rockfall in the area and an established public safety need to implement rockfall protection and stabilization mitigation measures for the priority slopes. The proposed remediation options have been developed based on the design study completed on slopes within the existing WVDOH right-of-way (ROW) and NPS property (see Preliminary Slope Remediation Plan Figures in Enclosure 1: Project Review Form). Seven remediation options were proposed in the three key slope-area types identified at the site and include:

- Natural rock slopes and roadway cuts
 1. Maintenance and scaling;
 2. Rock slope drape;
 3. Attenuator barrier and drape; and
 4. Localized roadway shift

- Debris channels and boulder fields
 5. Pinned rock berm;
 6. Flexible rockfall barrier; and
 7. Gabion barrier.

Within the project area in Virginia, the work is limited to localized safety scaling and localized rock bolting to secure the attenuator barrier and drape. For more project details, please see the enclosed Project Review Form.

Proposed Area of Potential Effects

WVDOH has developed a proposed Area of Potential Effects (APE) for your review and concurrence (Enclosure 2). The APE extends across state lines, with the vast majority of the work being conducted in West Virginia. WVDOH is consulting separately with the West Virginia State Historic Preservation Officer on the identification of historic properties and assessment of effect for the APE in West Virginia. The project APE is composed of an archaeological APE and an architectural APE. The APE takes into account direct and indirect effects of the Project, as well as temporary and permanent effects resulting from construction activities. The APE for the project in Virginia is very limited and extends approximately 1,000 feet east from the West Virginia state line into Virginia along US 340.

The archaeological APE includes all areas that may be affected by ground disturbance or stabilization of the existing US 340 ROW and northern slope of Loudoun Heights. The APE comprises the existing US 340 ROW along the narrow floodplain between the base of the Loudoun Heights slope and the Shenandoah and Potomac Rivers, as well as the northern slope of Loudoun Heights in Virginia. The project APE consists of three non-contiguous areas that collectively measure approximately 11.3 acres, while the portion of the archaeological APE in Virginia measures 0.8 acres in size and is located outside of the Harpers Ferry National Historical Park (HFNHP). The West Virginia portion of the APE encompasses 10.5 acres and is located almost entirely within the HFNHP, with the exception of the easternmost 1.2 acres.

The architectural APE for the project generally consists of a 0.25-mile buffer that extends from the project improvements on the west, north, and east sides, and follows the ridge of the northern slope of Loudoun Heights on the south side. The architectural APE extends approximately 1,000 feet into Virginia from the West Virginia/Virginia border. The overall architectural APE encompasses portions of West Virginia, Virginia, and Maryland, with the vast majority of the APE located in West Virginia. Using LiDAR data and a GIS model, HDR conducted a viewshed analysis to determine where the project might be visible. Those areas where the project will be most likely to be visible were included within the architectural APE.

Identification of Historic Properties

A review of the Virginia Cultural Resource Information System (VCRIS) identified three historic properties in the Virginia APE, all of which are historic districts (**Error! Reference source not found.**). No archaeological resources or individual buildings or structures are located within the APE in Virginia.

Table 1. Historic Properties in the Virginia APE

DHR No.	Name/Resource	Location	NRHP Eligibility	Date of Evaluation
053-1094	Harpers Ferry National Historic Park	Loudoun County, VA	NRHP-listed under Criteria A, C, and D	1966 (rev. 1980; 1999; 2016)
053-6297	Between the Hills/Harpers Ferry Rural Historic District	Loudoun County, VA	Potentially (Recommended) NRHP Eligible under A and C	June 2011
053-6247	Study Area for the Battle of Harpers Ferry	Loudoun County, VA	Potentially Eligible as a site and as contributing to 053-6297 under A and C	June 2011

Archaeological Resources

Rummel, Klepper, and Kahl, LLP (RK&K) conducted a *Phase I Archaeological Identification Survey for the US 340 Rockslide Investigation Loudoun County, Virginia*, which is enclosed for your review and concurrence (Enclosure 2). The goal of the Phase I survey was to assign archaeological potential and identify archaeological resources within the APE and, to the extent possible, evaluate whether any archaeological resources satisfy the criteria for listing in the National Register of Historic Places (NRHP). As the APE is located within both West Virginia and Virginia, much of the report addresses the APE in both states in order to provide all consulting parties with the appropriate level of information regarding the project area. However, the results and recommendations sections address only the portion of the APE located within Virginia.

In summary, the archaeological field investigation included a pedestrian survey of the APE to assign archaeological potential, identify any aboveground resources, and determine appropriate areas for subsurface shovel testing. The US 340 ROW within the APE has been heavily disturbed through cutting and filling events designed to raise the elevation of the existing roadway. The portions of the APE south of the existing ROW consist almost entirely of deeply dissected stone outcrop cliffs, ledges, and boulder fields. Outside of the existing ROW, slopes within the APE were typically a minimum of 45 to 60 percent, with most areas of the APE exceeding these angles of slope. No evidence of prehistoric or historic archaeological resources were identified within APE.

Architectural Resources

There are no aboveground buildings or structures located within the architectural APE in Virginia. However, three historic districts overlap with the Virginia APE: Harpers Ferry National Historical Park (053-1094); Between the Hills/Harper’s Ferry Rural Historic District (053-6297); and Study Area for the Battle of Harper’s Ferry (053-6247). Both the Between the Hills/Harper’s Ferry Rural Historic District (053-6297) and the Study Area for the Battle of Harper’s Ferry (053-6247) are considered “potentially eligible” for listing in the NRHP by DHR and are considered eligible for the NRHP for the purpose of Section 106 consultation for this project. All three historic properties are significant under Criteria A and C; additionally, HFNHP is significant under Criterion D. There are no standing structures associated with these three historic properties present within the Virginia APE.

HFNHP (053-1094) is listed in the NRHP for its significance in association with military maneuvers and operations during the Civil War, including its inclusion of the U.S. Armory. Due to its presence at

the confluence of the Shenandoah and Potomac Rivers, the town was an important manufacturing and commercial center during the eighteenth and nineteenth centuries. It was the site of the famous John Brown raid in 1859, and became significant again as the site of a major Confederate victory over Union forces in 1862. The town, which lies entirely within West Virginia, is significant under Criterion C as an intact collection of nineteenth century homes, businesses, and military structures. Additionally, the historic district is significant under Criterion D for its archaeological potential.

Between the Hills/Harper's Ferry Rural Historic District (053-6297) was recommended eligible for listing in the NRHP in 2011 for significance associated with the federal arsenal, port, and trading center at Harper's Ferry and the historic Hillsboro-Harper's Ferry Turnpike (Route 671) that passes through the center of the district (south and east of the APE) (Criterion A). The recommended historic district is also significant under Criterion C as an example of a relatively unaltered nineteenth-century rural landscape, including farmsteads that lie outside of the APE. The district is also characterized by the mountainous landscape that encircles it.

The Study Area for the Battle of Harper's Ferry (053-6247) was previously recommended eligible for its significance in association with the Battle of Harper's Ferry (1862), during which it supplied a road (Route 671) for advancing troops and supplies (Criterion A). The area is additionally recommended to be a contributing resource to the Hills/Harper's Ferry Rural Historic District (053-6297) for associated significance under Criteria A and C.

Consultation Efforts

WVDOH understands the importance of early and frequent consultation and has conducted several meetings with the NPS, local government officials, and the public. WVDOH is consulting separately with the West Virginia State Historic Preservation Officer regarding the project and its effects in West Virginia. A kick-off meeting was held with NPS staff from the HFNHP on April 23, 2019 to discuss the project, provide preliminary engineering design work, and a discussion of the cultural studies and a National Environmental Policy Act Environmental Assessment that will be completed for the project and approved by the Federal Highway Administration. In January 2020, an architectural historian from WVDOH's contractor met with HFNHP staff to identify areas of visual concern within the park and discuss methodology for assessing effects. A public meeting was held on February 6, 2020 at the HFNHP to provide information and updates regarding the project. Over 130 people from the community, local government, and NPS attended the meeting. No comments were made regarding the project's potential for impacts on historic properties. The vast majority of comments concerned the traffic impacts of the proposed detour during construction. Further, a coordination meeting was held with environmental and cultural staff of the Virginia Department of Transportation on May 7, 2020 to discuss the project, the identification of historic properties in the APE, the consultation efforts to date, and the assessment of effect.

Assessment of Effect

The proposed Project will have no adverse effect on historic properties in Virginia. There are no archaeological resources in the APE in Virginia and the portions of the three historic properties (053-1094; 053-6297; 053-6247) that overlap with the APE in Virginia consist entirely of undeveloped mountainous, wooded terrain. No built structures such as roads (other than US 340) or farmsteads are present within the APE in Virginia. The proposed remediation efforts will be confined to the rock slope

that abuts US 340, and will not extend into the more level, heavily wooded terrain that contributes to the historic significance and rural character of the three historic properties. Due to the location of the Project at a steep descent on the hillside, the proposed Project components will be minimally or not at all visible from contributing resources to DHR Nos. 053-1094, 053-6297, and 053-6247. Furthermore, the proposed work in Virginia consists of potential attenuator barrier, rock bolting, and netting made of rock and steel components whose colors and materials are visually compatible with the existing rockface along US 340, and will therefore have minimal or no visual impact on the surrounding environment. These remediation components will be further screened from view due to the vegetation that exists and will partially obscure the improvements. Remediation efforts are intended to stabilize the rockface and will therefore prevent further deterioration of the rock formations and tree coverage that help to characterize the historic setting of the districts. The proposed remediation efforts will not affect the historic integrity of the three historic districts and will have minimal or no effect, temporal or permanent, on historic properties. It is therefore recommended that the Project will have No Adverse Effect on historic properties in Virginia.

Pursuant to 36 CFR § 800, WVDOH seeks your concurrence on the APE, identification of historic properties, and our finding of No Adverse Effect on historic properties in Virginia for the US 340 Rockslide Repair Project. Should you require additional information, please contact Sondra Mullins of our Environmental Section by calling (304) 414-6468 or via email at Sondra.L.Mullins@wv.gov.

Sincerely,


Ben L. Hark
Ben L. Hark
Environmental Section Head
Engineering Division

cc:

Sondra Mullins, WVDOH
Helen Ross, VDOT
Deborah Henson, HDR
Jeanne Barnes, HDR

Enclosures:

1. Project Review Form
2. *Phase I Archaeological Identification Survey for the US 340 Rockslide Investigation Loudoun County, Virginia (RK&K 2020)*



COMMONWEALTH of VIRGINIA

Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

Matt Strickler
Secretary of Natural Resources


Julie V. Langan
Director

Tel: (804) 367-2323
Fax: (804) 367-2391
www.dhr.virginia.gov

MEMORANDUM

DATE: 21 September 2020 **DHR File #** 2020-0475

TO: Ms Sondra Mullins
WVDOH

FROM:  Marc E. Holma, Architectural Historian (804) 482-6090
Review and Compliance Division

PROJECT: US 340 rock slide repair project
Loudoun County, Virginia

- This project will have an effect on historic resources. Based on the information provided, the effect will not be adverse.
- This project will have an adverse effect on historic properties. Further consultation with DHR is needed under Section 106 of the NHPA.
- Additional information is needed before we will be able to determine the effect of the project on historic resources. **Please see below.**
- No further identification efforts are warranted. No historic properties will be affected by the project. Should unidentified historic properties be discovered during implementation of the project, please notify DHR.
- We have previously reviewed this project. Attached is a copy of our correspondence.
- Other (Please see comments below)

COMMENTS: **The archaeology report meets DHR survey guidelines and we concur with the recommendation that no further archaeological investigation is warranted. We further agree that the undertaking will have NAE on historic properties 053-1094, 053-6247, and 053-6297.**

Administrative Services
10 Courthouse Ave.
Petersburg, VA 23803
Tel: (804) 862-6408
Fax: (804) 862-6196

Eastern Region Office
2801 Kensington Avenue
Richmond, VA 23221
Tel: (804) 367-2323
Fax: (804) 367-2391

Western Region Office
962 Kime Lane
Salem, VA 24153
Tel: (540) 387-5443
Fax: (540) 387-5446

Northern Region Office
5357 Main Street
PO Box 519
Stephens City, VA 22655
Tel: (540) 868-7029
Fax: (540) 868-7033



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Byrd E. White, III
Secretary of Transportation

January 20, 2021

Jimmy Wriston, P. E.
Deputy Secretary/
Deputy Commissioner

Ms. Susan Pierce
Deputy State Historic Preservation Officer
WV Division of Culture and History
1900 Kanawha Boulevard East
Charleston, WV 25305

State Project No.: S319-340-15.78.00
Federal Project No. NHPP-0340(063)D US
US 340 Rock Slide Repair Project
Jefferson County, WV and Loudoun County, VA

Dear Ms. Pierce,

The West Virginia Division of Highways (WVDOH) proposes to complete the US 340 Rock Slide Repair (Project) in Harpers Ferry, Jefferson County, West Virginia and Loudoun County, Virginia. As the WVDOH administers Federal-aid projects on behalf of the Federal Highway Administration throughout the State of West Virginia as authorized by Title 23 U.S.C 302, this project is an undertaking subject to Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations at 36 Code of Federal Regulations (CFR) § 800. This letter initiates Section 106 consultation with your office and seeks your concurrence on the Area of Potential Effects, the identification of historic properties, and the finding that the project will result in No Adverse Effect to historic properties in West Virginia.

We previously consulted with your office regarding the archaeological investigation for this Project. RK&K completed a *Phase 1 Archaeological Identification Survey for the US 340 Rockslide Investigation* in March 2020. The study found no evidence of prehistoric or historic archaeological resources within the Area of Potential Effects (APE) in West Virginia and recommended no further work and that the Project would have no effect on archaeological historic properties. Your office concurred with these recommendations on April 28, 2020 (FR# 20-764-JF).

Project Background

The Project entails the repair of a rock slide along US 340 in Harpers Ferry, West Virginia. US 340 is a high-volume (approximately 35,000 vehicles per day), two-lane roadway that traverses the water gap through the Blue Ridge Mountains created by the Shenandoah and Potomac Rivers, between

Harpers Ferry, West Virginia and the West Virginia-Virginia state line. The project is located along the northbound (NB) and southbound (SB) lanes of US 340 in the Loudoun Heights region of the Harpers Ferry National Historical Park (HFNHP). The natural rock slopes adjacent to US 340 range in height from 150 feet to 600 feet above the US 340 roadway grade. These slopes exhibit varying degrees of rockfall activity and present concerns to the traveling public. Ongoing maintenance activities by the WVDOH is required to maintain the road for safe travel by the public through this area.

A Phase I Design Study (Preliminary Design Phase) was completed in April 2018. This work included a geologic evaluation and preliminary rockfall remediation design for three slope areas adjacent to US 340 between Chestnut Hill Road (CR-32) and Harpers Ferry Road (VA-671). Rockfall mitigation treatments were evaluated and considered key factors such as: Construction Cost; Effectiveness to provide rockfall protection (within and above project limits); Construction Complexity; Traffic Impacts; Aesthetics; Rockfall Maintenance; and System Maintenance. Based on the analysis, there is a high potential for rockfall in the area and an established public safety need to implement rockfall protection and stabilization mitigation measures for the priority slopes. The proposed remediation options have been developed based on the design study for slopes within the existing WVDOH right-of-way (ROW) and National Park Service (NPS) property. Please see the attached Assessment of Effects for a more detailed project description (Enclosure 1).

Area of Potential Effects

WVDOH has developed an APE for your review and concurrence (Enclosure 2). The APE extends across state lines, with the vast majority of the work being conducted in West Virginia. WVDOH has consulted separately with the Virginia State Historic Preservation Officer (SHPO) on the identification of historic properties and assessment of effects for the APE in Virginia.¹ The project APE is composed of an archaeological APE and an architectural APE. The APE takes into account direct and indirect effects of the Project, as well as temporary and permanent effects resulting from construction activities.

The architectural APE for the project generally consists of a 0.25-mile buffer that extends from the project improvements on the west, north, and east sides, and follows the ridge of the northern slope of Loudoun Heights on the south side. The architectural APE extends approximately 1,000 feet into Virginia from the West Virginia/Virginia border. The overall architectural APE encompasses portions of West Virginia, Virginia, and Maryland, with the vast majority of the APE located in West Virginia. Using LiDAR data and a GIS model, HDR conducted a viewshed analysis to determine where the project might be visible. Those areas where the project would be most likely to be visible were included within the architectural APE.

Identification of Historic Properties

A review of the West Virginia SHPO Map Viewer identified seven architectural historic properties in the APE, including the Harpers Ferry National Historical Park (66000041), the Harpers Ferry Historic District (79002584), and their contributing resources (Table 1). Due to the unique nature and size of some of the resources, boundaries of some historic properties extend across state lines. Because all architectural resources within the APE had been previously surveyed and evaluated for listing in the

¹ The Virginia SHPO concurred with the APE and the finding that the Project would have no adverse effect on historic properties in Virginia (Marc E. Holma, Virginia Department of Historic Resources to Sondra Mullins, WVDOH, Memorandum, US 340 Rock Slide Repair Project, Loudoun County, Virginia, DHR File # 2020-0475, 21 September 2020).

National Register of Historic Places (NRHP), resources within the APE were revisited and photographed but no survey was completed. Please see the attached Assessment of Effects for more information on historic properties in the APE.

Table 1. Historic Properties in the APE

ID Number	Name	Address	State	NRHP Status	NRHP Criteria
NR-460/ WA-III-027 (MD)/ 78001484 (WV)	B&O Railroad Potomac River Crossing (Bridge, Potomac River & Tunnel)	Confluence of Shenandoah and Potomac Rivers	MD/WV	Listed 1979	N/A
66000041 (NPS/WV)/ WA-III-072 (MD)/ 053-1094 (VA)	Harpers Ferry National Historical Park	Harpers Ferry Road	MD/VA/WV	Listed 1966, revised 1980, 1999, 2016 (boundary expansion)	A, B, C, D
79002584 (NPS/WV)	Harpers Ferry Historic District	Harpers Ferry	WV	Listed 1979, revised 2010	A, C
66000036 (NPS/WV)/ WA-VI-048 (MD)	Chesapeake and Ohio Canal National Historic Park (C&O Canal)	Potomac River, from Georgetown, DC to Cumberland, MD	DC/MD/WV	Listed 1966, revised 1980, boundary increase 2015	A, C
02000287 (WV)	Bollman Bridge, Wemwag or Latrobe Bridge (B&O Railroad Potomac River Bride)	Confluence of Potomac and Shenandoah Rivers	WV/MD	Listed 2002	A, under MPDF Historic Properties of the Harpers Ferry National Historical Park (2001)
73001915 (WV)	St. Peter's Roman Catholic Church	Church Street and Jefferson Rock Trail	WV	Listed 1973	C (Criteria Consideration A).
01000785 (WV)	Niswarnar Tract/Sherwood Property (Ruins)	West side of Chestnut Hill Road	WV	Listed 2001	A, under MPDF Historic Properties of the Harpers Ferry National Historical Park (2001)

Consultation Efforts

WVDOH understands the importance of early and frequent consultation and has conducted several meetings with the NPS, local government officials, and the public. WVDOH consulted separately with the Virginia SHPO regarding the project and its effects in Virginia. A kick-off meeting was held with NPS staff from the HFNHP on April 23, 2019 to discuss the project, provide preliminary engineering design work, and a discussion of the cultural studies and a National Environmental Policy Act Environmental Assessment that will be completed for the project and approved by the Federal Highway Administration. In January 2020, an architectural historian from WVDOH's contractor met with HFNHP staff to identify areas of visual concern within the park and discuss the methodology for

assessing effects. A public meeting was held on February 6, 2020 at the HFNHP to provide information and updates regarding the project. Over 130 people from the community, local government, and NPS attended the meeting. No comments were made regarding the project's potential for impacts on historic properties. The vast majority of comments concerned the traffic impacts of the proposed detour during construction. Further, a coordination meeting was held with environmental and cultural staff of the Virginia Department of Transportation on May 7, 2020 to discuss the project, the identification of historic properties in the APE, the consultation efforts to date, and the assessment of effects.

Assessment of Effects

The proposed Project will have no adverse effect on historic properties. There are no archaeological resources in the APE. The proposed remediation efforts will be confined to the rock slope that abuts US 340. Due to the location of the Project at a steep descent on the hillside, the proposed Project components will be minimally or not at all visible from the historic properties in the APE with the exception of the HFNHP. However, the proposed work within the Park along US 340 consists of potential attenuator barriers, rock bolting, and draping/netting made of rock and steel components whose colors and materials are visually compatible with the existing rockface along US 340, and will therefore have minimal or no visual impact on the surrounding environment. These remediation components will be further screened from view from the heart of the district in Harpers Ferry due to distance and the vegetation that exists along the banks of the Potomac River that will partially or fully obscure the improvements. Remediation efforts are intended to stabilize the rockface and will therefore prevent further deterioration of the rock formations and tree coverage that help to characterize the historic setting of the HFNHP. The proposed remediation efforts will not affect the historic integrity of the Park and will have minimal or no effect, temporal or permanent, on historic properties. It is therefore recommended that the Project will have No Adverse Effect on historic properties in West Virginia. Please see the enclosed Assessment of Effects for a more detailed assessment.

Pursuant to 36 CFR § 800, WVDOH seeks your concurrence on the APE, identification of historic properties, and our finding of No Adverse Effect on historic properties in West Virginia for the US 340 Rockslide Repair Project. Should you require additional information, please contact Sondra Mullins of our Environmental Section by calling (304) 414-6468 or via email at Sondra.L.Mullins@wv.gov.

Sincerely,

Ben L. Hark
Ben L. Hark
Environmental Section Head
Engineering Division



Digitally signed by Ben L. Hark,
DN: c=US, E=Ben.L.Hark@wv.gov,
O=WVDOH - Engineering Division,
OU=Environmental, CN=Ben L. Hark
Date: 2021.01.20 07:45:57 -0500

cc:

Sondra Mullins, WVDOH
Deborah Henson, HDR

Enclosures:

1. US 340 Rock Slide Repair Project Assessment of Effects
2. Area of Potential Effects Maps

Enclosure 2. Area of Potential Effects Maps

Figure 1. USGS Map with Area of Potential Effects (Harpers Ferry Quad)

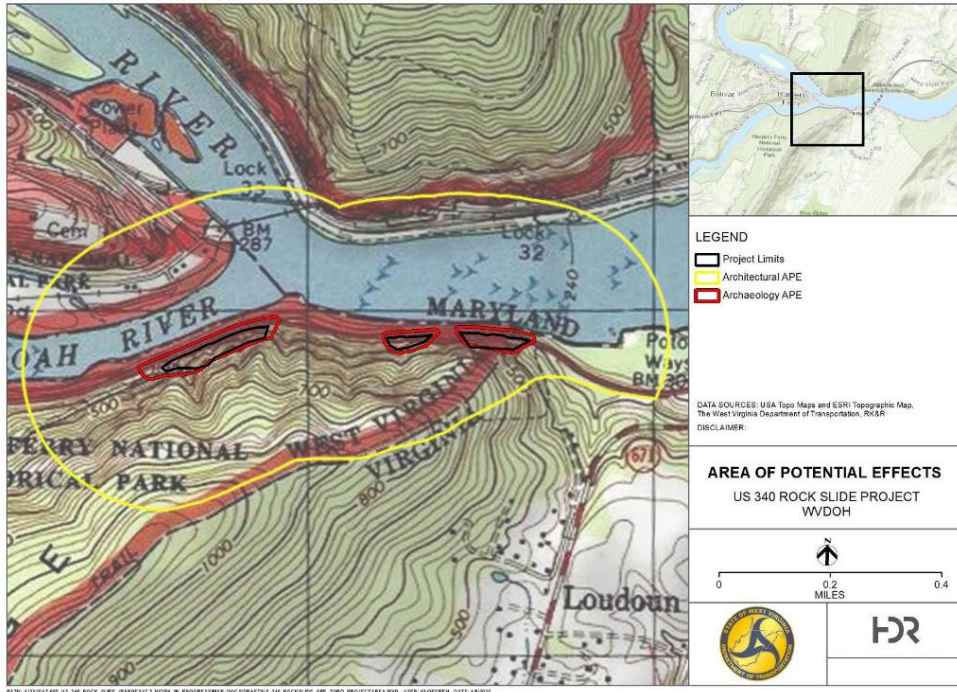
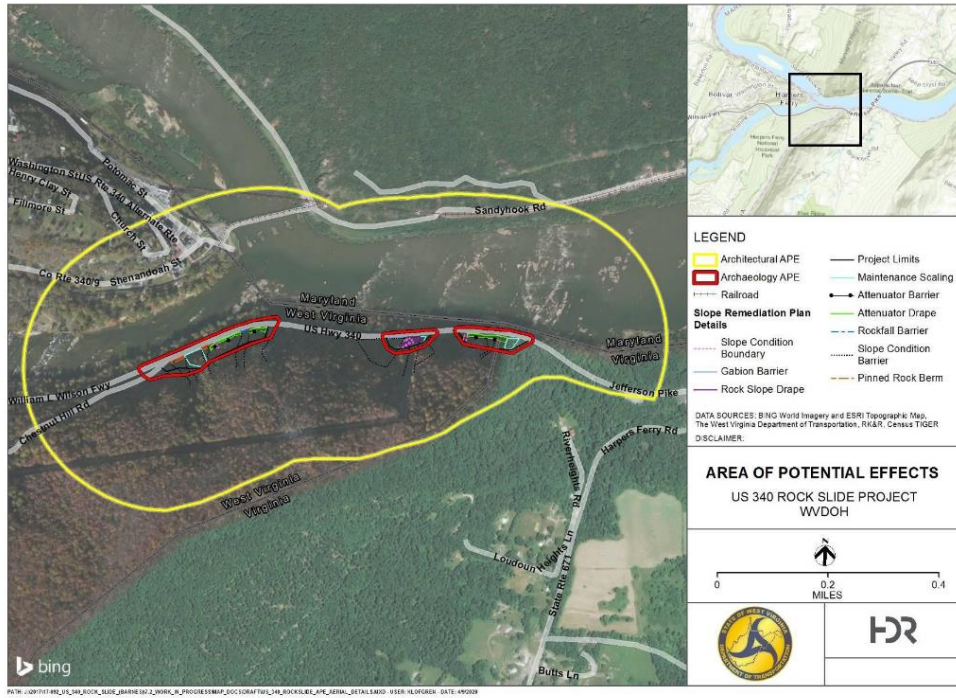


Figure 2. Project APE Map with Project Details





West Virginia Department of
**ARTS, CULTURE
AND HISTORY**

The Culture Center
1900 Kanawha Blvd., E.
Charleston, WV 25305-0300

Randall Reid-Smith, Curator
Phone 304.558.0220 • www.wvculture.org
Fax 304.558.2779 • TDD 304.558.3562
EEO/AA Employer

January 21, 2021

Mr. Ben L. Hark
Environmental Section Head, Engineering Division
West Virginia Division of Highways
1900 Kanawha Boulevard East, Building 5, Room 110
Charleston, WV 25305-0430

RE: US 340 Rockslide Repair Project, Jefferson County
State Project S319-340-15/78.00; Federal Project NHPP-0340(063)D US
FR#: 20-764-JF-1

Dear Mr. Hark:

We have reviewed the above-mentioned project to determine its effects to cultural resources. As required by Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR § 800: "Protection of Historic Properties," we submit our comments.

According to the submitted information, West Virginia Division of Highways (WVDOH) proposes to repair a rockslide along US 340 in Harpers Ferry, Jefferson County. The project is located along the northbound and southbound lanes of US 340 in the Loudoun Heights region of the Harpers Ferry National Historical Park (NHNHP). Because there is a high potential for rockfalls in the area resulting in threats to public safety, rockfall protections and stabilization measures will be used to remediate the dangers on the priority slopes. It is our understanding that the archaeological portion of the project was addressed in an earlier submittal.

Architectural Resources:

We have reviewed the submitted documentation, and the Area of Potential Effects (APE) for architectural resources generally consists of a 0.25-mile buffer that extends from the proposed project improvements on the west, north and east sides, while following the ridge along the northern slope of the Loudoun Heights on the south side of the APE. While the majority of the work will take place within West Virginia, a portion of the APE extends into Loudoun County, Virginia. A viewshed analysis was completed with the use of LIDAR data and a GIS model to establish the potential viewshed areas within the proposed project area. Seven architectural historic properties were identified within the APE during the viewshed analysis. These resources include the NHNHP (NR# 66000041); the Harpers Ferry Historic District (NR# 79002584); the B&O Railroad Potomac River Crossing (NR# 78001484); the Chesapeake and Ohio Canal National Historic Park (NR# 66000036); Bollman Bridge (NR# 02000287); St. Peter's Roman Catholic Church (NR# 73001915); and Niswarmer Tract/Sherwood Property (NR# 01000785). The proposed project will not directly impact any of these resources, and based on the included mapping and photographs, we concur that the proposed rock fall mitigation measures will not substantially alter the viewshed of the region. Therefore, we agree that no architectural properties or historic districts eligible for or included in National Register will be adversely affected by the proposed rock slide repair project. No further consultation is necessary regarding architectural resources; however, we ask that you contact our office if your project should change.

January 21, 2021
Mr. Hark
FR#: 20-764-JF-1
Page 2

Consulting Parties/Public Comments:

We note that the Virginia SHPO concurred with the established APE and that there would be no adverse effect from the proposed rock fall project on historic resources located within the state of Virginia in a letter dated September 21, 2020. A kick-off meeting with the NPS and staff from HFNHP on April 23, 2019, and a follow-up meeting with WVDOH and HFNHP staff to identify areas of visual concerns within the park and to develop a methodology for assessing the effects of the proposed project was completed in January 2020. A public meeting held on February 6, 2020 at HFNHP was attended by over 130 people from the local community, local government and the NPS. No comments were received regarding the proposed projects potential to affect historic properties, and most of the received comments were concerned with the proposed detour to be used during the construction. We appreciate that the NPS, HFNHP, Virginia SHPO, local government officials, and members of the community were provided opportunities to comment on the APE and potential affects to the cultural resources in the area. We understand that any further comments regarding cultural resources will be forwarded to our office.

We appreciate the opportunity to be of service. *If you have questions regarding our comments or the Section 106 process, please contact Benjamin. M. Riggle, Architectural Historian, at (304) 558-0220.*

Sincerely,



Susan M. Pierce
Deputy State Historic Preservation Officer

SMP/BMR

Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
*Deputy Director of
Administration and Finance*

Russell W. Baxter
*Deputy Director of
Dam Safety & Floodplain
Management and Soil & Water
Conservation*

Nathan Burrell
*Deputy Director of
Government and Community Relations*

Thomas L. Smith
*Deputy Director of
Operations*

March 26, 2021

Katherine Markowitz
HDR Engineering, Inc.
4900 Ritter Road, Suite 102
Mechanicsburg, PA 17055

Re: US 340 Rock Slide Project

Dear Ms. Markowitz:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

Biotics documents the presence of natural heritage resources within the project boundary including a 100ft buffer. However, due to the scope of the activity we do not anticipate that this project will adversely impact these natural heritage resources. In addition, the project boundary does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please re-submit a completed order form and project map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

A fee of \$90.00 has been assessed for the service of providing this information. Please find attached an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, DCR Finance, 600 East Main Street, 24th Floor, Richmond, VA 23219. Payment is due within thirty days of the invoice date. Please note late payment may result in the suspension of project review service for future projects.

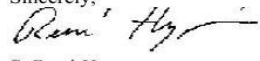
The Virginia Department of Wildlife Resources (VDWR) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from <http://vafwis.org/fwis/> or contact Ernie Aschenbach at 804-367-2733 or Ernie.Aschenbach@dwr.virginia.gov.

600 East Main Street, 24th Floor | Richmond, Virginia 23219 | 804-786-6124

*State Parks • Soil and Water Conservation • Outdoor Recreation Planning
Natural Heritage • Dam Safety and Floodplain Management • Land Conservation*

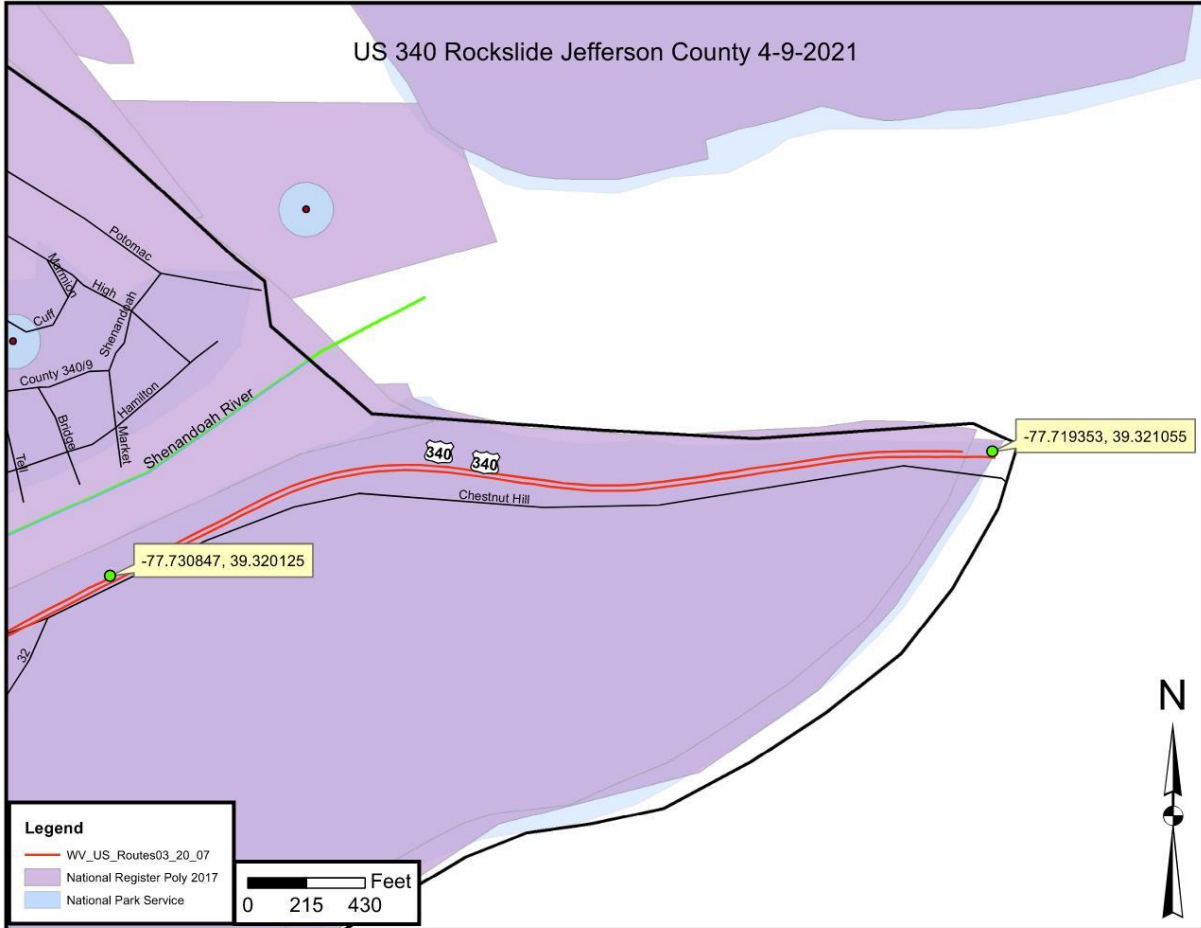
Should you have any questions or concerns, feel free to contact me at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,

A handwritten signature in black ink, appearing to read "S. René Hypes". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

S. René Hypes
Natural Heritage Project Review Coordinator

WVDOH ArcGIS Screen Tool Results





WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Byrd E. White, III
Secretary of Transportation/
Commissioner of Highways

Jimmy Wriston, P. E.
Deputy Secretary/
Deputy Commissioner

June 16, 2021

Ms. Liz Stout
U.S. Fish and Wildlife Service
West Virginia Field Office
6263 Appalachian Highway
Davis, WV 26260

Dear Ms. Stout:

State Project S319-340-15.78 00
Federal Project NHPP-0340(063) D US
US 340 Rockslide Project
Jefferson County

Please be advised the West Virginia Division of Highways has initiated NEPA studies for the above referenced project. This project is being environmentally cleared using an Environmental Assessment.

The project study area is located along the northbound (NB) and southbound (SB) lanes of US 340 in Jefferson County, WV, in the Loudoun Heights region of the Harper's Ferry National Historical Park and west of the West Virginia / Virginia border on the southern bank of the Shenandoah and Potomac Rivers. US 340 is a high traffic volume corridor serving local, commuter, and truck traffic from West Virginia, Virginia, and Maryland. This corridor also experiences high traffic volume from seasonal tourism due to its recreational and historical significance in the region. The existing cut slopes in the project study area are a product of US 340 construction in the mid-1950s and natural erosion along the Shenandoah River. The cut slopes and the exposed rock of natural slopes vary in height from 150 feet to greater than 300 feet above the roadway. The cut slopes in the project study area exhibit varying degrees of rockfall activity that present potential hazards to the traveling public and require ongoing maintenance by the WVDOH. Beginning coordinates 39.320125, -77.730847 and ending coordinates 39.321055, -77.719353.

Attached please find an ArcView map and TOPO map showing the project location. After screening the project through our GIS Species Layers no RTE species were identified. The project will impact approximately 1.0 acre of forested land. Attached please find the public meeting handout that gives more project information. Because of the work on the rock face a phase 1 portal assessment was completed by HDR consulting and no portals were found. If you have any comments or additional species that need to be considered, please let us know.

At this time, please concur that our species list is correct. Should you require additional information, please contact Traci Cummings of our Environmental Section at (304) 414-6429 or at Traci.L.Cummings@wv.gov.

Very truly yours,

Ben L. Hark
NEPA Compliance and Permitting Section Head
Technical Support Division

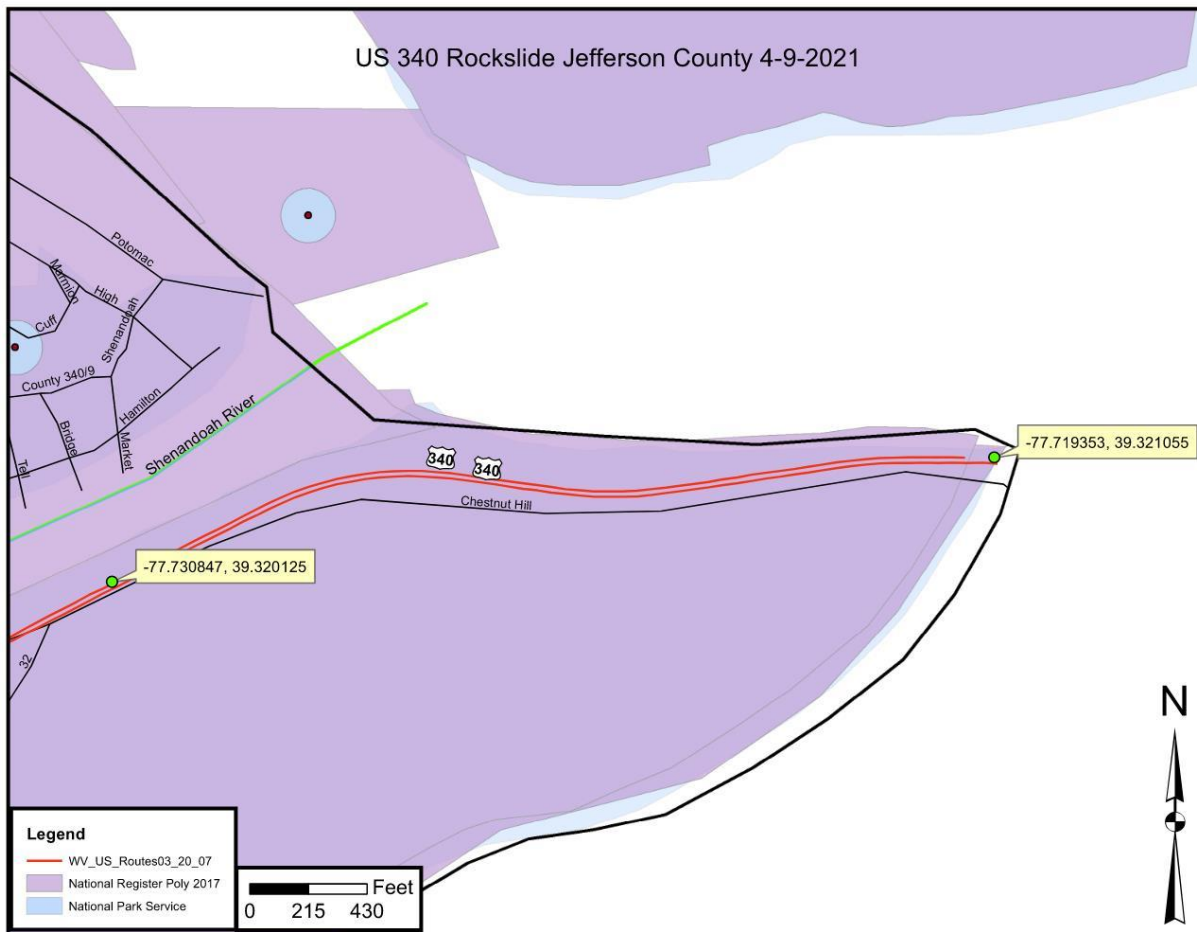
Digitally signed by Ben L. Hark
Date: 2021.06.16
13:36:20-0400'

BH:h

Attachments
bcc: DSN (TC, SM)

E.E.O./AFFIRMATIVE ACTION EMPLOYER

US 340 Rockslide Jefferson County 4-9-2021



US 340 ROCK SLIDE PROJECT



STATE PROJECT: S319-340-15.78.00
FEDERAL PROJECT: NHPP-0340(063)D US

MATHER TRAINING CENTER,
HARPERS FERRY, WV

4:00 PM - 7:00 PM

THURSDAY, FEBRUARY 6, 2020

PURPOSE

The purpose of this workshop is to introduce the US 340 Rock Slide Project to the public and solicit input.

The workshop is intended to be informal to maximize the interaction between citizens and the project team. We encourage attendees to examine the project maps and displays, discuss the project with the members of our project team who are here today, and complete the enclosed comment sheet.

WORKSHOP FORMAT

The WVDOH procedures for public workshops are established to ensure meaningful citizen input in the development for proposed projects, in compliance with all applicable regulations and requirements. This Public Information Workshop is from 4:00 pm to 7:00 pm and there will be **no formal presentation.**



REGISTRATION

- 1. Print your name and address on the registration sheet. Additional copies of this handout and the comment sheet are available at the registration table**
- 2. Comments are welcome as you visit the displays around the room**
- 3. Completed comment sheets can be:**
 - **PLACED** in the Comment Box
 - **RETURNED** to any WVDOH representative at the meeting
 - **MAILED** to the WVDOH at the address on the back of this handout



ENVIRONMENTAL STUDIES

Representatives from the WVDOH are available to discuss the environmental study process. Maps depicting the proposed project improvements are available to view.

This meeting complies with the public involvement requirements of the National Environmental Policy Act of 1969 (NEPA) and Section 106 of the National Preservation Act of 1966.



ENGINEERING

Representatives from the WVDOH and HDR are available to discuss the location and preliminary design of the project, how this type of improvement functions/operates, the operational and safety benefits it provides.

Rockfall remediation is required for potential rockfall hazards within the US 340 study area. The preliminary remediation options have been developed for the study area to mitigate potential rockfall hazards and improve public safety.



RIGHT-OF-WAY

The preliminary remediation options have been developed based on the design study completed on slopes within the existing WVDOH right-of way and NPS property. All rockfall treatments will be constructed with the existing WVDOH right-of-way and NPS property.

PROJECT DESCRIPTION

The project study area is located along the northbound (NB) and southbound (SB) lanes of US 340 in Jefferson County, WV, in the Loudoun Heights region of the Harper's Ferry National Historical Park and west of the West Virginia / Virginia border on the southern bank of the Shenandoah and Potomac Rivers. US 340 is a high-traffic volume corridor serving local, commuter, and truck traffic from West Virginia, Virginia, and Maryland. This corridor also experiences high traffic volume from seasonal tourism due to its recreational and historical significance in the region. The existing cut slopes in the project study area are a product of US 340 construction in the mid-1950s and natural erosion along the Shenandoah River. The cut slopes and the exposed rock of natural slopes vary in height from 150 feet to greater than 300 feet above the roadway. The cut slopes in the project study area exhibit varying degrees of rockfall activity that present potential hazards to the traveling public, and require ongoing maintenance by the WVDOH.



PURPOSE

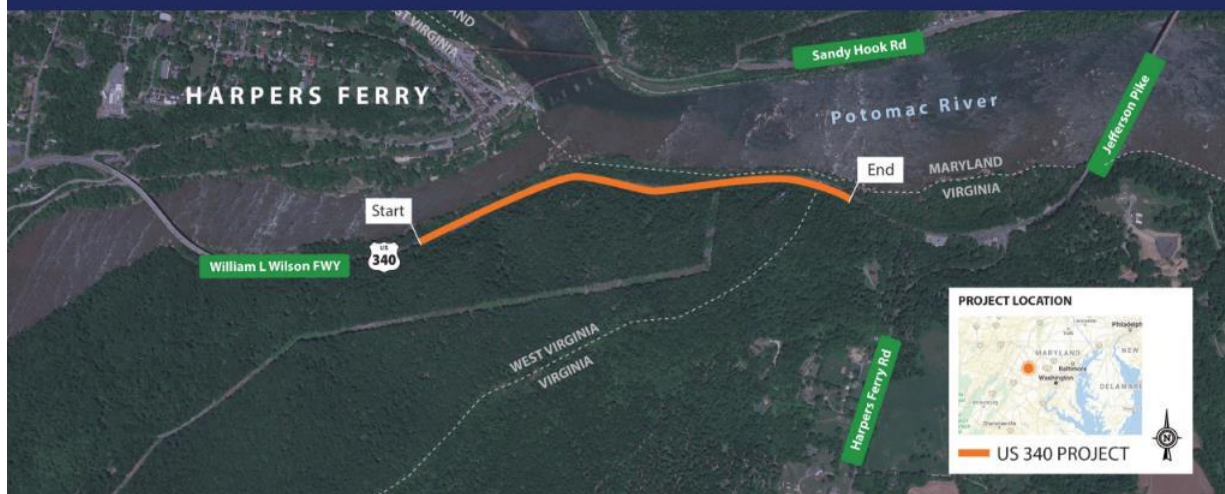
The purpose of this project is to implement rockfall protection and stabilization measures associated with the existing slopes along US 340 NB, while considering local traffic impacts and future development of the US 340 corridor.



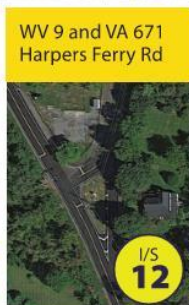
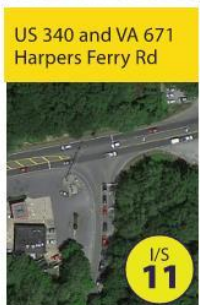
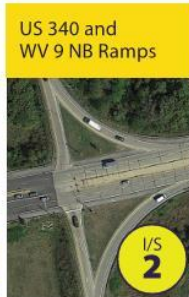
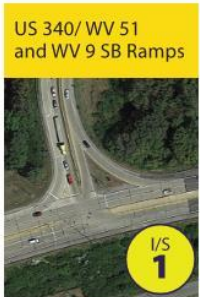
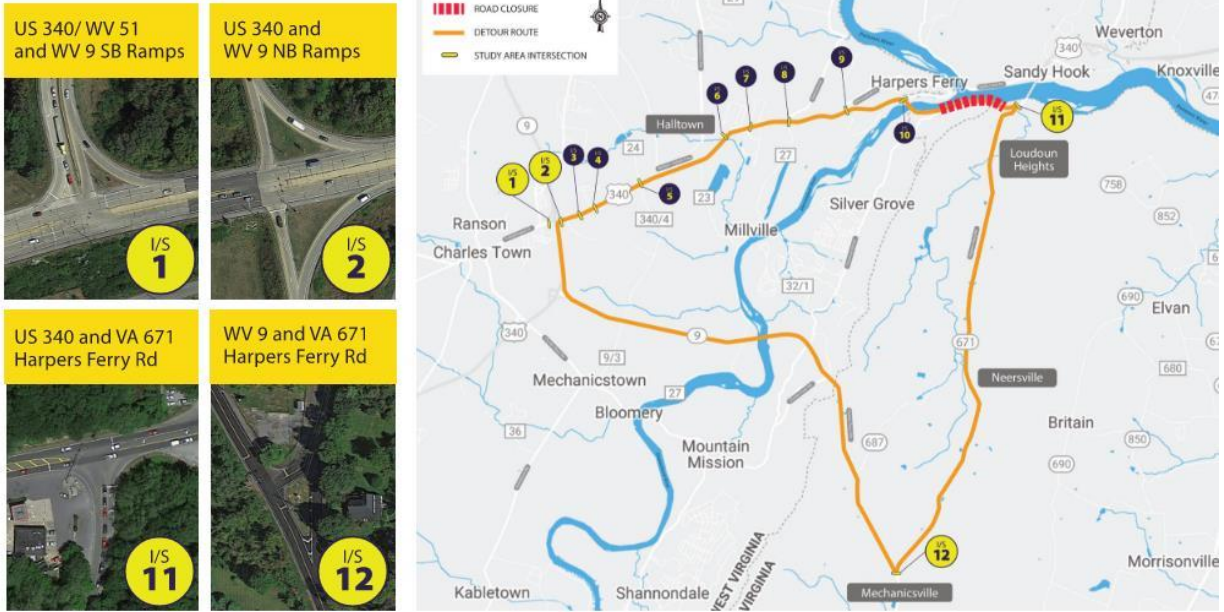
NEED

Due to the high volume of traffic, and that US 340 is the main route through this area, rockfalls pose a threat to public safety. Not only from the rockfall itself, but from road closures that result from rockfalls, and the potential impact to emergency vehicle response times. Based on the analysis in a design study prepared in April 2018, there is a high potential for rockfall in the area and an established public safety need to implement rockfall protection and stabilization mitigation measures for the priority slopes.

PROJECT AREA



FULL DETOUR MAP



LEVEL OF SERVICE (LOS)

A standard measurement, based on vehicle delay and queues, which reflects the relative ease of traffic flow on a scale of A to F.

LOS A

Minor delay at signal, little queuing

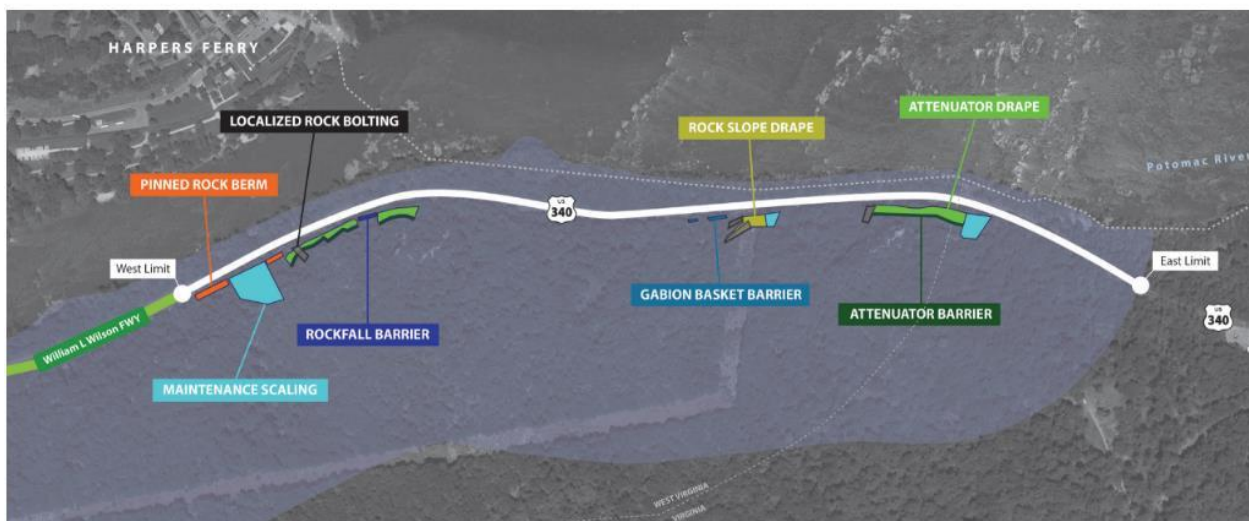
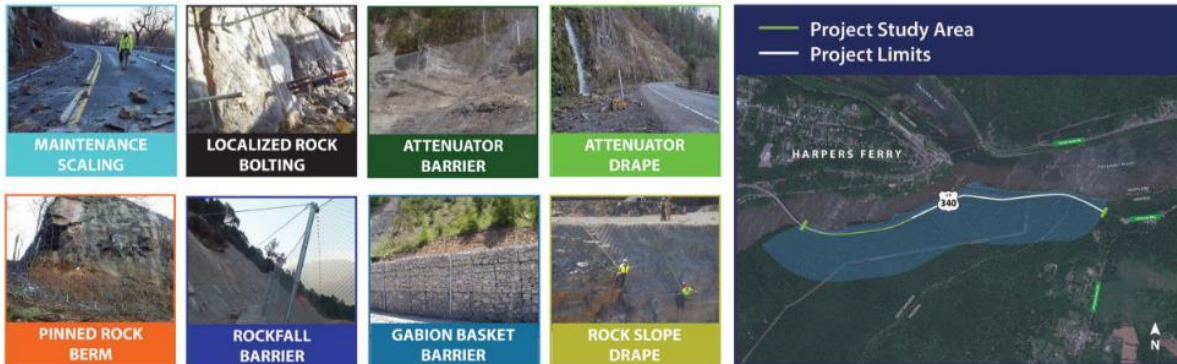
LOS F

Highly congested traffic conditions

Summary of Intersection Level of Service		AM			PM			SAT		
		EXISTING CONDITIONS			FULL DETOUR					
I/S #1	US 340/ WV 51 and WV 9 SB Ramps	B	D	C	B	E	B			
I/S #2	US 340 and WV 9 NB Ramps	C	F	D	E	F	F			
I/S #3	US 340 and Keyes Ferry Rd/ Jefferson Terrace Rd	A	B	B	A	C	B			
I/S #4	US 340 and Patrick Henry Way/ Somerset Village Rd	B	D	D	B	E	E			
I/S #5	US 340 and Country Club Rd and Marlowe Rd	B	C	B	B	B	B			
I/S #6	US 340 and WV 230 Shepardstown Rd	B	B	A	A	B	A			
I/S #7	US 340 and US Customs and Border Protection/ Shipley School Rd	A	A	A	A	A	A			
I/S #8	US 340 and Bakerton Rd/ Millville Rd	B	B	B	A	A	A			
I/S #9	US 340 and Washington St	C	E	B	B	B	B			
I/S #10	US 340 and Shenandoah St ¹	D	E	D	A	A	A			
I/S #11	US 340 and VA 671 Harpers Ferry Rd	C	C	B	A	A	A			
I/S #12	WV 9 and VA 671 Harpers Ferry Rd	B	B	A	F	F	F			

¹- Unsignalized LOS is for worst stop controlled approach.

PRELIMINARY SLOPE REMEDIATION PLAN MAP



WHY SHOULD YOU BE INVOLVED IN THE PROJECT?



Each comment and suggestion provided will help the involved agencies hear directly from the public. Your input is important and will be used to guide the project team as the project moves forward.

Please send written comments on or before **March 9, 2020** to:

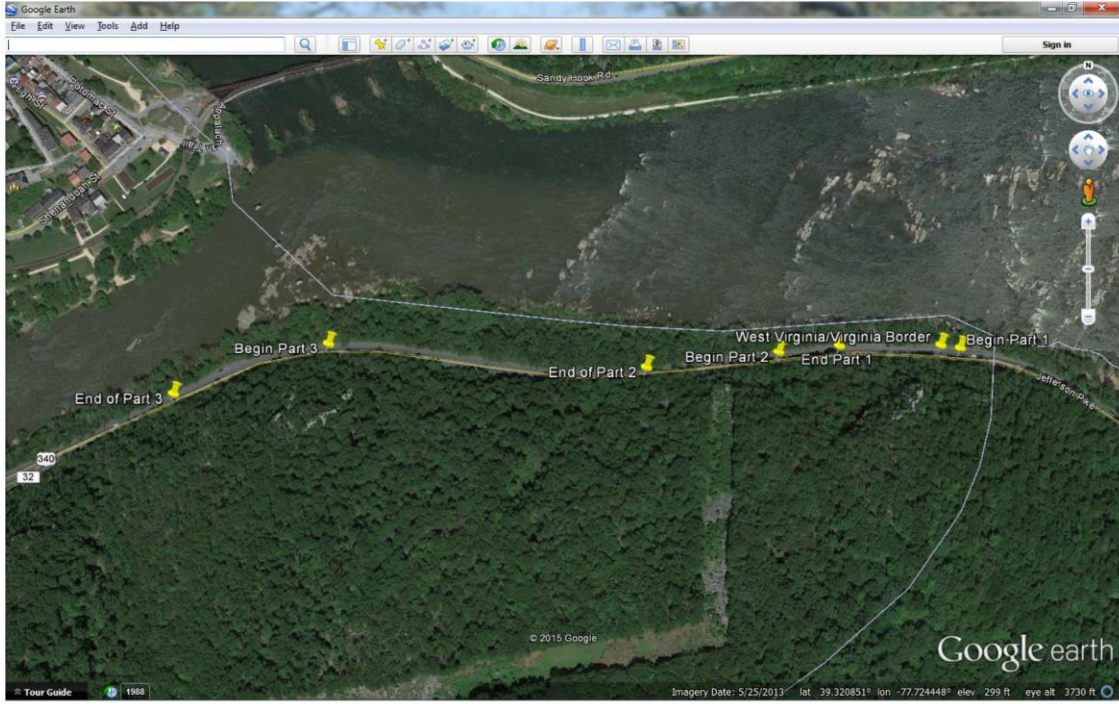


Mr. Raymond J. Scites, P.E.
 Director, Engineering Division
 West Virginia Division of Highways
 1334 Smith Street
 Charleston, West Virginia 25301



Project Information and
 Comment Sheets can be found online at:
<http://go.wv.gov/dotcomment>

Click on **"Comment on Engineering Project"**, and then click on **"US 340 Slide Repair"**





WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Byrd E. White, III
Secretary of Transportation/
Commissioner of Highways

Jimmy Wriston, P. E.
Deputy Secretary/
Deputy Commissioner

July 15, 2021

Ms. Elizabeth Stout
U.S. Fish and Wildlife Service
West Virginia Field Office
6263 Appalachian Highway
Davis, WV 26260

Dear Ms. Stout:

State Project S319-340-15.78 00
Federal Project NHPP-0340(063) D
US 340 Rock Slide Project
Jefferson County

The US 340 Rock Slide Project study area is located along the northbound (NB) and southbound (SB) lanes of US 340 in Jefferson County, WV, in the Loudoun Heights region of the Harper's Ferry National Historical Park and west of the West Virginia / Virginia border on the southern bank of the Shenandoah and Potomac Rivers. US 340 is a high traffic volume roadway serving local, commuter, and truck traffic from West Virginia, Virginia, and Maryland. Beginning project coordinates 39.320125, -77.730847 and ending coordinates 39.321055, -77.719353.

In response to the USFWS email dated July 8, 2021 (attached), the West Virginia Division of Highways (WVDOH) is making a Not Likely to Adversely Affect (NLAA) determination on the US 340 project, on the behalf of the Federal Highway Administration (FHWA). The USFWS email noted three species that needed to be considered for this project. The Indiana bat should not be adversely affected due to the fact that only one acre of trees is being cleared, and the project is not in a known-use area. In addition, the northern long-eared bat should not be adversely affected by the project because of a small amount of tree clearing and the project is not in a known-use area. Also, any effects to the northern long-eared bat would be covered under the 4(d) rule. The Madison Cave Isopod does not occur within the project area.

Your comments on possible effects to Federally-listed threatened and endangered species are requested so that they may be included in our environmental studies. WVDOH is acting on behalf of the FHWA, and as part of the NEPA process, a Section 7 determination concurrence is needed. WVDOH has determined that this project is not likely to adversely affect any threatened or endangered species. Does the USFWS concur with this determination? Should you require additional information, please contact Traci Cummings of our Environmental Section at (304) 414-6429 or at Traci.L.Cummings@wv.gov.

Very truly yours,

Ben L. Hark

Digitally signed by Ben L. Hark
Date: 2021.07.15
08:42:11-04'00'

Ben L. Hark
NEPA Compliance and Permitting Section Head
Technical Support Division

BH:h

Attachments

bcc: DSN(TC, SM)

E.E.O./AFFIRMATIVE ACTION EMPLOYER

Cummings, Traci L

From: Stout, Elizabeth <Elizabeth_Stout@fws.gov>
Sent: Thursday, July 8, 2021 11:18 AM
To: Cummings, Traci L
Cc: Hark, Ben L; Mullins, Sondra L; Loftus, Sandra K; austen.balthazar
Subject: [External] Re: [EXTERNAL] PROJECT REVIEW_EA Scoping Letter for US 340 Rockslide S319-340-15.78 00- Jefferson County

CAUTION: External email. Do not click links or open attachments unless you verify sender.

Traci,

Due to the tree clearing proposed for this project, effects to the Indiana bat and northern long-eared bat should be considered. Because the project is only clearing 1 acre of trees, the USFWS WVFO would not expect there to be adverse effects to the Indiana bat and all effects to the northern long-eared bat would be covered by the 4d rule.

No other federally listed species need to be considered for this project as the project occurs outside of karst areas that support the Madison Cave isopod.

----- I am teleworking in isolation due to the COVID-19 pandemic. Email is the best & quickest way to reach me during this time. -----

Liz Stout (she/her)

Fish and Wildlife Biologist | Transportation Liaison
U.S. Fish and Wildlife Service | West Virginia Field Office
6263 Appalachian Highway | Davis, West Virginia 26260
(304) 679-1619
<http://www.fws.gov/westvirginiafieldoffice/index.html>

From: Cummings, Traci L <Traci.L.Cummings@wv.gov>
Sent: Wednesday, June 16, 2021 1:38 PM
To: Stout, Elizabeth <Elizabeth_Stout@fws.gov>
Cc: Hark, Ben L <Ben.L.Hark@wv.gov>; Mullins, Sondra L <Sondra.L.Mullins@wv.gov>; Loftus, Sandra K <Sandra.K.Loftus@wv.gov>
Subject: [EXTERNAL] PROJECT REVIEW_EA Scoping Letter for US 340 Rockslide S319-340-15.78 00- Jefferson County

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

For your review please find attached an EA Project scoping letter. If you have any questions please let me know.

Thanks,
Traci

Traci L. Cummings

Natural Resources Unit Leader
West Virginia Division of Highways
Technical Support Division
NEPA Compliance Section
304-414-6429 office



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Byrd E. White, III
Secretary of Transportation/
Commissioner of Highways

Jimmy Wriston, P. E.
Deputy Secretary/
Deputy Commissioner

June 16, 2021

Ms. Liz Stout
U.S. Fish and Wildlife Service
West Virginia Field Office
6263 Appalachian Highway
Davis, WV 26260

Dear Ms. Stout:

State Project S319-340-15.78 00
Federal Project NHPP-0340(063) D US
US 340 Rockslide Project
Jefferson County

Please be advised the West Virginia Division of Highways has initiated NEPA studies for the above referenced project. This project is being environmentally cleared using an Environmental Assessment.

The project study area is located along the northbound (NB) and southbound (SB) lanes of US 340 in Jefferson County, WV, in the Loudoun Heights region of the Harper's Ferry National Historical Park and west of the West Virginia / Virginia border on the southern bank of the Shenandoah and Potomac Rivers. US 340 is a high traffic volume corridor serving local, commuter, and truck traffic from West Virginia, Virginia, and Maryland. This corridor also experiences high traffic volume from seasonal tourism due to its recreational and historical significance in the region. The existing cut slopes in the project study area are a product of US 340 construction in the mid-1950s and natural erosion along the Shenandoah River. The cut slopes and the exposed rock of natural slopes vary in height from 150 feet to greater than 300 feet above the roadway. The cut slopes in the project study area exhibit varying degrees of rockfall activity that present potential hazards to the traveling public and require ongoing maintenance by the WVDOH. Beginning coordinates 39.320125, -77.730847 and ending coordinates 39.321055, -77.719353.

Attached please find an ArcView map and TOPO map showing the project location. After screening the project through our GIS Species Layers no RTE species were identified. The project will impact approximately 1.0 acre of forested land. Attached please find the public meeting handout that gives more project information. Because of the work on the rock face a phase 1 portal assessment was completed by HDR consulting and no portals were found. If you have any comments or additional species that need to be considered, please let us know.

At this time, please concur that our species list is correct. Should you require additional information, please contact Traci Cummings of our Environmental Section at (304) 414-6429 or at Traci.L.Cummings@wv.gov.

Very truly yours,

Ben L. Hark
Ben L. Hark
NEPA Compliance and Permitting Section Head
Technical Support Division

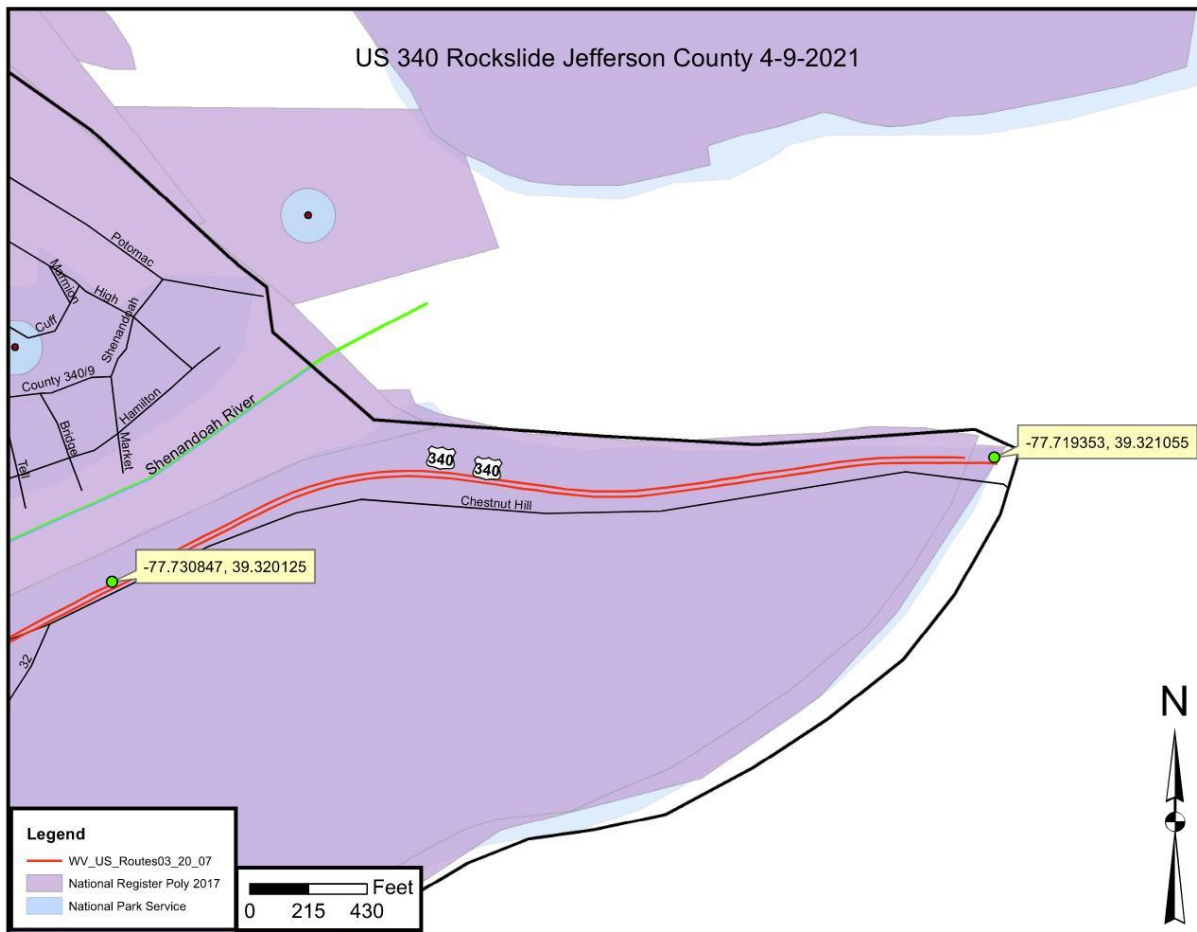
Digitally signed by Ben L. Hark
Date: 2021.07.15
08:42:31 -04'00'

BH:h

Attachments
bcc: DSN (TC, SM)

E.E.O./AFFIRMATIVE ACTION EMPLOYER

US 340 Rockslide Jefferson County 4-9-2021



US 340 ROCK SLIDE PROJECT



STATE PROJECT: S319-340-15.78.00
FEDERAL PROJECT: NHPP-0340(063)D US

MATHER TRAINING CENTER,
HARPERS FERRY, WV

4:00 PM - 7:00 PM

THURSDAY, FEBRUARY 6, 2020

PURPOSE

The purpose of this workshop is to introduce the US 340 Rock Slide Project to the public and solicit input.

The workshop is intended to be informal to maximize the interaction between citizens and the project team. We encourage attendees to examine the project maps and displays, discuss the project with the members of our project team who are here today, and complete the enclosed comment sheet.

WORKSHOP FORMAT

The WVDOH procedures for public workshops are established to ensure meaningful citizen input in the development for proposed projects, in compliance with all applicable regulations and requirements. This Public Information Workshop is from 4:00 pm to 7:00 pm and there will be **no formal presentation.**



REGISTRATION

- 1. Print your name and address on the registration sheet. Additional copies of this handout and the comment sheet are available at the registration table**
- 2. Comments are welcome as you visit the displays around the room**
- 3. Completed comment sheets can be:**
 - **PLACED** in the Comment Box
 - **RETURNED** to any WVDOH representative at the meeting
 - **MAILED** to the WVDOH at the address on the back of this handout



ENVIRONMENTAL STUDIES

Representatives from the WVDOH are available to discuss the environmental study process. Maps depicting the proposed project improvements are available to view.

This meeting complies with the public involvement requirements of the National Environmental Policy Act of 1969 (NEPA) and Section 106 of the National Preservation Act of 1966.



ENGINEERING

Representatives from the WVDOH and HDR are available to discuss the location and preliminary design of the project, how this type of improvement functions/operates, the operational and safety benefits it provides.

Rockfall remediation is required for potential rockfall hazards within the US 340 study area. The preliminary remediation options have been developed for the study area to mitigate potential rockfall hazards and improve public safety.



RIGHT-OF-WAY

The preliminary remediation options have been developed based on the design study completed on slopes within the existing WVDOH right-of way and NPS property. All rockfall treatments will be constructed with the existing WVDOH right-of-way and NPS property.

PROJECT DESCRIPTION

The project study area is located along the northbound (NB) and southbound (SB) lanes of US 340 in Jefferson County, WV, in the Loudoun Heights region of the Harper's Ferry National Historical Park and west of the West Virginia / Virginia border on the southern bank of the Shenandoah and Potomac Rivers. US 340 is a high-traffic volume corridor serving local, commuter, and truck traffic from West Virginia, Virginia, and Maryland. This corridor also experiences high traffic volume from seasonal tourism due to its recreational and historical significance in the region. The existing cut slopes in the project study area are a product of US 340 construction in the mid-1950s and natural erosion along the Shenandoah River. The cut slopes and the exposed rock of natural slopes vary in height from 150 feet to greater than 300 feet above the roadway. The cut slopes in the project study area exhibit varying degrees of rockfall activity that present potential hazards to the traveling public, and require ongoing maintenance by the WVDOH.



PURPOSE

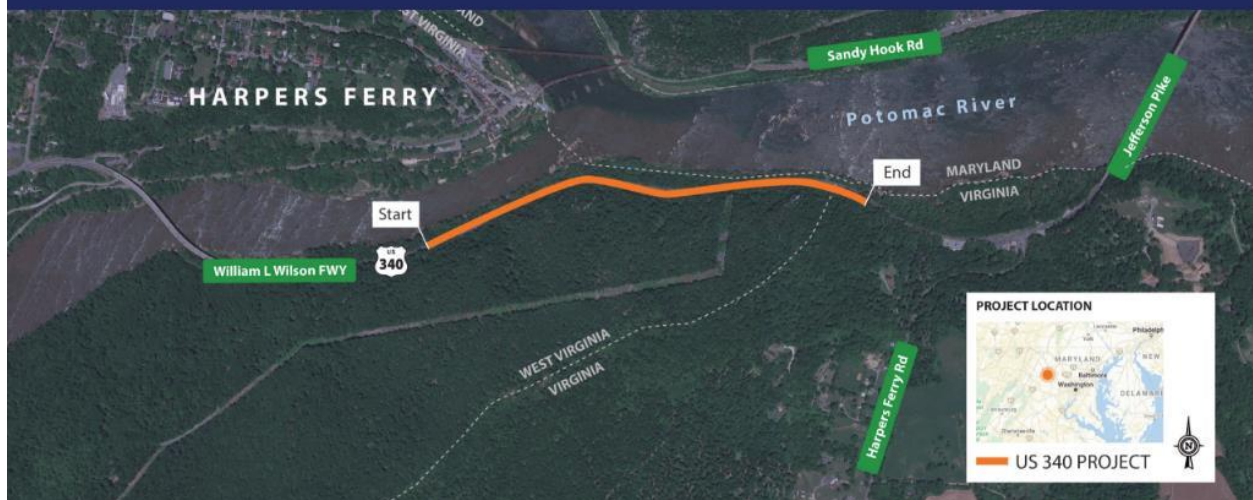
The purpose of this project is to implement rockfall protection and stabilization measures associated with the existing slopes along US 340 NB, while considering local traffic impacts and future development of the US 340 corridor.



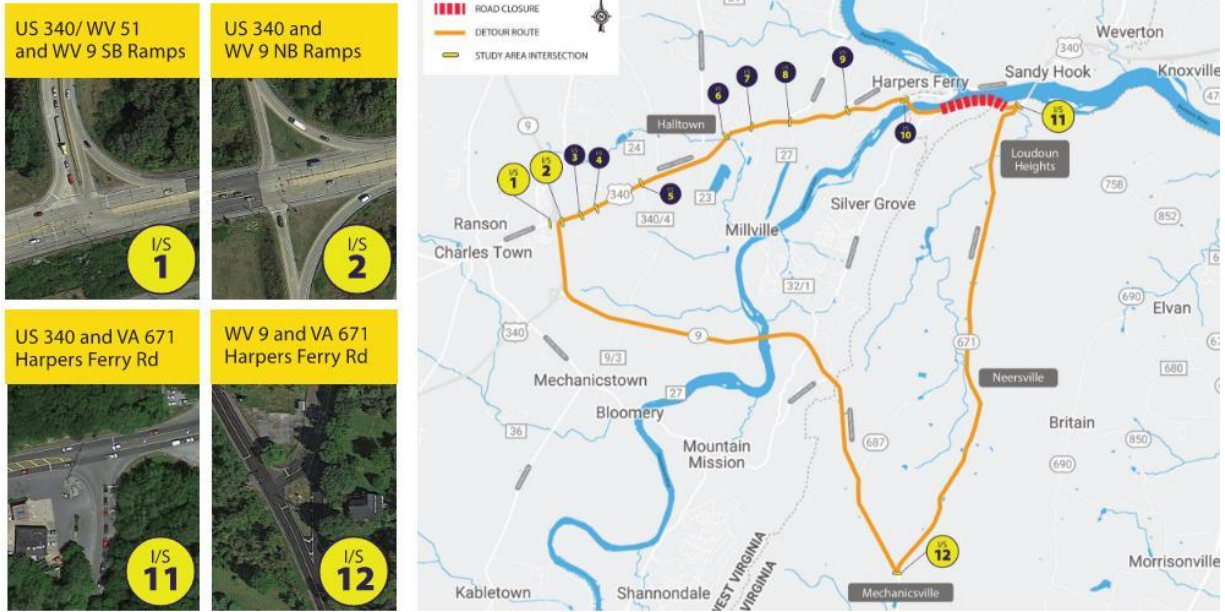
NEED

Due to the high volume of traffic, and that US 340 is the main route through this area, rockfalls pose a threat to public safety. Not only from the rockfall itself, but from road closures that result from rockfalls, and the potential impact to emergency vehicle response times. Based on the analysis in a design study prepared in April 2018, there is a high potential for rockfall in the area and an established public safety need to implement rockfall protection and stabilization mitigation measures for the priority slopes.

PROJECT AREA



FULL DETOUR MAP



LEVEL OF SERVICE (LOS)

A standard measurement, based on vehicle delay and queues, which reflects the relative ease of traffic flow on a scale of A to F.

LOS A

Minor delay at signal, little queuing

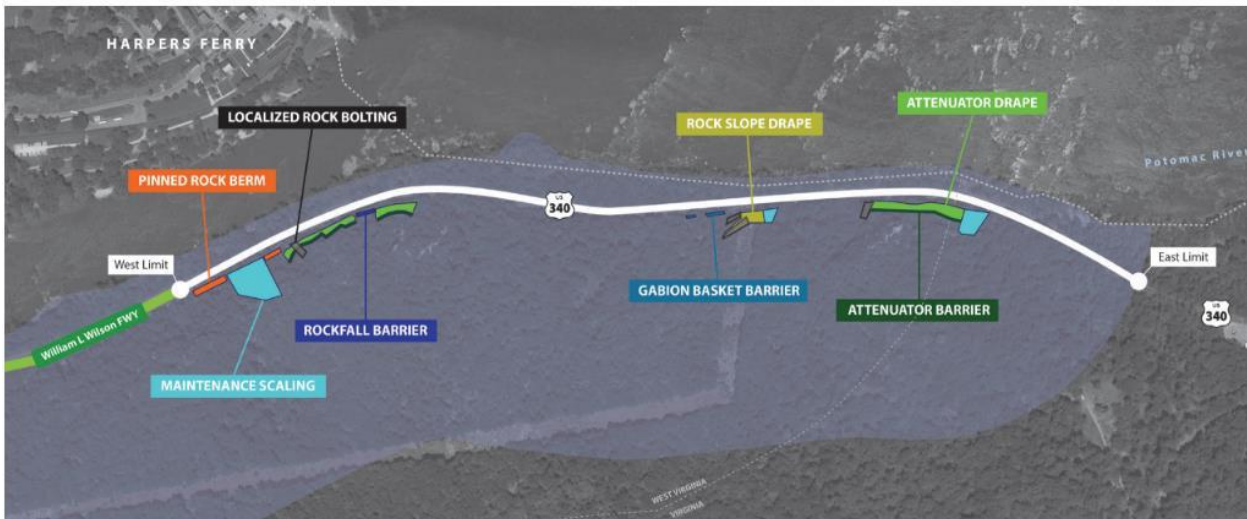
LOS F

Highly congested traffic conditions

Summary of Intersection Level of Service		AM			PM			SAT		
		EXISTING CONDITIONS			FULL DETOUR					
I/S #1	US 340/ WV 51 and WV 9 SB Ramps	B	D	C	B	E	B			
I/S #2	US 340 and WV 9 NB Ramps	C	F	D	E	F	F			
I/S #3	US 340 and Keyes Ferry Rd/ Jefferson Terrace Rd	A	B	B	A	C	B			
I/S #4	US 340 and Patrick Henry Way/ Somerset Village Rd	B	D	D	B	E	E			
I/S #5	US 340 and Country Club Rd and Marlowe Rd	B	C	B	B	B	B			
I/S #6	US 340 and WV 230 Shepardstown Rd	B	B	A	A	B	A			
I/S #7	US 340 and US Customs and Border Protection/ Shipley School Rd	A	A	A	A	A	A			
I/S #8	US 340 and Bakerton Rd/ Millville Rd	B	B	B	A	A	A			
I/S #9	US 340 and Washington St	C	E	B	B	B	B			
I/S #10	US 340 and Shenandoah St ¹	D	E	D	A	A	A			
I/S #11	US 340 and VA 671 Harpers Ferry Rd	C	C	B	A	A	A			
I/S #12	WV 9 and VA 671 Harpers Ferry Rd	B	B	A	F	F	F			

¹- Unsignalized LOS is for worst stop controlled approach.

PRELIMINARY SLOPE REMEDIATION PLAN MAP



WHY SHOULD YOU BE INVOLVED IN THE PROJECT?



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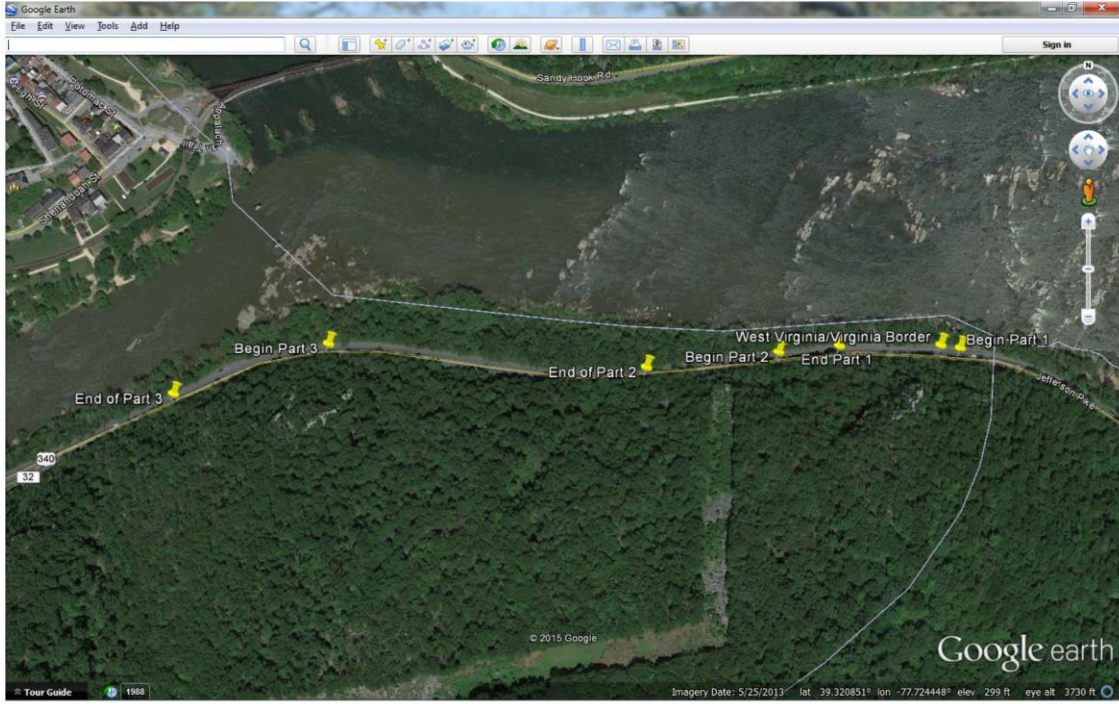


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 Director, Engineering Division
 West Virginia Division of Highways
 1334 Smith Street
 Charleston, West Virginia 25301



Project Information and
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<http://go.wv.gov/dotcomment>

Click on **"Comment on Engineering Project"**, and then click on **"US 340 Slide Repair"**





Appendix D

Public Workshop Comments

US 340 Comments During Public Workshop – February 6, 2020

	Comment	Response
1.	<p>GPS will route traffic to Chestnut Hill Road. Local drivers, tourists familiar with our area, and even first time visitors will look for a shorter detour route than the official detour you’ve mapped out across two states. Vehicles looking to use Chestnut Hill Road will likely create traffic back-ups that will impact Shenandoah Street, Union Street, and the traffic light at Old 340/Washington Street into the west end of Bolivar. Has this scenario been included in your LOS projections for I/S #9 (US 340 and Washington St.) and I/S #10 (US 340 and Shenandoah Street)? And missing from your LOS scores is the frequently used intersection of US 340 and Union Street. Will you update your study to include the intersection of US 340 and Union Street as well?</p>	<p>It is recognized that local drivers and others who utilize technology may choose alternative routes. During the project planning phase, the analysis assumes a worst-case scenario of all drivers utilizing the posted detour. Once the detour is implemented, its functionality (and use of alternative routes) will be monitored.</p> <p>The study phase has been completed and will not be updated to include additional intersections.</p>
2.	<p>Not provided for on the detour map or LOS scores are the impacts along Chestnut Hill Road. WVDOH presenters at the workshop told me Chestnut Hill Road will remain open. Intersections along Chestnut Hill Road will be blocked by traffic back-ups from cars waiting to turn onto Route 9 to the north or Route 340 to the south. Even with “local traffic only” signage, I believe intersections along Chestnut Hill Road neighborhoods will have severe LOS impacts, congested traffic and extensive cueing. Is there a reason those have been excluded from your findings and scoring? Will Intersections along Chestnut hill Road be added to your study and LOS scoring?</p>	<p>It is recognized that local drivers and others who utilize technology may choose alternative routes. During the project planning phase, the analysis assumes a worst-case scenario of all drivers utilizing the posted detour. Once the detour is implemented, its functionality (and use of alternative routes) will be monitored.</p> <p>The study phase has been completed and will not be updated to include additional intersections.</p>
3.	<p>The planned detour will cause a disproportionate hardship for residents of the Harpers Ferry Historic District. We are a tiny village on the peninsula adjacent to the planned project area and Route 340 is the lifeblood of our community. We use the planned construction route for daily activities including commuting, attending school and church activities. Harpers Ferry Historic District residents will be critically impacted. It typically takes 18 minutes to travel to Charles Town, just 5 miles from our homes. Your proposed detour would add approximately 48 minutes, at speed, for residents of the Harpers Ferry Historic District to travel to the other side of the planned project area. That’s 96 additional travel minutes each day for Harpers Ferry Historic District residents to get to work and school. With the LOS grade of “F” that you’ve assigned to the Route 9/Route 671 intersection, Harpers Ferry Historic District residents could</p>	<p>WVDOH has studied a second option for temporary maintenance of traffic in response to these concerns. The second option studied is the Option B Traffic Control Plan which consists of staged traffic patterns to permit vehicular traffic on US 340 during slope remediation activities. More information regarding this option is located on Page 9 in the body of the Environmental Assessment.</p>

US 340 Comments During Public Workshop – February 6, 2020

	<p>anticipate detours approaching 1 hour, each way, for almost 2 additional hours of travel time for daily activities. I urge you to allow Harpers Ferry Historic District residents to travel along construction crew access ways along the work area that are typically closed to the general public. There are approximately 150 resident households in the Harpers Ferry Historic District, each could be issued a travel pass. That would help mitigate the undue hardship of the planned detour on residents adjacent to the planned project area.</p>	
<p>4.</p>	<p>The purpose of the project is stated to be “to implement rockfall protection and stabilization measures.... while considering.... future development of the US 340 corridor.” All questions I asked about how this project was taking into consideration the future development of the US 340 corridor was shrugged off as something that could not be discussed at the workshop. Attendees expressed concern that the rockfall protection and stabilization would also include widening of the route for an additional travel lane. The increased danger, noise, traffic, and pollution we’ve been experiencing on Route 340 from trucks riding adjacent to our National Park land and city limits of Harpers Ferry should not expand into another lane, and this project should not be designed to accommodate an additional traffic lane, or extended shoulder that would eventually become another travel lane. If widening of the paved portion of any right-of-way will be accommodated by this Rock Slide project, it should be clearly stated to the public, and the public given an opportunity to comment.</p>	<p>The purpose of this project is to address the rock fall issues exclusively. WVDOT is in the process of conducting a study on the future needs of the US 340 corridor, including the section being addressed as part of this project. If and when the future US 340 needs are ready they will be presented to the public in some capacity.</p>
<p>5.</p>	<p>Please provide for unobstructed passage for our local and neighboring county first responders and emergency vehicles through the planned project route. Our community has a deep respect and commitment to those who put themselves in harm’s way to protect us, and we want to see that respect and commitment to first responders accounted for at every stage of this WVDOH project.</p>	<p>Comment Noted.</p> <p>WVDOH will coordinate with first responders to coordinate detours and road closure activities.</p>

US 340 Comments During Public Workshop – February 6, 2020

6.	<p>The Jefferson County Chamber of Commerce supports the project to stabilize the area in an effort to protect vehicles from the damage of following rocks and to protect the citizens within those vehicles from harm caused by the falling rocks. However, US 340 is a major highway in Jefferson County, carrying significant commuter traffic throughout the week. Furthermore, Jefferson County is a major tourist destination attracting millions of visitors each year to Harpers Ferry National Park, Hollywood Casino at Charles Town Races and Event Center, River Riders Family Adventure Resort, and to festivals and events throughout the year.</p> <p>We respectfully ask that as you work through the plans for this work to be done, please keep us informed of the proposed timeline and anticipated delays, as well as alternate routes so we can pass the information on to our Chamber members.</p>	<p>WVDOH will continue to coordinate with the project stakeholders and media to provide advanced notification of the construction and detours.</p> <p>WVDOH has studied a second option for temporary maintenance of traffic in response to these concerns. The second option studied is the Option B Traffic Control Plan which consists of staged traffic patterns to permit vehicular traffic on US 340 during slope remediation activities. More information regarding this option is located on Page 9 in the body of the Environmental Assessment.</p>
7.	<p>Providing a safe environment for passage on US 340 between Chestnut Hill Road and Harpers Ferry Road is a priority to all of us. We are very interested and supportive of the plans to stabilize the area and protect vehicles from damage from unanticipated falling rocks.</p>	<p>Comment Noted.</p>
8.	<p>US 340 is a major highway in Jefferson County carrying significant traffic throughout each weekday and weekend. Commuters travel the road during the morning and evening rush hours, trucks and vehicles travel throughout the day to service businesses in Jefferson County or to use the road to travel to Route 81 in Virginia. Ask that as plans are being made to please work with us on the proposed timeline and anticipated delays and alternate routes to be put in place.</p>	<p>WVDOH will continue to coordinate with the project stakeholders and media to provide advanced notification of the construction and detours.</p> <p>WVDOH has studied a second option for temporary maintenance of traffic in response to these concerns. The second option studied is the Option B Traffic Control Plan which consists of staged traffic patterns to permit vehicular traffic on US 340 during slope remediation activities. More information regarding this option is located on Page 9 in the body of the Environmental Assessment.</p>
9.	<p>I am grateful for the “rock study” along the tri-state/340 corridor- Safety is my goal!</p>	<p>Comment Noted.</p>
10.	<p>The businesses it impacts. We have patients from MD, VA, WVA that come to our practice. We will be impacted with a road closure.</p>	<p>Comment Noted.</p> <p>WVDOH has studied a second option for temporary maintenance of traffic in response to these concerns. The second option studied is the Option B Traffic Control Plan which consists of staged traffic patterns to permit vehicular traffic on US 340 during slope remediation activities. More information regarding this option is located on Page 9 in the body of the Environmental Assessment.</p>

US 340 Comments During Public Workshop – February 6, 2020

11.	Although this comment does not pertain to the Rock Slide Repair proposed plan, as a 16 year resident of Harpers Ferry, would like to see a round-about replace the Holtzman Oil gas station at the intersection of Harpers Ferry Road and Rt. 340. This would very much improve traffic flow through the 2 lane bottle-neck (in the rock slide area) that exists now in long weekend back-ups and will only increase as “growth” comes to the Harpers Ferry area.	Roadway improvements are not part of the scope of the rock slide project and do not meet the Project Purpose and Need as described on pages 1-4 in the body of the Environmental Assessment. The rock slide project is solely a safety improvement project. However, your input regarding roadway improvements for the area are greatly appreciated.
12.	Regarding the traffic situation esp. for commuters. Perhaps set up with the Harpers Ferry train station to work with locals to take train to Brunswick train station and be allowed to leave a car at that stop in Brunswick during project.	Comment Noted.
13.	I’m sure it has been thought of already to let the hikers know who hike into WV.	For trails which are impacted by the proposed construction activities, advanced signing will be provided on the trails.
	Even though people are not supposed to park along 340 they do just concerned. If fences are along riverside that people would know not to cross over after project.	Comment Noted.
14.	Deer at night on 671.	Comment Noted.
15.	The re-route of traffic to Mechanicsville is good and thought out, but traffic study/detours to be planned for the route to Brunswick or Frederick time estimates that the project will take will also be helpful for planning.	Comment Noted.
16.	Would be great to coordinate with CSX to fix the pedestrian bridge to Maryland Heights before this road closure takes place or access will be difficult/impossible. Creates a safety concern for hikers who might then try to walk the highways.	Repairs to the pedestrian bridge are not part of the scope of the rock slide project and do not meet the Project Purpose and Need as described on pages 1-4 in the body of the Environmental Assessment. However, your input regarding pedestrian safety is greatly appreciated.
17.	What is missing from the handout or briefing slides are project length projections. How long is the US 340 Road closure expected? Can DOT fix the foot bridge between MD and VA (train derailment) and let traffic pass from Harpers Ferry to MD? Each option should have time associated. Need timelines and include the associated costs and responsible bill payer.	As the project moves further into design, the estimated closures will be developed and provided at the next Public Meeting.
18.	Build another bridge first, if possible or a tunnel.	Roadway improvements are not part of the scope of the rock slide project and do not meet the Project Purpose and Need as described on pages 1-4 in the body of the Environmental Assessment. The rock slide project is solely a safety improvement project. However, your input regarding roadway improvements for the area are greatly appreciated.
19.	Increase commuter train length and parking spots during construction.	Comment Noted.

US 340 Comments During Public Workshop – February 6, 2020

20.	Institute commuter bus routes during construction.	Comment Noted.
21.	Have MARC accept Brunswick tickets in Harpers Ferry and Duffields to help reduce the traffic.	Comment Noted.
22.	Increased amount of people will end up driving Chestnut Hill Rd. Instead of going to Charlestown.	It is recognized that local drivers and others who utilize technology may choose alternative routes. During the project planning phase, the analysis assumes a worst-case scenario of all drivers utilizing the posted detour. Once the detour is implemented, its functionality (and use of alternative routes) will be monitored.
23.	Please add addition routes to cross from WV into Maryland before this project. It seems taxpayer money should go first to improving traffic, especially for commuters, before admittedly necessary, public safety projects. Having more alternate routes will make the impact of this project less severe.	Roadway improvements are not part of the scope of the rock slide project and do not meet the Project Purpose and Need as described on pages 1-4 in the body of the Environmental Assessment. The rock slide project is solely a safety improvement project. However, your input regarding roadway improvements for the area are greatly appreciated.
24.	The detour doesn't take into account the fact that most of the people in Jefferson County live north of 340 and will be finding alternative routes through Maryland to Shepherdstown. Those rds. Are already in poor shape. It will be a nightmare. Those going to Martinsburg will go that way too. One third of Jefferson County commutes to DC or Baltimore. Another large portion depends on tourists. This will kill us. MARC train service would be an alternative but they're getting ready to cut off service to West Virginia. That will increase the number of people who need 340.	It is recognized that local drivers and others who utilize technology may choose alternative routes. During the project planning phase, the analysis assumes a worst-case scenario of all drivers utilizing the posted detour. Once the detour is implemented, its functionality (and use of alternative routes) will be monitored.
25.	During the peak tourist/tubing season the proposed project area is notorious for parking at the pull off area in the side of the road.	Comment Noted.
26.	Can speed limit be adjusted to compensate on additional drive time?	Roadway speeds are determined based on a number of design factors. Increases to posted roadway speeds are not advisable for a temporary condition.
27.	Consideration for drivers that are unacquainted with the detour roads would be appreciated. Signs, notices, and law enforcement attention.	The detour will include both advanced signing and confirmation signing while on the route.
28.	Can more train service be serviced during the closure.	Comment Noted.

US 340 Comments During Public Workshop – February 6, 2020

29.	I live in Harpers Ferry and work in Frederick. Less friction on my commute would be deeply appreciated.	Comment Noted.
30.	Can trucks be diverted to another separate route from other traffic.	Comment Noted.