

APPALACHIAN HIGHWAY CORRIDOR H KERENS TO PARSONS PROJECT

State Project Number X342-H-40.21

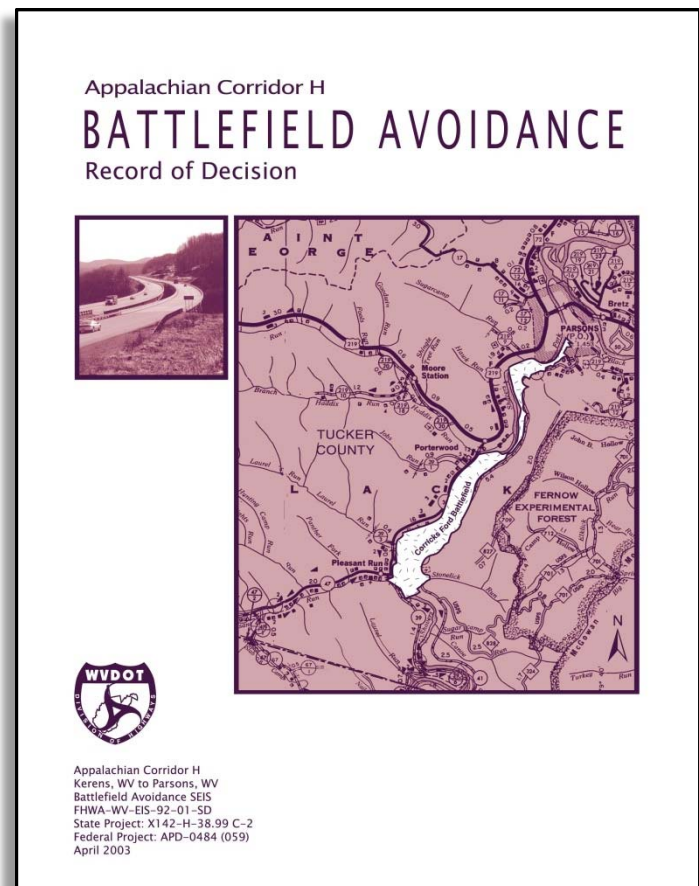
Federal Project Number NHPP-0484

RE-EVALUATION OF THE SUPPLEMENTAL FINAL ENVIRONMENTAL IMPACT STATEMENT AND RECORD OF DECISION

*Originally Approved October 29, 2002
and May 12, 2003*

FINAL NOVEMBER 2017

Federal Highway Administration and
West Virginia Department of Transportation, Division of Highways



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Approved By:


FEDERAL HIGHWAY ADMINISTRATION

11/30/17
DATE

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List of Acronyms

ADT – Average Daily Traffic
APE – Area of Potential Effect
AROD – Amended Record of Decision
BA – Biological Assessment
CFR – Code of Federal Regulations
EIS – Environmental Impact Statement
ESA – Endangered Species Act
FHWA – Federal Highway Administration
LR-NRD – Local Resolution - National Hydrography Dataset
MBTA – Migratory Bird Treaty Act
MNF – Monongahela National Forest
MOU – Memorandum of Understanding
MPA – Management Prescription Area (designations by the U.S. Forest Service)
NEPA – National Environmental Policy Act
NLEB – Northern long-eared bat (*Myotis septentrionalis*)
NRHP – National Register of Historic Places
RBC – running buffalo clover (*Trifolium stoloniferum*)
RFSS – Regional Forester's Sensitive Species
ROD – Record of Decision
ROW – Right of Way
SFEIS – Supplemental Final Environmental Impact Statement
SWP – Small whorled pogonia (*Isotria medeoloides*)
SWPPP – Stormwater Pollution Prevention Plan
TCDA – Tucker County Development Authority
USFWS – United States Fish and Wildlife Service
USGS – United States Geological Survey
WVDNR – West Virginia Division of Natural Resources
WVDOH – West Virginia Division of Highways
WVDOT – West Virginia Department of Transportation

1.0 Re-evaluation Background & Approach

1.1 Introduction

This document has been prepared pursuant to Title 23 Code of Federal Regulations (CFR) Part 771 and related Federal Highway Administration (FHWA) procedures which require a written re-evaluation prior to the request for FHWA action (e.g., final design or construction) when a time lag or changes related to the project have occurred between the previous National Environmental Policy Act (NEPA) approval and the request for action. The purpose of a re-evaluation is to assess whether any changes that may have occurred in project design, scope, affected environment or proposed mitigation will require supplemental environmental documentation.

The West Virginia Department of Transportation, Division of Highways (WVDOH) circulated the Supplemental Final Environmental Impact Statement (SFEIS) for the Kerens to Parsons Project in the fall of 2002, and FHWA approved the Amended Record of Decision (AROD) for the project on May 12, 2003. Since that time, the Selected Alternative has undergone adjustments, and the alignment carried forward is now called the "Refined Selected Alternative."

A written re-evaluation of the findings of the 2002 SFEIS and 2003 AROD was completed for the Refined Selected Alternative in 2015, and construction began on approximately half of the project (or "Section 1," as defined below). For the remaining half of the project (or Sections 2 and 3, as defined below), another written re-evaluation is now required because alignment shifts not previously assessed have been developed. This re-evaluation document assesses whether changes to the design in the remaining half of the project, or other changes in project scope, affected environment or proposed mitigation, will require supplemental environmental documentation. The 2015 Re-evaluation document is incorporated into this document by reference (WVDOH, 2015).

As described in Section 1.1.1.1 below, because the Kerens to Parsons Project is being constructed using the "Design-Build" project delivery method, an additional re-evaluation is being conducted for Section 1 and may be necessary in the future for other sections of the project.

1.1.1 Kerens to Parsons Project Re-evaluation Approach

The Kerens to Parsons Project has been divided into three sections to facilitate the engineering, funding, and construction contracting processes. The three sections are defined as follows and are shown in Figure 1:

- Section 1 (Kerens to US 219 Connector, just west of Parsons), 7.5 miles;
- Section 2 (US 219 Connector to WV 72 north of Parsons), 3.7 miles; and,
- Section 3 (WV 72 to US 219 near Mackeyville), 4.3 miles.

After the signing of the AROD, WVDOH undertook detailed engineering of the Selected Alternative to design waste sites and minor drainage and to generate 50-scale mapping. As a result, and as is typical on highway projects, minor shifts occurred along the full length of the Kerens to Parsons Project to adjust for more detailed understanding of local topography, geology, hydrology, etc. The entire Selected Alternative with the refinements developed since the signing of the AROD was shown to the public in an Open House Public Meeting in June of 2015 (see Section 2.1.1).

In 2015, Section 1 underwent more detailed environmental analyses and design, and FHWA re-evaluated the SFEIS/AROD in light of the refinements to the Selected Alternative as well as changes to the surroundings and new issues. The Re-evaluation was signed in November of 2015, and WVDOH has proceeded to the Design-Build phase for Section 1, which is further described in the following sub-section.

In 2016, Sections 2 and 3 have undergone more detailed environmental analyses and design; therefore, refinements to the Selected Alternative in these sections are being evaluated in this document. This document incorporates by reference the 2015 Re-evaluation for consideration of the changes in Section 1 while focusing on the changes in Sections 2 and 3 which are not already in the construction phase.

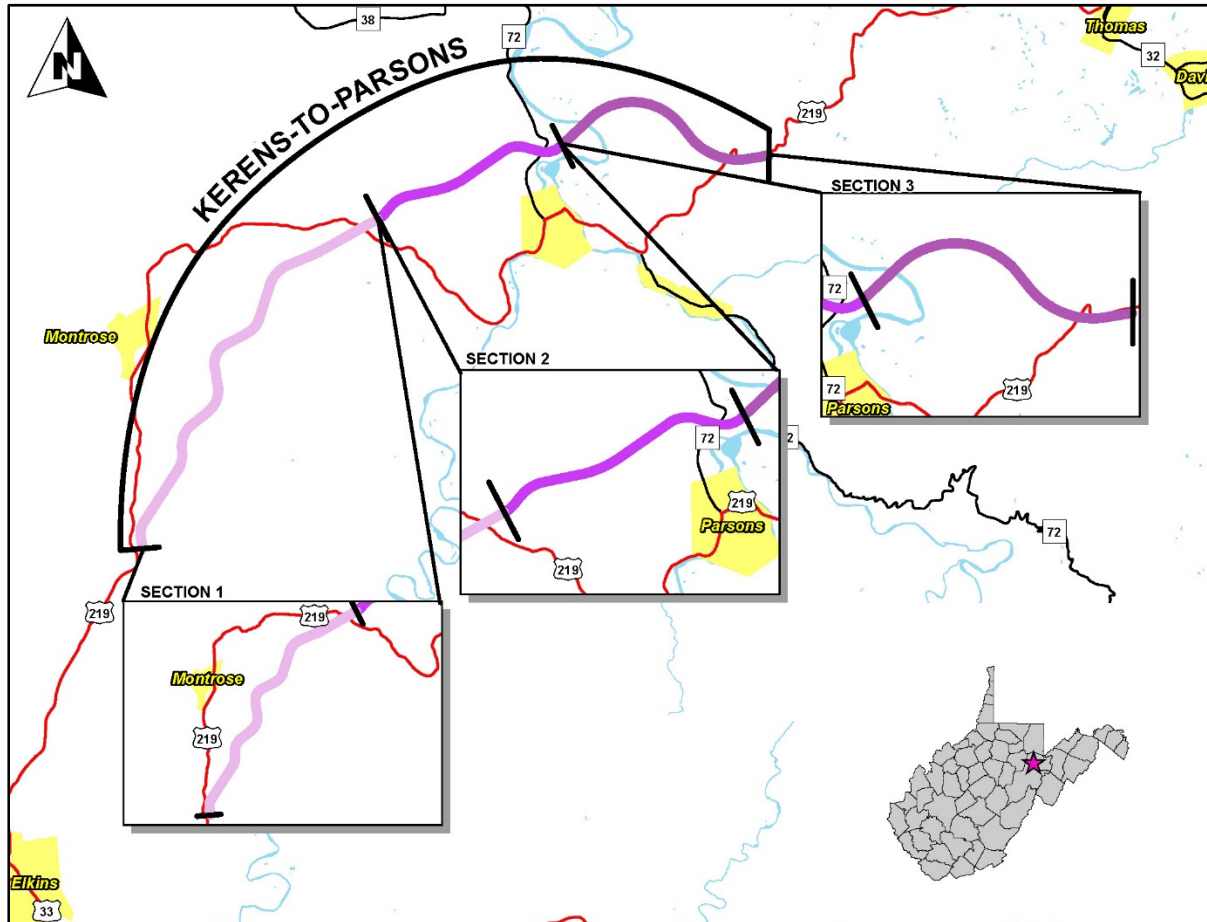


Figure 1. The three Sections used for construction phasing of the Kerens to Parsons Project

1.1.1.1 Design-Build Process and Re-evaluations

The Kerens to Parsons Project will be constructed using a Design-Build construction process as opposed to the traditional Design-Bid-Build process. "Design-Build" is a method of project delivery in which the final design and construction services are performed by a single contractor ("Design-Build Team"), which tends to reduce project delivery and construction time. The Design-Build Team designs the project based on criteria and constraints provided by WVDOH.¹ Although more responsibility is transferred to the Design-Build Team through this arrangement, this change in project delivery is not anticipated to affect significant impacts that warrant review in a Supplemental EIS. However, the Design-Build Team may propose enough change that a written Re-evaluation is required by FHWA

¹ The criteria and constraints have been developed with input from the Forest Service and includes all project commitments made in the 1996 EIS, the 2003 AROD, the 2003 MOU, and other commitments made through resource agency coordination since 2003 (e.g., a Biological Assessment and Bat Conservation Plan approved by the USFWS).

prior to construction. A Re-evaluation would also be required if there is substantial regulatory change, substantial new information about the affected environment, or a substantial amount of time passes before construction begins.

For Section 1, the Design-Build Team, in coordination with WVDOH and FHWA, completed a Re-evaluation in July 2017 and concluded that a Supplemental EIS is not required for changes within that section.

For Sections 2 and 3 of the Kerens to Parsons Project, this document is presenting a written Re-evaluation based on the design that will be provided to future Design-Build Teams. However, if future Design-Build Teams alter the design as compared to the current version, additional Re-evaluation(s) may be required. Also, as stated above, it is possible that substantial regulatory change, new information, or time passage would require a Re-evaluation. As construction of the Kerens to Parsons Project moves forward, WVDOH will maintain impact totals for all of the sections of the project combined. If and when a new Re-evaluation is prepared for changes in a particular section of the Kerens to Parsons Project, WVDOH will submit the Re-evaluation to FHWA along with that summary impact table to show the overall Kerens to Parsons impact totals and how proposed changes have affected previously submitted totals.

1.1.2 Summary of Proposed Action

The Kerens to Parsons Project involves the construction of an approximately 15.5-mile, new location, four-lane divided highway, with partial control of access, between the West Virginia localities of Kerens and Parsons. The Kerens to Parsons Project begins where previous Corridor H construction ended - in Kerens, 0.2 miles north of the intersection of US 219 and Randolph County Route 7 (Clifton Run Road), and ends east of the City of Parsons, 0.2 miles south of the northernmost point at which Tucker County Route 219/4 (Mackeyville Road) intersects US 219 (Exhibit 1). A review of the status of Corridor H segment construction, including the Kerens to Parsons Project, is included with Exhibit 2.

For more background on the proposed action, the reader is referred to Section 1.0 of the 2015 Re-evaluation (WVDOH, 2015). Information therein includes a review of the purpose and need, the alternatives analysis that led to selection of an alternative in the 2003 AROD, and a summary of the Corridor H history, including a summary of legal challenge and the resulting settlement agreement.

Exhibit 1 shows the project area and Refined Selected Alternative. For Sections 2 and 3 (the focus of this document), Exhibit 1 also shows the Selected Alternative as it was approved in 2003 because these alignments will be compared throughout this evaluation.

2.0 Re-evaluation Analysis for Kerens to Parsons Project

FHWA guidance (Technical Advisory T.A. 6640.8A) states that, "There is no required format for the written evaluation. It should focus on the changes in the project, its surroundings and impacts, and any new issues identified since the final EIS was approved. Field reviews, additional environmental studies (as necessary), and coordination with other agencies should be undertaken (as appropriate to address any new impacts or issues) and the results included in the written evaluation."

For this Re-evaluation, changes to the proposed project are addressed in Section 2.1, changes to the project surroundings are addressed in Section 2.2, and changes in impacts are addressed in Section 2.3. Other "new issues" are addressed as appropriate within one of these other categories. For example, new project mitigation related to bat habitat conservation is addressed within Section 2.3 with the re-evaluation of threatened and endangered species impacts.

For many of the anticipated impacts and as discussed throughout the following sections, WVDOH has developed mitigation measures to avoid, minimize and mitigate for the impacts. These measures are considered with the re-evaluation and have been added to "environmental compliance tracking" tables for construction contractors to help ensure implementation (Appendix A)).

2.1 Changes in the Project

As documented in the 2015 Re-evaluation for the project (WVDOH, 2015), the need for and purpose of the project has not changed. However, WVDOH has received additional comments on the project since that re-evaluation, and the Refined Selected Alternative has undergone further development. These topics are addressed below.

2.1.1 Public Coordination

As summarized in the 2015 Re-evaluation, WVDOH and FHWA hosted an Open House Public Meeting for the Kerens to Parsons Project on June 30, 2015, from 4:00 PM to 7:00 PM. The alignment shared at the meeting included the best information for the entire alignment known at that time for the elements of the project being presented, such as length, cost, and estimated excavation amounts. The presentation of the alignment showed draft changes to Sections 2 and 3. The alignment as shown at the meeting is provided in Appendix B. Presenting those draft changes offered opportunity for WVDOH to receive feedback from the public even while refined engineering and environmental studies were still ongoing in Sections 2 and 3.

The 2015 Re-evaluation reviewed the comments received during the 30-day comment period following the public meeting. Since that time, WVDOH has received one additional letter and one petition, both of which address concerns in Sections 2 or 3. Copies of these complete submissions are included in Appendix C. A summary of the comments and the WVDOH responses are as follows:

- Two letters were received from families who are relatives, neighbors, and residents on WV 72 within the proposed right-of-way (ROW). Both letters expressed concern for plans to relocate their home and their relatives' home. WVDOH responded with a letter explaining that one of the residences was already going to be taken with the alignment as shown in 2002, and why the second residence will also now be taken with the design changes that improve the safety of the Corridor H intersection with WV 72. WVDOH also provided the anticipated schedule for ROW acquisitions.
- One petition was received from residents of Wolf Run Road. Thirty-four (34) people signed the petition, all but two (2) of whom had addresses along Wolf Run Road. They expressed concern for relocations, for historic character of the community, for disruption to water sources (springs and wells), for the loss of woodlands which

provide a fuel source, and for loss of property value. They suggested shifting the route to the south to overlap more vacant property. WVDOH responded explaining the alignment in this location had not shifted since presentation to the public in 2002, and that correspondence with the SHPO indicated the area did not contain historic properties (i.e., listed on or eligible for listing in the National Register of Historic Places). WVDOH also stated that water supply issues will be addressed in the ROW acquisition process, and provided the anticipated schedule for that process.

The public outreach process did not reveal new issues that warranted review in a supplemental EIS. None of the changes that have occurred to the alignment since the time of the public meeting are related to the commenters' concerns.

2.1.2 Refined Selected Alternative

Since the 2003 AROD, the Selected Alternative has undergone refinements. For evaluation in an EIS, detailed engineering is not required; however, the more detailed engineering that occurs after approval of an alternative can reveal new impacts and issues. The Selected Alternative for the Kerens to Parsons Project was approximately 30 percent engineered by the issuance of the 2003 AROD. That same year, final design engineering was begun to improve function and reduce cost without sacrificing basic functions.

Refinements within Section 1 were thoroughly analyzed for environmental impacts and reviewed with resource agencies. Analysis results for Section 1 were documented in a written Re-evaluation, signed by FHWA on November 9, 2015.

In Sections 2 and 3, refinements have occurred to the cut/fill limits throughout the alignment as final design has progressed. As detailed in the following sections, two (2) adjustments were general and affected minor changes throughout Sections 2 and 3, and five (5) adjustments were for specific reasons at specific locations. For reference, Exhibit 3 comprises 6 plan sheets detailing the Refined Selected Alternative and Selected Alternative in Sections 2 and 3.

2.1.2.1 General Adjustments

Excavation Balance

As discussed in the 2015 Re-evaluation for Section 1, engineering has been conducted for Sections 2 and 3 to design waste sites and minor drainage, and to generate 50-scale mapping instead of the 200-scale mapping used for the SFEIS analyses. As is typical on highway projects, minor shifts occurred throughout the length of the project to adjust for more detailed understanding of local topography, geology, hydrology, etc. At the time of the previous re-evaluation, which was prior to this detailed engineering for Sections 2 and 3, it was estimated that there would be no excess excavation (i.e., waste) created during roadway construction. However, with the detailed engineering, and in particular because of the changes necessitated by the specific issues addressed elsewhere in this section (e.g., rock fall catchment areas and shifts to avoid protected plant species), excess excavation became part of the project and locations needed to be found for placing the waste. Additionally, because of the special conditions for construction within the MNF as controlled by the 2003 Memorandum of Understanding (MOU) among the FHWA, WVDOH and the Forest Service (described in the 2015 Re-evaluation), WVDOH worked to reduce the overall footprint of the road within the Forest as part of the design of waste areas.

These considerations led to minor adjustments throughout Sections 2 and 3, the design of two off-site fill areas within the MNF (which was coordinated with the Forest Service), adjustments to bridge lengths, and the elimination of a

bridge over Sugarcamp Run (detailed in the next section). Unlike the analyses in the SFEIS, the impacts associated with the off-site waste sites are included in this environmental evaluation.

Roadway Safety

Developments in highway cut slope design in WV have led to new directives in roadway construction. To reduce the risk of injury to the public on the roadway, additional buffer zones at the toe of cut slopes are added to distance the public from possible loose debris falling from the cut rock face above the roadway. This new slope design and additional buffer increases the width of cuts for the Kerens to Parsons Project, and, therefore, the overall project footprint.

The results of geotechnical studies were considered with the design of rock fall catchment slopes.

2.1.2.2 Specific Adjustments

The cumulative effects of all changes are addressed in Section 2.3, broken out by resource and issue as they were presented in the SFEIS. However, for five areas of the Refined Selected Alternative, there have been more substantial changes to the proposed alternative. These areas of change are described below, from west to east.²

- **Shift to the south of the Selected Alternative and changes to Shingletree Trail near the western terminus of Section 2** (see Exhibit 3, Sheets 1 and 2). A shift was necessary in the western portion of Section 2 to avoid a population of small whorled pogonia (*Isotria medeoloides*) (SWP), which is federally listed as threatened. Because this population was discovered during the update of botanical surveys in 2016, this shift was not shown during the 2015 public outreach effort.

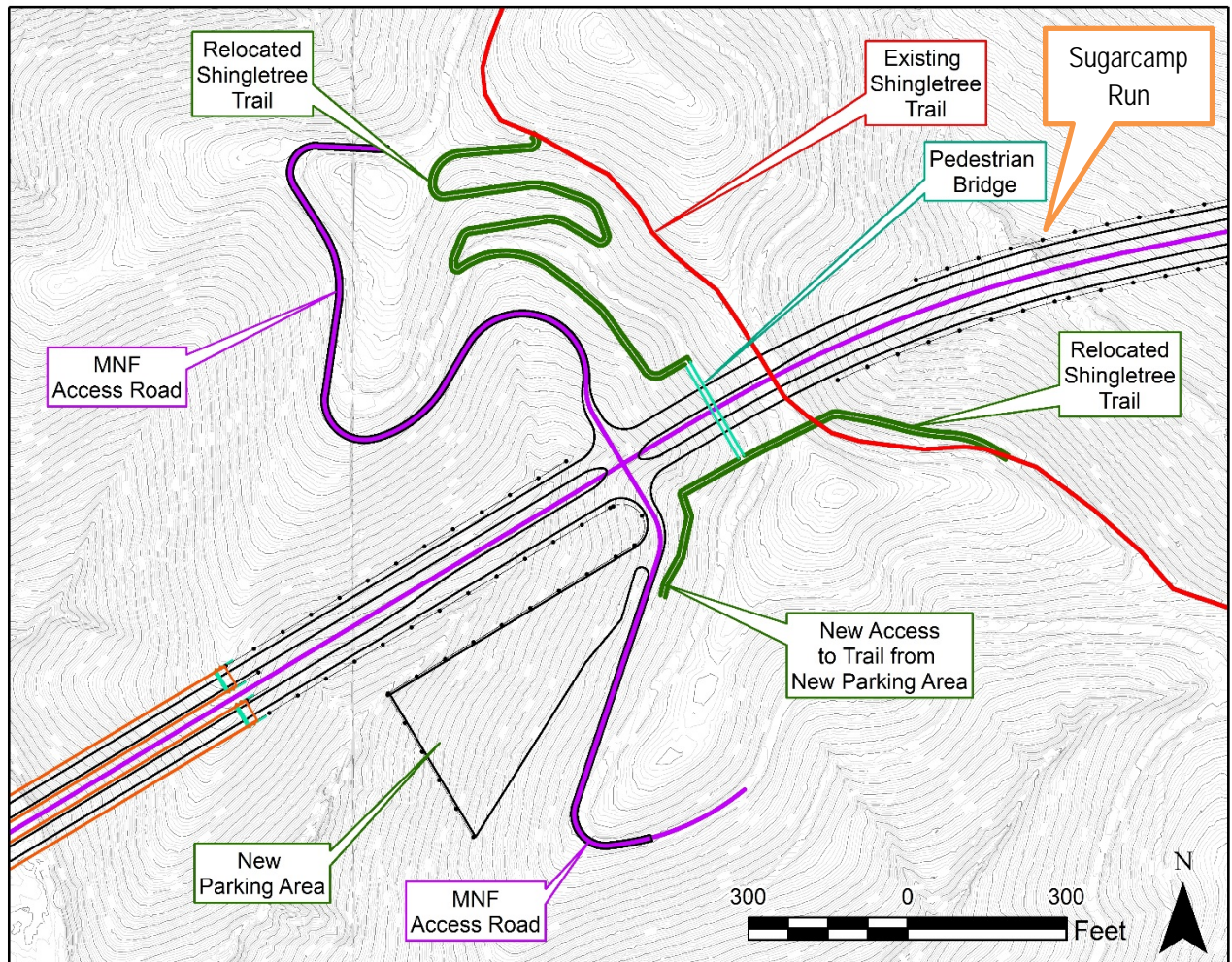
Also since the previous Re-evaluation, WVDOH has coordinated with the Forest Service to mitigate for impacts to the Shingletree trail in Section 2. As presented in the 2003 AROD, the Selected Alternative did not yet include a plan for rerouting the trail, but preliminary designs of the Refined Selected Alternative included rerouting the trail under one of the new highway bridges. After recent coordination with the Forest Service, WVDOH has committed to adding a pedestrian bridge along with a parking lot for the trail crossing, as shown in Figure 2.

The following changes to impacts have occurred in this area:

- Increase in stream length impact by approximately 2,100 feet;
- Reduction in the amount of trail length that is being re-routed from approximately 512 feet to 400 feet; and
- Addition of pedestrian overpass and parking lot for trail access.

² Along with each description, key impact changes are listed. These issues are addressed more thoroughly in Section 2.3 under the appropriate headings. It should be noted that the Refined Selected Alternative impacts listed for wetlands and streams reflect comparisons to the Selected Alternative impacts when updated datasets are applied to BOTH alternatives and not to the Selected Alternative impacts as presented in the SFEIS. The difference in datasets is addressed in Sections 2.3.12 and 2.3.13.

Figure 2. Relocation of Shingletree Trail with Revised Selected Alternative



- **Elimination of bridge over Sugarcamp Run** (see Exhibit 3, Sheets 1 and 2). This area is actually within the region addressed by the previous shift description (see upper right of Figure 2); however, the specific changes to the Sugarcamp Run crossing deserve additional discussion.

The Selected Alternative included a 590-foot bridge at this location. Because of the special conditions for construction within the MNF, WVDOH developed additional engineering to account for all fill material within the MNF and reduce the overall footprint of the road within the MNF. This led to the elimination of this bridge and the design of off-site fill areas. Keeping the bridge was determined not to be practicable. This adjustment to the alternative was shown during the 2015 public outreach effort.

Placing a pipe and fill at this location instead of a bridge added stream impact; however, it is unknown how much impact may have been required for placement of the excess overburden with the Selected Alternative design. Specifically within the area that was previously bridged, stream length impact increased by approximately 1,600 feet, approximately 875 of which is perennial. Again, this total is also included with the total from the previously discussed shift (2,100 feet).

- **Reconfiguration of the interchange with WV 72 in Parsons** (see Exhibit 3, Sheet 3). Traffic studies completed after the 2002 SFEIS indicated that this interchange had to be expanded for safety reasons. In particular, the design shown in the SFEIS would not handle anticipated truck traffic. With the former design, traffic turning off of Corridor H would have to slow to a near stop at the bottom of a long down grade, thus increasing the potential for rear end collisions. With appropriately sized and graded entrance ramps, not only will the chance for rear-end collisions be reduced, but also trucks will have sufficient distances for acceleration to merge onto Corridor H.

Also since the 2002 SFEIS, Corridor H was raised in elevation in the region of this interchange and the western abutment to the Cheat River bridge. This allows for more steady grades, especially with consideration for the relatively steep climb needed for the alignment on the eastern side of the river. Also, the additional fill needed for this gain in elevation allows Sections 2 and 3 of the Kerens to Parsons project to achieve a balance of earthwork (i.e., no excess waste or borrow is required). With these changes to the earthwork, the bridge over the Cheat River will be shorter than in the Selected Alternative design. Again, it should be noted that design of the Selected Alternative did not include balancing earthwork; therefore, it is unknown how much impact may have been required for placement of excess overburden.

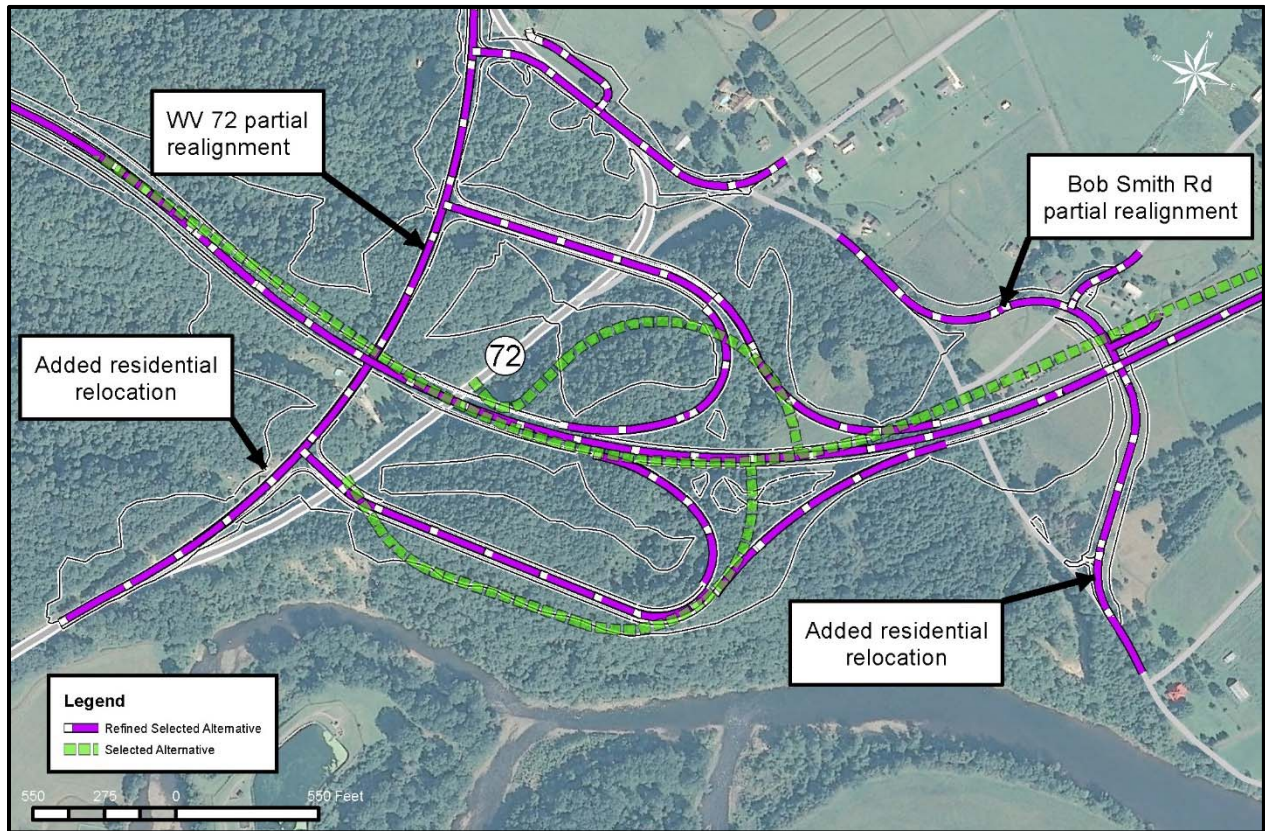
Because of the changes described above, two roads will need realigning in this portion of the project (Figure 3). WV 72 will be relocated to the west to allow for adequate ramp lengths. As described above, the ramp lengths are necessary to improve safety. This realignment will remove a sharp horizontal curve along WV 72, thus improving the roadway geometry and site distances. Also, where the western bridge abutment is proposed, Bob Smith Road will be relocated to the east.

This new interchange and its associated relocations were shown during the 2015 public outreach effort. Comments were received from residents who will be relocated along WV 72, and WVDOH responded with additional study and response to the commenters (see Section 2.1.1); however, aside from minor adjustments to cut/fill limits, the Refined Selected Alternative has remained the same in this region as presented at that time.

The following changes to impacts have occurred in this area:

- Relocation of additional residence along WV 72 (Figure 3);
- Relocation of apartment building (6 dwellings) on Bob Smith Road (Figure 3);
- Increase in wetland impact by approximately 6.3 acres; and
- Increase in stream length impact of approximately 7,400 feet.

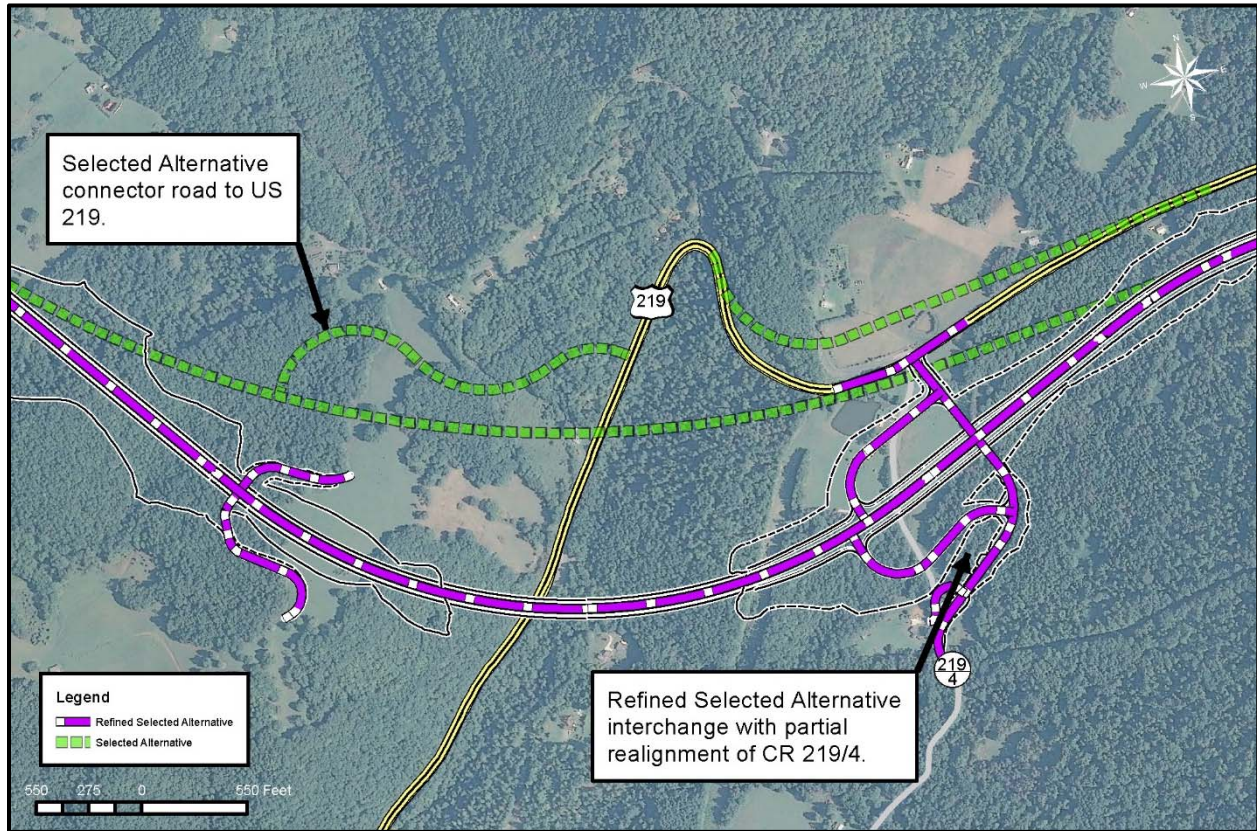
Figure 3. Roadway realignments and new relocations at the intersection with WV 72



- **Shift to the south of the Selected Alternative in Section 3 east of the Cheat River crossing** (see Exhibit 3, Sheets 4 and 5). This shift was necessary to avoid a population of running buffalo clover (*Trifolium stoloniferum*) (RBC), which is federally listed as endangered. Because this population was discovered during the update of botanical surveys in 2016, this shift was not shown during the 2015 public outreach effort. The following changes to impacts occurred:
 - Relocation of a hunting cabin;
 - Increase in wetland impact by approximately 0.02 acre; and
 - Increase in stream length impact by approximately 400 feet.
- **Shift to the south of the Selected Alternative for the US 219/Roaring Run bridge and local roadway access** (see Exhibit 3, Sheets 5 and 6). The eastern terminus region of the project in Section 3 has undergone several adjustments. In order to improve the grade of the roadway as it approaches its terminus, the bridge was shifted approximately 600 feet to the south (Figure 4). With the highway more elevated in this region, traffic will have a less steep climb up Backbone Mountain to the east within the Parsons to Davis portion of Corridor H. The shift also allows for an interchange instead of a single connector road to the local roadway network (Figure 4); therefore, vehicles will not be forced to make left turns across highway traffic. The Refined Selected Alternative will have an interchange with Mackeyville Road (CR 219/4), which will then offer the means for traffic to access US 219. Because of the position of this interchange, the Refined Selected Alternative must realign a small section of CR 219/4. These changes were shown during the 2015 public outreach effort. The following changes to impacts occurred:

- Decrease in wetland impact by approximately 0.2 acre; and
- Increase in stream length impact by approximately 410 feet.

Figure 4. Bridge over US 219 and Roaring Run and Connections to Local Roadway Network in Section 3



The adjustments to the Selected Alternative described above have undergone appropriate review by resource agencies and the public. Except for the shifts to avoid federally listed plant species populations discovered in 2016, the changes in Sections 2 and 3 were presented to the public in the 2015 Open House Public Meeting (Section 2.1.1). (Precise cut/fill boundaries have changed as well, but those were not presented at the Public Meeting.) For all areas of the Refined Selected Alternative, including the 2016 shift areas, WVDOH has ensured that updated surveys for sensitive resources have taken place and necessary concurrences with resource agencies have been obtained. The re-evaluation of the environmental impacts is detailed throughout Section 2.3.

2.2 Changes in the Surroundings

Changes in the surroundings since the 2003 AROD were addressed in the 2015 Re-evaluation (WVDOH, 2015). That document discussed legal and regulatory changes that affected consideration of impacts to streams and to the northern long-eared bat (*Myotis septentrionalis*). Since the 2015 Re-evaluation, there has been an additional change to the regulatory environment concerning the northern long-eared bat, and there is an update to the status of a trail that crosses the Corridor H alignment.

2.2.1 Northern Long-Eared Bat Final Rule

At the time of the 2015 Re-evaluation, the northern long-eared bat (*Myotis septentrionalis*) had recently been listed as federally Threatened by the USFWS, and WVDOH consulted with USFWS to incorporate acceptable mitigation

measures to avoid and minimize potential impacts to the species (WVDOH, 2015). At that time, USFWS guidance for handling potential impacts to the northern long-eared bat was considered interim and subject to change ("Interim Final 4(d) Rule," dated April 2015).

Since 2015, USFWS has issued a Final 4(d) Rule (published in the Federal Register on January 14, 2016). In response, WVDOH adjusted their determination of effect to the species and their mitigation plan. Specifically, tree-clearing is no longer restricted to a certain time of year to avoid potential impacts to the northern long-eared bat. As detailed in Section 2.3.11, Section 7 consultations have been completed for this species.

2.2.2 Allegheny Highlands Trail Update

A resource within Section 1 of the Kerens to Parsons Project that was not addressed in the 2015 Re-evaluation was the Allegheny Highlands Trail, which experienced a change since the 2002 SFEIS evaluation. At that time, the trail was presented as a proposed trail, but since that time the trail was constructed on property owned by WVDOH. The property was leased to the Tucker County Development Authority (TCDA). In 2002, the TCDA did not renew the lease agreement, and WVDOH currently maintains the trail for use by the public. Therefore, the trail is considered a temporary recreation occupancy on WVDOH right-of-way and is not subject to protection under Section 4(f) (23 CFR 774.11(h)). Impacts to the trail and users of the trail are addressed in Sections 2.3.7 and 2.3.26 (with "Recreational Resources" and "Section 4(f)" issues).

2.3 Changes in Impact Assessment

This section presents a reassessment of impacts in light of the changes that have occurred to the project and surroundings since the 2002 SFEIS assessment over and above the changes assessed in the 2015 Re-evaluation of the Kerens to Parsons Project (WVDOH, 2015). If the changes have affected the impact assessment as presented in the SFEIS, those impacts are discussed and assessed. Differences in impacts are assessed for their significance, i.e., the "context" and "intensity" of the change in impact.

Although total values for all of the Kerens to Parsons Project (Sections 1-3) were reported in the 2015 Re-evaluation, the changes that could be attributed to WVDOH's design adjustments were all due to changes in Section 1. The Selected Alternative and the Refined Selected Alternative were the same in Sections 2 and 3 in the 2015 Re-evaluation. Therefore, in order to more clearly examine changes to impacts that were not discussed in the 2015 Re-evaluation, this re-evaluation presents just Sections 2 and 3, with some exceptions, e.g., the topics presented above in Section 2.2 ("Changes in the Surroundings").

2.3.1 Summary of Changes in Impacts

Table 1 provides a summary comparison of impacts with the Selected Alternative and the Refined Selected Alternative in Sections 2 and 3. For both, updated calculations were made using the best available data (e.g., updated field survey results for streams and wetlands, and the latest version of the National Land Cover Dataset). Changes in impacts shown in the summary table are discussed in the following sections of this Re-evaluation (Section 2.3.2 through 2.3.26).

Additionally, in order to facilitate future analyses of either Section 2 or Section 3 as described in Section 1.1.1.1, the impact totals for those sections individually have been separated and presented in Appendix D.

Table 1. Kerens to Parsons Project Sections 2 and 3 - Impact Summary

Resource / Design Element		Sections 2 & 3 Selected Alternative (using best available data)	Sections 2 & 3 Refined Selected Alternative (using best available data)
	Length (miles)	7.8	8.0
	Construction Cost (million \$) ¹	\$213	\$440
	Excavation (million cubic yards) ²	12.9	18.4
	Excess Excavation (million cubic yards) ²	1.6	0.36
	Floodplain (acres) ³	0	0
	Potential 4(f) Impacts	No	No
	Footprint (acres) (including connectors, excluding area under bridges)	388	482.5 (6.3 of which is waste area)
MNF	MNF (Public Lands) (acres)	127.4	156.1
	MPA 3.0 (acres)	56.7	62.5
	MPA 6.1 (acres)	70.7	93.6 (6.3 of which is waste area)
	Trail Realignments – total # (length in feet) ⁴	1 (520)	1 (400)
Land Cover	Forest Cover (acres)	358.3	438.5 (6.3 of which is waste area)
	Agricultural Cover (acres)	7.6	9.2
	Grassland Cover (acres)	0	5.5
	Developed, Open Space (acres)	22.3	29.3
Relocations	Residential Buildings	10	12 (1 of which includes 6 apartments)
	Commercial Buildings	0	0
	Community Facilities/Parks	0	0
Bridges & Waters of the U.S. ⁵	# Bridges	6	5
	Length of Bridges (feet)	Goodwin Run: 1,210 ft Smokey Hollow: 830 ft Sugarcamp Run: 590 ft WV 72: 850 ft Cheat River: 3,600 ft Roaring Run: 1,050 ft Total: 8,130 ft	Goodwin Run: 1,020 ft Smokey Hollow: 1,300 ft -- WV 72: 460 ft Cheat River: 3,300 ft Roaring Run: 1,740 ft Total: 7,820 ft
	Wetlands (acres)	1.10	7.08
	Streams (feet) (including ephemeral streams)	21,542	31,944

Resource / Design Element		Sections 2 & 3 Selected Alternative (using best available data)	Sections 2 & 3 Refined Selected Alternative (using best available data)
Federally Listed Species ⁶	Known populations overlapped	2 (SWP in Section 2 and RBC in Section 3)	0

¹ The reported cost for the Selected Alternative Sections 2 and 3 is based on the 2002 SFEIS reported cost (\$297 million) updated to account for 2015 construction costs (\$424 million total, as reported at the 2015 Open House Public Meeting for the full length of the Kerens to Parsons Project). The cost for the Refined Selected Alternative Sections 2 and 3 is based on WVDOT's January 2017 Financial Plan for the Kerens to Parsons Project. Both cost estimates include the costs of right-of-way; however, the cost for the Refined Selected Alternative additionally includes costs for risk and certain impact mitigation. See Section 2.3.2 for more explanation.

² The terms "Excavation" and "Excess Excavation" are equivalent to the terms "Cut" and "Waste," as used in the SFEIS. As with costs, excavation amounts for Sections 2 and 3 of the Selected Alternative were calculated using a per mile value calculated from the totals in the SFEIS. See Section 2.3.3 for more discussion of earthwork.

³ Floodplain area does not include the area of the Cheat River bridge piers. The SFEIS did not report a value for this unknown precise impact, and the Refined Selected Alternative has not changed this aspect of the design. See also Section 2.3.9.

⁴ The amount of trail that will be realigned has not changed dramatically; however, the trail will no longer be rerouted under a bridge and will instead cross over Corridor H with a pedestrian bridge. See Section 2.3.7 for discussion.

⁵ Wetland and stream impacts are based on 2015 and 2017 field delineations of the Sections 2 and 3 project area and include ephemeral streams.

⁶ Discoveries of two populations of federally listed species within the Selected Alternative alignment are reasons for some of the shifts incorporated to the Refined Selected Alternative.

2.3.2 Economic Environment

Costs for the Selected Alternative and the Refined Selected Alternative are \$213 million and \$440 million, respectively. This difference reflects a different level of precision, with additional categories of costs incorporated to the more recent estimate as explained below.

The Selected Alternative cost is based on the cost reported in the 2002 SFEIS adjusted for 2015 construction costs. The total reported by WVDOT for the entire Kerens to Parsons Project (Sections 1-3) at the 2015 Open House Public Meeting was \$424 million. Using a cost per mile calculation, Sections 2 and 3 are estimated to account for \$213 million of that total. It should be noted that this is also the value used as the Sections 2 and 3 portion of the cost estimate presented for the Refined Selected Alternative in the 2015 Re-evaluation because those sections had not undergone detailed design.

The 2017 Refined Selected Alternative cost is based on more detailed analysis, as presented in the most recent financial plan for the project: Corridor H Initial Financial Plan for Operationally Independent Section Two (Kerens to Parsons), submitted to FHWA on January 27, 2017. The Financial Plan includes factors not included in the SFEIS analysis. The Financial Plan includes the addition of cost for risk of future changes to the project and an estimate for the cost of mitigation for impacts to waters of the U.S. (see Section 2.3.13). Other reasons for higher costs

associated with the Refined Selected Alternative include the expanded interchanges around WV 72 and Mackeyville Road and the costs of moving additional excavated material. These design elements are explained in Section 2.1.2.

2.3.3 Land Cover/Land Use

The 2017 Refined Selected Alternative footprint is approximately 95 acres greater than the Selected Alternative footprint. Approximately 6 of those acres are accounted for by the waste areas, which were not designed for the Selected Alternative at the time of the SFEIS analysis. The remaining increase is because of the balancing of earthwork throughout the alignment, the removal of the bridge over Sugarcamp Run, the expansions of the interchange areas, and the addition of rock fall catchment slopes. Reasons for these changes are addressed in Section 2.1.2.

Land cover impacts were calculated for both alternatives using the most recent USGS dataset and are included in the summary table above (Table 1). Results show that the footprints have similar land cover compositions, with roughly 90% forest each.

The 2015 Re-evaluation described changes to the MNF Forest Plan and the mapping of Management Prescription Areas (MPAs) that have occurred since the 2002 SFEIS. For this Sections 2 and 3 re-evaluation, impacts to public lands were calculated for both alternatives using the most recent dataset. Table 1 shows the results. Impacts to public lands increased from 127 acres to 156 acres. FHWA and WVDOH have coordinated final design on public lands with the Forest Service, which provides stewardship for the MNF public lands. In the coordination process, the Forest Service has been able to comment on details of design plans, such as the location of access points; has been consulted for species and cultural resource effect determinations; and has been a part of developing more detailed mitigation measures than those listed in the 2003 AROD. Specifically, new mitigation measures include the following, which are also included in the Environmental Compliance Tracking Table (Appendix A):

- Measures to be taken to protect MNF lands during snow removal;
- Restrictions on which streams may be used as sources of water for construction processes;
- Specified locations for placement of excess excavation (waste); and
- Incorporation of a pedestrian bridge with the necessary relocation of Shingletree Trail (see Figure 2):

With respect to regional and state plans, the Refined Selected Alternative remains consistent, as discussed in the 2015 Re-evaluation.

In summary, the changes to land cover and land use impacts are minor and will occur in conjunction with enhanced best management practices to mitigate for impacts in the MNF. The changes do not warrant analysis in a supplemental EIS.

2.3.4 Social Environment

Effects to the social environment are not expected to be substantially different now from the effects reported in the 2002 SFEIS analysis. Three road realignments will occur: a shift to the west along WV 72; a shift to the east along Bob Smith Road; and a shift to the east along Mackeyville Road, as shown in Section 2.1.2. Also, the western end of Okey Moore Road will be filled-in as part of adjustments to the bridge over the Cheat River. This fill area and the shift to Bob Smith Road will make the Okey Moore Road neighborhood smaller; however, the Corridor H alignment has also been shifted away from (slightly to the south of) that neighborhood.

The proposed changes were presented to the public in the June 2015 Open House Public Meeting. One petition was received that was signed by members of the Wolf Run Road community (see Appendix C) and expressed several

concerns for impacts to their neighborhood, although the concerns related more to individual losses and not to general community or social concerns. As discussed in Section 2.1.1, WVDOH responded and noted that the alignment had not been changed in this area of the project since the 2002 SFEIS. No businesses or community facilities will be impacted by the changes to the alignment in Sections 2 and 3. Overall, changes to the social environment as a result of the shifts in Sections 2 and 3 do not warrant analysis in a supplemental EIS.

2.3.5 Relocations

With the changes in Sections 2 and 3, three additional structures will be relocated with the Refined Selected Alternative as compared to the Selected Alternative. These include two residential buildings in Section 2 that are both impacted by the changes to the intersection with WV 72: a house to the south of Corridor H along WV 72 where that road must be realigned slightly to the west to accommodate the interchange ramps and an apartment building on Bob Smith Road, potentially housing six renters. The third new relocation is within the area of the shift to avoid the running buffalo clover population in Section 3. This property is a hunting cabin and not a primary residence, so it is not included in the Table 1 inventory.

Except for the hunting cabin relocation, the public was offered opportunity to view these changes in an Open House Public Meeting held in June of 2015. Following that meeting, owners of the house along WV 72, as well as the son of those owners, submitted comments to WVDOH. WVDOH conducted additional study to see if the shift to WV 72 could avoid relocating the house, but found it would not be feasible. The commenters were notified of the reasoning for the relocation and study results. See Section 2.1.1 for more discussion of public coordination.

This change to relocation impacts do not warrant analysis in a supplemental EIS.

2.3.6 Farmlands

This subject was adequately addressed for the entire alignment in the 2015 Re-evaluation (WVDOH, 2015). Additional analysis of impact to farmlands is not warranted.

2.3.7 Recreational Resources

As reported in the 2015 Re-evaluation, the number of trails crossed by the project is not changing, but the precise design of the crossings has changed with refined engineering. In accordance with the 2003 MOU among the FHWA, Forest Service, and WVDOH, trail realignments have been developed to a more detailed and definitive extent than at the time of the 2002 SFEIS.

For Sections 2 and 3, there is an update to the details presented for the crossing of Trail Road 121 ("Shingletree Trail"). Shingletree Trail is located near the western edge of Section 2, east of the bridge over Goodwin Run, as shown on Exhibit 3, Sheet 2. Since 2015, WVDOH has coordinated with the Forest Service to mitigate for impacts to the Shingletree Trail. As presented in the 2003 AROD, the Selected Alternative did not yet include a plan for rerouting the trail, but preliminary designs of the Refined Selected Alternative included rerouting the trail under one of the new highway bridges. After recent coordination with the Forest Service, WVDOH has committed to adding a pedestrian bridge over the mainline of Corridor H, and adding a parking area for trail access, as shown in Figure 2. With the new design, the amount of trail relocation has been reduced from 512 feet, as reported in the SFEIS, to 400 feet, and the Shingletree Trail will be more accessible for public use, in accordance with Forest Service management decisions. Specific design elements that are part of the agreement between WVDOH and the Forest Service are incorporated to the Environmental Compliance Tracking table to be used during the Design-Build process (Appendix A).

Additionally, in Section 1, there is a trail that was addressed as a recreational resource in the SFEIS, the Allegheny Highlands Trail, but it was presented as a “potential Rails-to-Trails project.” Since that assessment, the trail has become a reality and has a group of supporters who host events along the trail and promote its use (Highlands Trail Foundation: <http://highlandstrail.org/>). However, WVDOT owns the trail and maintains it.

The following impacts to the Allegheny Highlands Trail were acknowledged in the SFEIS: “All of the Build Alternatives [including Preferred Alternative DF, which became the Selected Alternative] would bridge the railroad bed allowing for recreational access to continue uninterrupted,” and a “Minimal Degree of Change” to its viewshed. These impacts have not changed with the Refined Selected Alternative; however, there may additionally be temporary impacts associated with the construction of Section 1 of the Kerens to Parsons Project. Construction impacts are being assessed and shared with the Highlands Trail Foundation and the public as appropriate as specific plans are being developed by the Design-Build Team for construction of the Kerens to Parsons Section 1 Project (see Section 1.1.1.1 for discussion of the Design-Build contract delivery process).

The change in impacts to trails in Sections 2 and 3 does not rise to a level of significance that warrants review in a supplemental EIS.

Recreational trails also can be subject to additional consideration of impacts in accordance with Section 4(f) of the Department of Transportation Act of 1966. This issue is addressed in Section 2.3.26.

2.3.8 Visual Environment

With the Refined Selected Alternative, there will be some changes to the visual environment, particularly near the interchanges. Near the shifts away from listed plant species populations, no notable changes are anticipated to the views of or from the new roadway. In the area of the WV 72 interchange and bridge over the Cheat River, the Refined Selected Alternative has more ramps, roadway, and fill material as compared to the Selected Alternative, and a portion of Bob Smith Road will be shifted closer to the river. In the area of the Roaring Run bridge and Mackeyville Road interchange, the Refined Selected Alternative is shifted to the south as compared to the Selected Alternative. These changes are shown and explained in Section 2.1.2.

These changes will affect views of the new roadway as compared to the way the project was presented in the 2002 SFEIS. However, the changes are a minor addition to the substantial changes acknowledged and assessed with the SFEIS for the new roadway. The one neighborhood that was noted as having both a “distinctive visual quality” as well as a “high degree” of visual impact from the Selected Alternative in the SFEIS is the Holly Meadows/River Bend Estates community by the Cheat River. This area will still have a high degree of visual impact with the Refined Selected Alternative. As stated in the SFEIS, these impacts will be mitigated through aesthetic treatments in the project design: “[T]o make the project more visually sensitive, weathering steel and other appurtenances (e.g. bridge appearance) will be used to better allow the project to blend into the existing visual Environment” (SFEIS, p. III-51).

The specific changes associated with the Refined Selected Alternative were shown at the July 2015 public workshop and posted to the WVDOH website at that time. No comments have been received on the visual effects since the changes were shared.

In light of the past assessment of visual effects, the public disclosure of the changes, and lack of comment on visual effects, the incremental changes to those visual effects with the Refined Selected Alternative are not considered substantial enough to warrant evaluation in an Environmental Impact Statement.

2.3.9 Floodplains

No new impact to floodplains is anticipated. As stated in the SFEIS, "All [Battlefield] Avoidance Alternatives will encroach on the Cheat River floodplain through the placement of bridge abutments or piers. All other floodplains (e.g., Haddix Run) will be completely bridged. Piers will be designed and placed so that downstream flood height would not increase beyond 1-foot, as required by floodplain regulations."

2.3.10 Vegetation and Wildlife

No new adverse effects to vegetation and wildlife are anticipated. Relatively small differences in impact to land cover are addressed in Section 2.3.3, and specific concerns related to federally listed species and species of concern to the Forest Service (RFSS) are addressed in Sections 2.3.11. Because of new mitigation measures in place, effects to vegetation and wildlife will likely be less than anticipated with the SFEIS analysis and do not warrant further analysis in a supplemental EIS.

These mitigation measures include seasonal tree-clearing for most of the Sections 2 and 3 project area (as detailed in the following section), close coordination with the Forest Service for acceptable placement of access roads and waste areas for management of forest resources, and, most notably, preservation in perpetuity of 700 acres of land elsewhere in Tucker County. In 2010, as part of mitigation for impacts in the portions of Corridor H that had not yet been constructed (between Kerens and Bismarck, WV), WVDOH purchased approximately 700 acres of land adjacent to Beaver Creek in Tucker County. Wetland areas within these lands are being "used" as credits toward mitigation for impacts to waters of the U.S., but the land has a wide array of habitats, including 110 acres of forest.

2.3.11 Threatened and Endangered Species, Migratory Birds, and Regional Forester's Sensitive Species

The potential for the Refined Selected Alternative to impact federally listed species that may occur in the project area and Regional Forester's Sensitive Species (RFSS) has been examined, as described in the following sections for each species or category of species.

2.3.11.1 Bat Species

A new mist-netting survey was conducted in the summer of 2016 because the 2012 survey would expire in May of 2017. The only listed bat species captured during the survey was the threatened northern long-eared bat (*Myotis septentrionalis*).

Since the time of the 2015 Re-evaluation, USFWS issued its Final Rule for the northern long-eared bat (Federal Register, January 14, 2016). According to the Final Rule, incidental take that will result from the Kerens to Parsons Project is not prohibited. This is because the following conditions are met with the proposed disturbance activities: (1) they will not occur within a 0.25-mile radius of known northern long-eared bat hibernacula, and (2) they will not include cutting or destroying known occupied maternity roost trees, or any other trees within a 150-foot radius from a known maternity tree. USFWS concurred with this determination in a letter dated April 7, 2016 (Appendix E). Because of this change, WVDOH retracted their conservation plan for this species (dated October 2014), which had been part of considerations of the 2015 Re-evaluation.

Although no Indiana bats were captured in the project area, portions of the project area lie within 5-mile buffer zones of known Indiana bat hibernacula. Therefore, WVDOH prepared an Indiana Bat Conservation Plan.³ The plan reinforces mitigation measures that were already part of the Kerens to Parsons Project, such as the commitment to

³ Michael Baker International. 2017. Indiana Bat (*Myotis sodalis*) Conservation Plan. Report for the Appalachian Corridor H Kerens to Parsons Project. Dated January, 2017.

implementing a strong erosion and sediment control plan, but also adds the following commitments more specific to protection of bat habitat:

- Within the 5-mile Indiana bat buffer zones, all trees that must be cleared for the project and are greater than or equal to 5" diameter at breast height must be cut between November 15 and March 31.
- The loss of potential primary roost trees within the 5-mile Indiana bat buffer zones will be compensated by replacement with bat boxes at 1:1 ratio, and those boxes will be monitored for 2 years after installation.
- WVDOH is preserving 700 acres of land in Tucker County, including 110 acres of forest, as compensation for potential secondary roost trees impacted within the 5-mile Indiana bat buffer zones.

In correspondence signed January 31, 2017 and November 1, 2017, USFWS concurred that the Conservation Plan provides measures that will reduce the likelihood of adverse effect to the species (Appendix E).

2.3.11.2 Plant Species

Since the 2015 Re-evaluation, plant surveys have been conducted for the Refined Selected Alternative Sections 2 and 3 throughout a 1,000-foot wide corridor surrounding the proposed centerline.⁴ Surveys took place between May 3rd and June 28th of 2016. Within Section 2, a population of the threatened small whorled pogonia (*Isotria medeoloides*) was found. Within Section 3, a population of the endangered running buffalo clover (*Trifolium stoloniferum*) was found. Both these populations overlapped the proposed cut/fill limits of the Refined Selected Alternative. Immediately following these discoveries, WVDOH developed shift alternatives to avoid the populations, and conducted shadow studies as part of the selection of shift locations. The selected shift locations were within the plant survey study area.

For the small-whorled pogonia, WVDOH reviewed a list of mitigation measures that USFWS had provided during coordination for the Kerens to Parsons Project Section 1. With the shift incorporated to the alignment and commitment to other mitigation measures, WVDOH determined the project is not likely to adversely affect the species. USFWS concurred with this finding in a letter dated November 8, 2016 (Appendix E).

For the running buffalo clover, WVDOH also determined that the project is not likely to adversely affect the species with incorporation of a shift. USFWS concurred with this finding in a letter dated August 1, 2016 (Appendix E).

2.3.11.3 Migratory Birds

The Migratory Bird Treaty Act (16 U.S.C. 703-712) (MBTA) prohibits the take of any migratory bird, part, nest, egg, or product. Take, as defined in the MBTA, includes by any means or in any manner any attempt at hunting, pursuing, wounding, killing, possessing, or transporting.

In March 2017, WVDOH received guidance from the USFWS, WV Field Office for compliance with the MBTA, and WVDOH engaged the agency in additional consultation on this topic for the Kerens to Parsons Project. To avoid and minimize impacts to migratory birds in and around the project, WVDOH committed to tree-clearing restrictions in addition to the time restriction described in Section 2.3.11.1, as follows:

- Clearing within all of Section 2 only from November 15 through March 31.

⁴ Pennsylvania Soil & Rock, Inc.. 2016. Botanical Survey for U.S. Fish & Wildlife Service Threatened and Endangered Plant Species, Proposed Sections 2 and 3 of Corridor H Highway Project, West Virginia Department of Transportation, Division of Highways. Dated September 14, 2016.

- Clearing within Section 3 (Station 706+00 to Station 860+00) as much as practicable between September 1 and March 31.

In a letter dated April 13, 2017, USFWS concurred that no additional consultation was required (Appendix E).

2.3.11.4 Regional Forester's Sensitive Species

In accordance with the ESA and the Forest Service's Standards and Guidelines, the Forest Service is required to conduct Biological Evaluations for impacts that may occur from their transfer of National Forest lands. The 2015 Re-evaluation included Biological Evaluations for animal species and plant species for all of the Kerens to Parsons Project. Since that time, changes to the Refined Selected Alternative in Sections 2 and 3 have warranted reconsideration for the potential impacts to plant species. WVDOH had plant surveys conducted for the Refined Selected Alternative Sections 2 and 3 throughout a 1,000-foot wide corridor surrounding the proposed centerline in the spring of 2015.⁵ WVDOH shared results of the surveys for MNF properties (prior to completion of the full report), and the Forest Service issued a revised Biological Evaluation in June of 2016 (Appendix F). For all species, their determinations remained either "no impacts" or "may impact individuals but is not likely to cause a trend toward federal listing or loss of viability." WVDOH will continue to coordinate with the Forest Service for their assessment of impacts to RTE and RFSS as changes occur to the Refined Selected Alternative in the future or changes are made to official listings of RTE and RFSS.

2.3.12 Wetlands

2.3.12.1 Impacts

A comparison of total wetland impacts is presented in Table 2. Using wetland boundaries determined from 2015 and 2017 field delineations applied to both alternatives, results indicate that wetland impacts have increased by nearly six acres. This net increase is almost entirely due to the increase in wetland impact in the vicinity of WV 72. That design change is detailed in Section 2.1.2. In summary, that area required an expansion of the interchange and balancing of earthwork. The design for Sections 2 and 3 as presented in the 2015 Re-evaluation did not include balancing of earthwork.

Table 2 includes the amount of impact for the Selected Alternative as presented in the 2002 SFEIS as well as amounts calculated using up-to-date data sources (0 acre). The 2015 Re-evaluation includes a detailed discussion of why more recent calculations produced an increase in impacts for the same design.

⁵ Pennsylvania Soil & Rock, Inc.. 2016. Botanical Survey for U.S. Fish & Wildlife Service Threatened and Endangered Plant Species, Proposed Sections 2 and 3 of Corridor H Highway Project, West Virginia Department of Transportation, Division of Highways. Dated September 14, 2016.

Table 2: Comparison of Wetland Impacts in Sections 2 and 3

Alternative Analysis	Wetland Area (acres)*
Selected Alternative As Presented in 2002 SFEIS	0
Selected Alternative Calculated with Updated Field Delineations	1.10 acres
Refined Selected Alternative Calculated with Updated Field Delineations	7.08 acres
<i>Difference Between Selected and Refined Selected Alternatives with Updated Field Delineations</i>	<i>+5.98**</i>

Source: 2015 and 2017 field delineations, conducted by Skelly & Loy Inc. and Pennsylvania Soil and Rock, Inc.

* All impacted wetlands are classified as palustrine emergent (PEM) wetlands.

**The Selected Alternative design did not include earthwork balancing or detailed design of the WV 72 interchange, which is the area where most of this increase in impact occurs.

2.3.12.2 Mitigation

Impacts to wetlands are being mitigated using available preservation credits from implementation of the Cheat River Watershed Wetland Mitigation and Preservation Plan. This Plan, dated August 2010, was accepted by USACE in conjunction with the Davis to Bismarck Project 404 Permit Modification Package. Prior to applying debits from the Kerens to Parsons Project impacts, WVDOH has 74.75 acres of preservation credit available to apply to Corridor H wetland impact mitigation. WVDOH has committed up to 3.56 acres of the 74.75 to mitigation in Section 1. The remaining 71.19 acres of preservation will mitigate all of the 0.32 acre of PEM in Section 2 and 6.76 acres of the Section 3 (using preservation ratio of 10:1 for PEM wetlands) leaving 0.44 acres of preservation credit to be used for future Corridor H projects. Proposed mitigation is currently pending approval, as part of the CWA 404 Permit Modification request for Sections 2 and 3. As with the Selected Alternative, USACE approval will be required prior to construction.

The changes to wetland impacts do not warrant analysis in a supplemental EIS.

2.3.13 Watersheds and Streams

2.3.13.1 Impacts

A comparison of total stream impacts is presented in Table 3. Data from field surveys conducted in 2015 have been applied to both the previous and current Refined Selected Alternative, and results indicate that stream impacts have increased by approximately 10,402 feet with the changes to the alternative. This net increase is almost entirely due to the following changes:

- The expansion of the WV 72 interchange along with earthwork balancing in that area of the alignment (approximately 7,400 feet of additional stream impact); and
- The shift to avoid an endangered species population (see Section 2.3.11.2) along with earthwork balancing in the region of Goodwin Run and Sugarcamp Run (approximately 2,100 feet of additional stream impact).

Earthwork balancing was not included in the Sections 2 and 3 designs analyzed for the 2002 SFEIS or for the 2015 Re-evaluation. Additional explanation for recent changes incorporated to the Refined Selected Alternative are presented in Section 2.1.2.

Table 3 includes the amount of impact for the Selected Alternative Sections 2 and 3 as presented in the 2002 SFEIS (250 feet). Reasons for differences between the 2002 value and the updated value are discussed in the 2015 Re-evaluation. In summary, the mapping produced from the 2015 field surveys are more refined than the U.S. Geological Survey (USGS) dataset used in 2002, and it includes ephemeral streams, which were not given protection under Clean Water Act regulations in 2002.

Table 3 also includes the totals as presented in the 2015 Re-evaluation, which was the same for the Selected Alternative as for the Refined Selected Alternative because detailed engineering and fieldwork had not yet been completed for Sections 2 and 3. That total (18,440 feet) was based on the best available data available without field delineations: the Local Resolution-National Hydrography Dataset (LR-NHD) produced by the WV Geographic Information System Technical Center (WVGIS TC) (2010).

Table 3: Comparison of Stream Impacts in Sections 2 and 3

Sections 2 and 3 Alignment	Perennial and Intermittent Streams (feet)	Ephemeral Streams (feet)	Total Impact (feet)
Selected Alternative			
As Presented in 2002 SFEIS	250	Not included	250
As Presented in 2015 Re-evaluation*	18,440		18,440
Calculated with Updated Field Delineations**	14,103	7,439	21,542
Refined Selected Alternative			
As Presented in 2015 Re-evaluation*	18,440		18,440
Calculated with Updated Field Delineations	23,457	8,487	31,944
<i>Difference Between Selected and Refined Selected Alternatives with Updated Field Delineations</i>	<i>+9,354</i>	<i>+1,048</i>	<i>+10,402</i>

Source: 2015 and 2017 field delineations, conducted by Skelly & Loy Inc.

* The 2015 Re-evaluation used the LR-NHD to calculate impacts for Sections 2 and 3, and this source does not separate the streams by classification (WVGIS TC, 2010). Sections 2 and 3 at the time of the 2015 Re-evaluation did not include refined design elements such as shifts to avoid protected species and earthwork balancing, as described in Section 2.1.2.

** 171 feet of this total was calculated using the LR-NHD because the old study area was not completely within the Refined Selected Alternative study area.

2.3.13.2 Tier 3 Stream Impact

One specific area of increase in stream impact is within the Sugarcamp Run watershed. The Selected Alternative included a 590-foot bridge at this location. Because of the special conditions for construction within the MNF, WVDOH developed additional engineering to account for all fill material within the MNF and reduce the overall footprint of the road within the MNF. This led to the elimination of this bridge and the design of off-site fill areas. Keeping the bridge was determined not to be practicable.

Placing a pipe and fill at this location instead of a bridge adds stream impact; however, it is unknown how much impact may have been required for placement of the excess overburden with the Selected Alternative design. This adjustment to the alternative was shown during the 2015 public outreach effort.

Sugarcamp Run has portions designated by the WVDEP as a Tier 3 stream. The Refined Selected Alternative will impact approximately 2,848 feet of stream within the Sugarcamp Run watershed (mainstem and tributaries), with approximately 834 feet of that total within the mainstem.

As part of securing the required Clean Water Act Section 402 permit, also known as the National Pollutant Discharge and Elimination System (NPDES) Permit, Tier 3 streams in the project area will receive antidegradation review by the WVDEP. The SWPPPs for the Kerens to Parsons Project will need to address Tier 3 streams as part of their NPDES permit for construction, and this will help ensure minimization of impacts.

2.3.13.3 Mitigation Plan and Clean Water Act Section 404 Individual Permit

Since the 2015 Re-evaluation and throughout final design, WVDOH has continued and will continue to avoid and minimize impacts where feasible and practicable. For the Refined Selected Alternative, at times stream impacts have increased while avoidance and minimization of impacts to other sensitive resources have been a priority given the context. For example, where the alignment was shifted to avoid a known population of the federally listed endangered RBC, stream impacts increased by 400 feet (see Section 2.1.2.2). However, WVDOH was able to reduce impacts to streams in the area of the Goodwin Run stream crossing. For that design refinement, WVDOH re-examined the location of waste material located adjacent to but outside the mainline cut/fill limits in the Goodwin Run watershed. Analysis showed that impacts to streams as well as forest acreage could be reduced by moving the fill to be within the cut/fill limits and making the bridge shorter. While shortening the bridge increases stream impact in the bridge abutment areas, WVDOH analysis showed that the impacts would have been approximately 780 feet more with the separate waste area.

Additionally, best management practices (BMPs) during construction will help avoid impacts to streams. WVDOH will require the Design-Build Team to develop and implement the following plans which must be approved by WVDOH and by the Forest Service for areas owned by the agency within the MNF:

- an acid materials handling plan,
- an Erosion and Sediment Control Plan, and
- a Spill, Prevention, Control, and Countermeasure Plan.

WVDOH will also be requiring that sediment control basins be placed outside of known wetland areas.

As stated in the SFEIS, "West Virginia Division of Highways (WVDOH) will continue to coordinate with the USCOE [USACE] and state environmental regulatory agencies regarding potential stream and wetland encroachments that may be identified during the final design process," (p. V-7). In 1996, a Clean Water Act Section 404 Individual Permit was issued for the entire Corridor H Project (approximately 100 miles), and that Permit was extended in 2007 through

2017. Outside the Kerens to Parsons segment, modifications to the Corridor H Section 404 Permit have been approved for segments of the highway that have proceeded to construction.

A modification request for the Kerens to Parsons Project, Sections 2 and 3, which has undergone detailed design and field surveys, is being prepared for submittal to the USACE. That modification request includes the following plan for mitigating impacts in Sections 2 and 3, which total 31,944 feet.

Stream impacts from the Kerens to Parsons Project are being evaluated and mitigated following the guidance of the West Virginia Stream and Wetland Valuation Metric (SWVM 2.1, USACE 2015). The SWVM is a means of identifying stream impairments and improving streams as needed to provide functional lift. In the 1996 FEIS Mitigation Plan and 2003 AROD, WVDOH and FHWA committed to implementing a stream Habitat Improvement program. However, the SWVM provides a more quantifiable habitat improvement for the stream and surroundings than the methods in the 2003 AROD Mitigation Plan. Therefore, a new plan has been formulated.

WVDOH will purchase credits from available mitigation banks and then from the In Lieu Fee program, which is administered by the West Virginia Department of Environmental Protection (WVDEP). In lieu fee costs are estimated to be \$23 million.

The proposed Mitigation Plan will result in habitat improvements to the streams in a more quantified and scientifically based way because of implementation of the SWVM since the 2003 AROD.

2.3.13.4 Conclusions

Stream impacts have been an important consideration from the start of the Corridor H Project. As evidenced in the extensive mitigation planning for stream impacts, NEPA analyses for the Corridor H project have acknowledged significant impacts to stream resources would occur. Stream impacts associated with the Selected Alternative for the Kerens to Parsons Project were reported as being 3,570 feet; however, that figure would have been updated after detailed design, inclusion of waste areas, and employing updated hydrography mapping. With this understanding, and in light of the extensive coordination and addition of mitigation measures that have occurred since the 2003 AROD, FHWA has determined that the change in impacts does not rise to a level of significance that warrants review in a supplemental EIS.

2.3.14 Wild and Scenic Rivers

This subject was adequately addressed for the entire alignment in the 2015 Re-evaluation (WVDOH, 2015). Additional analysis of impact to Wild and Scenic Rivers is not warranted.

2.3.15 Groundwater Resources

Changes to the project are not anticipated to have any change in effect on these resources.

2.3.16 Public Water Supply

Changes to the project are not anticipated to have any change in effect on these resources.

2.3.17 Geology, Mines & Minerals

There are two updates to the assessment of potential impact associated with geology, mines, and minerals, and both are related to minimizing adverse effects from the project: study of acid drainage potential with the project, and the incorporation of rock fall catchment areas.

Acid-base accounting (ABA) is a standard method used on highway construction projects where there is concern that disturbance of the soil and underlying strata as the result of construction could produce acid drainage. ABA analyses were conducted on core boring samples throughout the proposed cut/fill of the Refined Selected Alternative in Sections 2 and 3. Based on ABA analyses of 12 rock cores in Section 2 and 10 rock cores in Section 3, potential acid-producing rock layers have been identified in six cores.^{6, 7} Impact from acid drainage will be avoided and minimized with slight adjustments to cut/fill limits and implementation of a special handling plan. As stipulated in the environmental compliance tracking document (Appendix A), the construction contractor will be required to develop and implement an Acid Producing Materials Handling Plan that has been approved by WVDOH.

The Geotechnical studies conducted for Sections 2 and 3 recommended the following, "Due to rock slope failures during previous construction projects along Corridor H in close proximity of this location, rock slope stability designs should be closely analyzed to prevent dip-slip failures of the cut slopes. Rock slope stability analyses (kinematic analyses) shall be performed to support rock cut slope design, should the structural dip of the bedrock be determined adverse to slope. A minimum factor of safety of 1.3 shall be achieved."^{8, 9} As discussed in Section 2.1.2 for roadway safety considerations, incorporation of rock fall catchment areas has increased the project footprint. Resulting increases in impacts are balanced by the reduction in risk of injury to the public.

2.3.18 Hazardous Materials

On behalf of WVDOH, Skelly & Loy Inc. investigated the potential for impacts to occur from hazardous materials throughout the Refined Selected Alternative Sections 2 and 3. Investigations included field views during environmental surveys in 2015 and generation of Environmental Data Resources (EDR) Radius Report in January, 2016.

The report covered an approximately 1,000-foot wide by 8-mile long corridor surrounding the alignment. No state-mapped sites of concern were found within the Sections 2 and 3 study area. One pipeline was shown in the EDR Report, but no visual evidence was found during field views. Another pipeline was found to cross the alignment where the bridge over the Cheat River is proposed. As confirmed with Energy Corporation of America, the pipe is for an active gas line that feeds Parsons, WV. Additionally, high tension power lines cross the eastern part of the Refined Selected Alternative in Section 3.

Although the database reports found potentially hazardous sites, the study concluded the potential for hazardous waste concerns associated with the project is minimal. As stated in the SFEIS, if any potential hazardous waste sites are identified during the final design, an environmental site assessment would be performed prior to the acquisition of the property, and site investigations would follow WVDOH Guidelines for identifying and handling hazardous waste on highway projects.

⁶ Michael Baker International. 2016. Acid-Base Accounting Analyses Interpretations Core Borings KP2R- 4, 12, 17, 20, 32, 44, 58, 73, 88, 104 and WV 72-10, and WV 72-14. Corridor H, Kerens to Parsons, Section 2, Tucker County, West Virginia. Dated November 14, 2016.

⁷ Michael Baker International. 2016. Acid-Base Accounting Analyses Interpretations Core Borings KP3R-8, 12, 33, 36, 38, 49, 54, 57, 62, and 63. Corridor H, Kerens to Parsons, Section 3, Tucker County, West Virginia. Dated November 14, 2016.

⁸ Michael Baker International. 2016. Geotechnical Data Report. Corridor H, Kerens to Parsons, Section 2, Tucker County, West Virginia US 219 Connection to West Virginia 72 Interchange. Dated November 17, 2016.

⁹ Michael Baker International. 2016. Geotechnical Data Report. Corridor H, Kerens to Parsons Section 3, Tucker County, West Virginia. Dated November 14, 2016.

2.3.19 Cultural Resources

Section 106 coordination was completed for the Kerens to Parsons Project at the time of the SFEIS in 2002. The 2015 Re-evaluation (WVDOH, 2015) detailed the updates to archaeological and historic resource surveys for Section 1 of the Kerens to Parsons Project. Additional surveys have now been completed for the areas of potential effect (APEs) associated with the Refined Selected Alternative in Sections 2 and 3.

Archaeology: A Phase I archaeological investigation of the Sections 2 and 3 APE was conducted in the summer and fall of 2015, and a report was shared with the SHPO and Forest Service.¹⁰ In a letter dated February 2, 2016 (Appendix G), the SHPO concurred that 35 sites previously enumerated are not eligible for listing in the National Register of Historic Places (NRHP) and did not warrant further investigation and that eight sites should be avoided by construction if possible and investigated further if unavoidable. In a letter dated November 10, 2016, the Forest Service concurred for property within the MNF.

The RBC and SWP shift areas were incorporated since 2015. In the winter of 2017, a supplemental Phase I archaeological survey took place to address the shift areas and areas proposed for erosion control that were not previously surveyed. No new sites were found, and no further archaeological work was recommended. The SHPO and Forest Service concurred with the findings in letters dated July 12 and July 11, 2017, respectively.

In accordance with the agreement with the SHPO regarding sites that should be avoided, further study was required for three sites: the Long Family Cemetery, the Long Site, and the Knotts 1 Site. For the cemetery, WVDOH submitted a Cemetery Inventory Form, and, in a letter dated September 4, 2015, the SHPO concurred that the cemetery is not eligible for listing in the NRHP.

The Long Site lies in the floodplain of the Cheat River where both the Selected Alternative and Refined Selected Alternative designs have a bridge span. The Selected Alternative was not going to impact the site; however, because of the expansion of the APE in the area of the WV 72 interchange, the Refined Selected Alternative may not entirely avoid the site. Therefore, Phase II archaeological investigation was necessary for the multiple component Long Site. The report from the investigation concluded that both prehistoric and historic components of the Long Site are eligible for inclusion in the NRHP and that adverse effects to the site be mitigated through a Phase III data recovery investigation. The SHPO concurred with this conclusion in a letter dated October 18, 2016 (Appendix G). It is believed that this site can be avoided; however, if it is determined that avoidance is not possible, then Phase III data recovery investigation will be performed prior to any disturbance of the site.

The Knotts 1 site lies within an area that since 2015 has been proposed for stream modification with the Refined Selected Alternative. Therefore, as part of the supplemental Phase I archaeological survey that took place in the winter of 2017, the site was investigated further. As a result of the investigation, the boundary of the Knotts 1 site was refined, and it was determined that the proposed stream modification would not affect the site. The SHPO and Forest Service concurred with the survey findings in letters dated July 12 and July 11, 2017, respectively.

Historic Properties: For potential historic resources, APEs not addressed in past surveys were surveyed in June and July of 2015. For the RBC and SWP shift areas, which were incorporated since 2015, there were no structures 50 years or older to be surveyed. As detailed in an addendum report for Sections 2 and 3 of the Kerens to Parsons Project, none of the historic resources in the revised APEs for the project was recommended as eligible for listing in

¹⁰ Skelly & Loy Inc. 2015a. Phase I Archaeological Survey. Report for the Corridor H Project, Kerens to Parsons (Sections 2 and 3) US 219 Corridor to Mackeyville Tucker County, West Virginia. Morgantown, WV. Dated December 31, 2015

the NRHP.¹¹ In a letter dated September 4, 2015, the SHPO concurred, and the Forest Service concurred for property within the MNF in a letter dated August 24, 2015 (Appendix G).

This re-evaluation has determined that no new impacts to cultural resources warrant analysis in a supplemental EIS.

2.3.20 Air Quality

This subject was adequately addressed for the entire alignment in the 2015 Re-evaluation (WVDOH, 2015). Additional analysis of impact to air quality is not warranted.

2.3.21 Noise

A traffic noise analysis was undertaken to identify and evaluate the potential noise impacts resulting from the Refined Selected Alternative in Sections 2 and 3. The analysis was undertaken to account for the minor shifts and any new noise sensitive receptors (e.g., houses), and in order to address changes to State/Federal traffic noise guidelines, procedures, and modeling software that have occurred since the 2002 SFEIS analysis. The study complies with 23 CFR 772 and the WVDOH Noise Policy.

Results indicate that no residential receptors will experience noise levels that exceed the threshold of 66 dBA. Also, no residential receptors will experience an increase of more than a 15 dBA as compared to existing conditions. The low projected traffic volumes coupled with the distance, ground cover and undulating terrain between the facility and homes minimize the highway's footprint on the acoustical environment. Several trail crossings will experience zones where the sound increases more than 15 dBA; however, based on trail usage and the magnitude of the sound levels, impacts are not anticipated, and mitigation would not be reasonable.

2.3.22 Energy

This subject was adequately addressed for the entire alignment in the 2015 Re-evaluation (WVDOH, 2015). Additional analysis of impact to air quality is not warranted.

2.3.23 Construction Impacts

The 2002 SFEIS included disclosure of temporary impacts from construction activities. Additional analysis of impact from construction activities is not warranted.

2.3.24 Relationship of Local Short-Term Uses Versus Long-Term Productivity

Changes to the project have not affected considerations for short-term uses versus long-term productivity.

2.3.25 Irreversible & Irretrievable Commitments of Resources

Changes to the project have not affected considerations for irreversible and irretrievable commitments of resources.

2.3.26 Section 4(f) and Section 6(f)

Section 4(f) of the Department of Transportation Act of 1966 provides protections to significant publicly-owned public parks, recreation areas, wildlife and waterfowl refuges, and significant historic sites (49 USC Section 303, 23 CFR Part 774). Since the time of the 2002 SFEIS, FHWA has revised its Section 4(f) regulations and policies. Also, with the passage of time, new Section 4(f) resources may have developed in the project area. Consequently, WVDOH

¹¹ Skelly & Loy Inc. 2015b. Determination of Eligibility for Architectural Resources Addendum Report. Report for the Corridor H Project, Kerens to Parsons (Sections 2 and 3) US 219 Corridor to Mackeyville Tucker County, West Virginia. Morgantown, WV. Dated July 30, 2015.

and FHWA re-considered project effects to Section 4(f) resources in the 2015 Re-evaluation. One resource is re-considered with the present re-evaluation: the Allegheny Highlands Trail.

In the 2002 SFEIS evaluation, the Allegheny Highlands Trail was presented as a proposed rail-trail. Since that time, the trail has been constructed on WVDOT right of way. In 1997, the TCDA leased the trail property from the WVDOT; however, in 2002, the TCDA decided not to renew their lease. Even though WVDOT permits the use of the property for recreational activity, it is a *temporary* recreational use, as defined at 23 CFR 774.11(h), and is not afforded Section 4(f) protection. This assessment is detailed further in a Section 4(f) Applicability Analysis, prepared by WVDOH and agreed to by FHWA, as shown in Appendix H.

With regard to Section 6(f), the Refined Selected Alternative will not have an impact. The alternative will not affect land acquired using the Federal Land and Water Conservation Fund.

3.0 Re-evaluation Conclusion

The re-evaluation of the 2002 SFEIS/2003 ROD presented above was conducted consistently with FHWA regulations for a written re-evaluation. This document has presented the changes to the existing environment and the design of Sections 2 and 3 of the Kerens to Parsons Project and the changes to impacts as compared to the impacts presented in the previous re-evaluation.

As a final presentation of results, impacts discussed above for Sections 2 and 3 have been combined with those impacts reported in the most recent re-evaluation of Section 1, which was recently prepared by the Design-Build Team and signed by FHWA in July 2017. The combined impact totals for the Kerens to Parsons Project as a whole are presented in Table 4.

This analysis clearly indicates that while there have been changes to the Refined Selected Alternative and regulatory changes relative to certain resource categories analyzed in the NEPA documents, those changes did not result in new significant impacts as compared to those disclosed in the 2002 SFEIS/2003 ROD and its 2015 Re-evaluation. Therefore, additional evaluation in a supplemental EIS is not required for the Kerens to Parsons Project.

Table 4. Kerens to Parsons Project Sections 1, 2 and 3 – Comparison to Results Presented in 2015 Re-evaluation

Resource / Design Element	2015 Refined Selected Alternative Impacts ¹	2017 Refined Selected Alternative Impacts ²		
		Section 1 (2017 DBT)	Sections 2 and 3 (2017 Re-evaluation)	Total
Length (miles)	15.3	7.5	8.0	15.5
Construction Cost (million \$) ³	\$455	\$234	\$440	\$674
Excavation (million cubic yards)	24.2	12.6	18.4	31.0
Excess Excavation (million cubic yards)	1.9	4.2	0.36	4.56
Floodplain (acres)	0	0	0	0
Potential 4(f) Impacts	No	No	No	No
Footprint (acres) (including connectors, excluding area under bridges)	740.3	484 (60 of which is waste outside cutfill)	482.5 (6.3 of which is waste outside cutfill)	966.5
MNF (Public Lands) (acres)	341.9	287	156.1	443.1
MPA 3.0 (acres)	56.5	0	62.5	62.5
MPA 6.1 (acres)	285.4	287	93.6	380.6
Trail Realignments – total # (length in feet)	5 (3,261)	4 (2,579)	1 (400)	5 (2,979)
Forest Cover (acres)	700.9	462	438.5	900.5
Agricultural Cover (acres)	9.7	4	9.2	13.2
Grassland Cover (acres)	3.4	4	5.5	9.5
Developed, Open Space (acres)	26.3	14	29.3	43.3
Residential Buildings	22	5	12	17
Commercial Buildings	0	0	0	0
Community Facilities/Parks	0	0	0	0
# Bridges	13	5	5	10
Length of Bridges (feet)	12,840	4000	7,820	11,820
Wetlands (acres)	0.595	2.153	7.075	9.228
Streams (feet) (including ephemeral streams)	43,230	26,533	31,944	58,477

Table 4. Kerens to Parsons Project Sections 1, 2 and 3 – Comparison to Results Presented in 2015 Re-evaluation (continued)

Resource / Design Element	2015 Refined Selected Alternative Impacts ¹	2017 Refined Selected Alternative Impacts ²		Total
		Section 1 (2017 DBT)	Sections 2 and 3 (2017 Re-evaluation)	
Federally Listed Species	2 (SWP in Section 2 and RBC in Section 3)	0	0	0

Notes:

¹ The 2015 impacts are the same as those reported in the 2015 Re-evaluation, Table 2 (“Impact Summary”), which used the refined alignment available at the time for Section 1 and the 2003 Selected Alternative for Sections 2 and 3. At the time of the 2015 Re-evaluation, detailed surveys for resources had not yet been conducted on a refined alignment for Sections 2 and 3, most notably stream and wetland delineations and botanical surveys. For the streams, the best available dataset for Sections 2 and 3 in the absence of detailed delineations was the Local Resolution-National Hydrography Dataset (WV Geographic Information System Technical Center, 2010).

² The 2017 Refined Selected Alternative impacts combine results reported for Section 1 in a Re-evaluation prepared by the DBT for that Section (signed by FHWA in July 2017) and results reported for Sections 2 and 3 in this Re-evaluation. Both of these analyses reflect results of detailed stream and wetland delineations and updated botanical surveys (as well as other updated analyses).

³ Cost estimates for the 2017 Refined Selected Alternative reflect the values reported in the WVDOT’s January 11, 2017 Financial Plan.