State Project No. U354-14-8.69 Sec 00
Federal Project No. STP-0014 (111)E

WV 14, Mineral Wells to Pettyville

Wood County, West Virginia

ENVIRONMENTAL ASSESSMENT

April 23, 2014

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

State Project U354-14-8.69 Sec 00
Federal Project No. STP-0014 (111)E

WV 14, MINERAL WELLS TO PETTYVILLE
Wood County, West Virginia

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

April 25, 2014
DATE OF APPROVAL

FOR WEST VIRGINIA DIVISION OF HIGHWAYS

May 9, 2014
DATE OF APPROVAL

FOR FEDERAL HIGHWAY ADMINSTRATION

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This proposed project consists of the realignment and upgrade to a four-lane facility of a 1.38-mile section of WV 14 between Mineral Wells and Pettyville, West Virginia.

Comments on this Environmental Assessment are due by_____and should be sent to:

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CONTENTS

TABLES

FIGURES

APPENDICES

LIST OF ACRONYMS

AADT - annual average daily traffic

ADT – average annual traffic

ASTM - American Society for Testing and Materials

BMP - best management practice

CAA - Clean Air Act

CERCLA - Comprehensive Environmental Response Compensation and Liability Act

CFR - Code of Federal Regulations

CO - carbon monoxide

CO_2 - carbon dioxide

dBA - A-weighted equivalent sound level in decibels

DFIRM - digital Flood Insurance Rate Map

EA - Environmental Assessment

EDR - Environmental Data Services

EPA - Environmental Protection Agency

FEMA - Federal Emergency Management Agency

FHWA - Federal Highway Administration

FONSI - Finding Of No Significant Impact

GHG - Greenhouse Gas

GIS - Geographic Information System

HEI - Health Effects Institute

LUST – Leaking Underground Storage Tank

MOVTA - Mid-Ohio Valley Transit Authority

MPO - Metropolitan Planning Organization

MSAT - Mobile Source Air Toxic

NAAQS - National Ambient Air Quality Standards

NEPA - National Environmental Policy Act

NRHP - National Register of Historic Places

NPL - National Priority List

O_3 - ozone

PM - particulate matter

RCRA - Resource Conservation and Recovery Act

SHPO - State Historic Preservation Office

USDOT - U.S. Department of Transportation

USFWS - U.S. Fish and Wildlife Service

VMT - Vehicle Miles Traveled

vpd – vehicles per day

WVDEP - West Virginia Department of Environmental Protection

WVDNR - West Virginia Division of Natural Resources

WVDOH - West Virginia Division of Highways

WVDOT - West Virginia Department of Transportation

WWW-IPC - Wood-Washington-Wirt Interstate Planning Commission

EXECUTIVE SUMMARY

Introduction

The West Virginia Department of Transportation, Division of Highways (WVDOH), in cooperation with the Federal Highway Administration (FHWA), proposes to upgrade an approximately 1.1-mile section of West Virginia State Route 14 (WV 14) in Wood County from Mineral Wells to Pettyville, a community within the urban area boundary of Parkersburg, WV (Exhibits 1 and 2). The proposed action is included in the approved *FY 2012-2015 Biennial Transportation Improvement Program* (TIP) and the *FINAL Draft 2014-2017 TIP* for the region as State Project U354-14-8.69 Sec 00 and Federal Project STP-0014 113(D) (WWW-IPC, 2011 and 2013a).

The Project Area lies between an already upgraded section of WV 14 just north of the Interstate 77 (I-77) interchange in Mineral Wells and a growing commercial district in Pettyville. Congestion along WV 14 through the Project Area is projected to increase, particularly with use of the roadway by commuters to the City of Parkersburg. With only two lanes for the majority of its length, the existing roadway lacks capacity to handle the region's growth. The existing roadway also has a high number of sharp curves and access points (i.e., driveways). Additionally, improvements in this part of the greater Parkersburg area are goals of the *Interstate Planning Commission Transportation Plan Update: 2035* produced by the Wood-Washington-Wirt Interstate Planning Commission (WWW-IPC). The Plan highlights two general needs that relate to WV 14 in the Project Area: 1) the need for improved access to I-77 in the region, and 2) the need for handling and facilitating anticipated growth near the commercial development along WV 14 (WWW-IPC, 2013b).

In summary, WV 14 between Mineral Wells and Pettyville has the following needs:

1) Improved traffic volume capacity,
2) Safer roadway geometry (i.e., curves and sight-distances) that can allow improved traffic flow,
3) Control of roadway access for travelers between I-77 and Pettyville, and
4) Support of local planning goals for growth.

Based on these transportation needs, WVDOH has developed the following project purpose statement:

> *The purpose of the WV 14 Mineral Wells to Pettyville project is to increase capacity, reduce geometric constraints, control access along WV 14 for travelers between Mineral Wells and Pettyville, and facilitate growth in accordance with regional land use planning.*

As detailed in this Environmental Assessment (EA), careful consideration of potential environmental impacts has led to selection of a Preferred Alternative that avoids, minimizes and mitigates for environmental impacts, all of which will fall below a level of significance.

Alternatives

To meet requirements of this project, four (4) alternatives were developed and analyzed by WVDOH. All alternatives are shown in Exhibit 3 and summarized in Table ES-1. Each of the alternatives has the same typical sections of four-lanes in the south and three lanes in the north to match the existing WV 14 in those areas. Typical sections are shown in Exhibit 4.

Two principle criteria were used to screen alternatives: ability to fulfill the purpose of the project and the number of relocations required of businesses, residences, and churches. Impacts to other natural, cultural, and physical environmental resources were not prioritized in the screening process because of the small scale of impacts and the lack of particularly sensitive resources.

The initial public and agency coordination and inventory of resources within and adjacent to the Project Area did not reveal particularly sensitive or locally important resources to be prioritized in the screening process other than the relocations. None of the alternatives impact listed historic resources, archaeological sites requiring further study, federally protected species and any designated critical habitat, parks or wildlife refuges. The alternatives differ in their impacts to wetland and farmland soil resources (Table 2).

All alternatives fulfill the purpose and need; however, Alternatives 1, 2, and 3 fulfill the economic growth component of the purpose to a lesser degree than does Alternative 4, which provides access to undeveloped acreage that could offer economic expansion opportunities in the future. Alternative 4 also requires far less disposal of waste and is estimated to cost substantially less than any of the other alternatives (Table ES-1).

Alternative 4, which is located away from existing infrastructure, impacts the greatest amount of wetland as compared to the other alternatives. Wetland impacts are a meaningful criterion in the analysis; however, these impacts are considered manageable because of the proximity of large expanses of undeveloped land and mitigation measures.

A more critical criterion in this area was considered to be impacts to residents. Alternatives 1, 2, and 3 consist of upgrades along the existing WV 14 alignment, and therefore have the greatest disruption to the continuity of the neighborhoods through the Project Area and have substantially greater numbers of displacements. Additionally, construction of Alternative 3 would result in a disproportionate impact to an Environmental Justice population. Alternative 4 is located on new alignment, across mostly undeveloped land, and has the fewest residential, business or church relocations. Alternative 4 displaces 13 residences, four (4) businesses, and no (0) churches. The next smallest amount of displacements occurs with Alternative 2, which has 29 residential relocations, five (5) business relocations, and one (1) church relocation. In consideration for all these factors and the balance of impacts assessed in the EA, WVDOH and FHWA have chosen Alternative 4 as the Preferred Alternative to carry forward for more detailed analysis.

Under the No-Build Alternative, the proposed project is not implemented. This alternative includes all currently adopted and planned transportation improvements in the Project Area.

WV 14 undergoes routine maintenance, but is not substantially altered. Although the No-Build Alternative does not meet the project's purpose and need, it is carried forward for analysis as a basis of comparison for the Preferred Alternative.

Table ES-1: Alternatives Comparison

	No Build Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4 (Preferred)
Length (miles)	Not Applicable	1.16 (6,100 feet)	1.36 (7,200 feet)	1.33 (7,000 feet)	1.38 (7,300 feet)
Net Waste[1] (cubic yards)	0	260,000	190,000	140,000	73,300
Improves Roadway Capacity and Geometry	No	Yes	Yes	Yes	Yes
Controls Access	No	Yes	Yes	Yes	Yes
Improves Access to Economic Centers	No	Yes	Yes	Yes	Yes
Fulfills Purpose and Need	No	Yes	Yes	Yes	Yes
Residential Relocations	0	38	29	36, plus a 24-unit apartment complex	13
Commercial Relocations	0	7	5	7	4
Church Relocations	0	1	1	1	0
Environmental Justice Disproportionate Impact	No	No	No	Yes	No
Stream Crossings	0	2 (203 feet)	3 (513 feet)	2 (276 feet)	3 (413 feet)
Estimated Wetland Impacts (number and acres)[2]	0	2 (0.02 acre)	4 (0.41 acre)	1 (0.02 acre)	4 (0.99 acre)
Farmland Soils (Prime & Local/ Statewide Important)	0	2 acres	11 acres	5 acres	21 acres

	No Build Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4 (Preferred)
Rare, Threatened, and Endangered Species	No	No	No	No	No
Cultural Resources	No	No	No	No	No
Hazardous Materials Site(s) in new right-of-way	Not Applicable	Yes	None Known	Yes	None Known
Air Quality	No	No	No	No	No
Estimated Cost[3]	0	$16.883 million	$14.426 million	$18.801 million	$9.601 million

[1] Net Waste equals the required amount of material to be cut minus the amount of material needed for fill. The remainder represents the amount of material that will have to be hauled and disposed outside the right-of-way.

[2] No jurisdictional determination has been conducted. Wetland acreage is based on preliminary assessment by wetland scientists.

[3] Estimate includes costs of construction, utilities, and right-of-way

Summary of Preferred Alternative

The Preferred Alternative (Alternative 4) fulfills the project's purpose and need. It improves roadway capacity and geometry by offering a four-lane facility without sharp curves; it provides a controlled access facility; and it improves access to economic centers by providing the improved facility from the I-77 interchange to the Pettyville commercial center, and by providing access to undeveloped acreage that could serve to offer economic expansion needs in the future.

The Preferred Alternative will construct approximately 1.38 miles of new roadway to the west of the existing roadway and the residential community surrounding it. The new roadway will be considered a divided rural arterial with a design speed of 55 mph. The typical section will match that of the first mile of WV 14 to the south of the Project Area: four twelve-foot travel lanes with a six-foot usable shoulder on the inside and a twelve-foot usable shoulder on the outside. The north and south bound lanes will be separated by a 46-foot grassed median with 6:1 slopes toward the centerline. Where the roadway transitions to a three-lane facility near its northern terminus in Pettyville, it will have three twelve-foot lanes, with the center lane designated for turning and two twelve-foot shoulders to either side. Typical sections are presented in Exhibit 4.

Direct access will be maintained from the new WV 14 to the unnamed side street south of the WalMart, Lost Pavement Road, Oakdale Avenue, and Sam's Creek Road (Exhibit 3). The

corridor does not cross other roads that will require re-routing. During construction, there will be temporary traffic disruption.

The Preferred Alternative displaces a total of 13 residences, four (4) businesses, and no (0) churches. The Preferred Alternative avoids direct impacts to neighborhoods along WV 14, but will impact the Oakdale neighborhood. It will change the land use to the west of existing WV 14. The total right-of-way for the new roadway is 27.2 acres, most of which will convert grassland/pastureland/agricultural land to transportation land use. The project will cause noise impact at eight receptors (seven residences and one picnic area) and will have minimal air quality effects. The viewsheds for some neighborhoods and travelers will experience an effect as well. The project will not cause disproportionately high and adverse effects on any minority or low-income populations.

The right-of-way crosses approximately one acre of palustrine emergent wetland and 413 feet of perennial stream. Total stream crossings include 330 feet of Jackson Run and 83 feet of the Unnamed Tributary to Little Kanawha River. The streams will be culverted. No Federally listed threatened or endangered species will be impacted by the project.

Few known hazardous sites are in close proximity to the right-of-way, and there is a low likelihood of encountering hazardous materials with the project. In addition, the Preferred Alternative does not impact any historic property or known archaeological site.

The economic environment in general is expected to benefit from the project. In the short-term, construction will provide jobs and indirect economic activity from the increase in workers in the area. In the long-term, there will be improved transportation to and from I-77 and opportunity provided by access to developable land. Reasonably foreseeable future development has been included in the analysis of cumulative effects in the EA (Section 3.0). The future land use in the area is not within the control of WVDOH or FHWA. However, it is reasonably foreseeable that more development will occur to the west of WV 14 because of the project purpose and stated vision by local planners. The estimated cost of the Preferred Alternative is $9.602 million (Table ES-1).

Coordination

In order to receive feedback and professional assessment of the project and its impacts as well as to fulfill regulatory requirements, WVDOH has coordinated, and will continue to coordinate, with the public and resource agencies for the proposed action.

An informational workshop public meeting was held on August 13, 2012 at the Mineral Wells Elementary School in order to present all of the alternatives under consideration, and to receive feedback. Comments were received at the meeting and through postal mail, email and online submissions throughout a comment period, which ended September 13, 2012. Another workshop will take place during the comment period for the EA in 2014.

In addition to the public workshops, WVDOH has maintained a public project website for disseminating information about the project and announcing meetings. This website is located at:

http://www.transportation.wv.gov/highways/engineering/comment/wv14mwp/Pages/default.aspx. Workshop hand-outs have been available for download and contact information for submitting comments has been posted on this website.

EXHIBITS

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Vienna
North Hills
Washington County, OH
Ohio River
Wood County
Belpre
Blennerhassett Island
Parkersburg
Blennerhassett
Washington
Lubeck
South Parkersburg
Cedar Grove
Murphytown
Athey Barn
Wakefield
Pettyville
Pleasant View
Project Area
Davisville
Little Kanawha River
Mineral Wells
Pleasant Hill
Chesterville
Wadeville
Fountain Spring
Slate
Saulsbury
Beulah Hill
Wood County
Wirt County
Rockport
2
14
50
47
77
46
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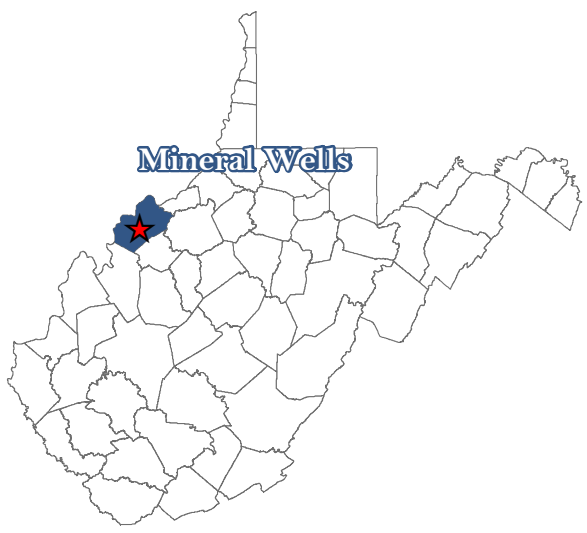
WV 14, Mineral Wells to Pettyville Environmental Assessment

EXHIBIT 1: PROJECT LOCATION

- Blennerhassett
- Lubeck
- Mineral Wells
- Parkersburg
- Washington
- North Hills
- Vienna
- Belpre

0 0.5 1 2 Miles



April 12, 2014

Lowes
Wal-Mart
Begin Project
Athey Barn
End Project
Coldwater Creek
Parkersburg Business Park Phase 2
Parkersburg Business Park
Pettyville
Mineral Wells
Joy Street
Thorn Street
Petal Street
Viscose-Pettyville
Little Kanawha River
Kanawha River Road
Pine Avenue
Forest Avenue
Dolphine Street
Blair Avenue
Sharon Street
Oakdale Avenue
Pettyville Lost Pavement
Dealy Road
Black Road
Badgley Fork
Mineral Wells
14
77

WV 14, Mineral Wells to Pettyville Environmental Assessment

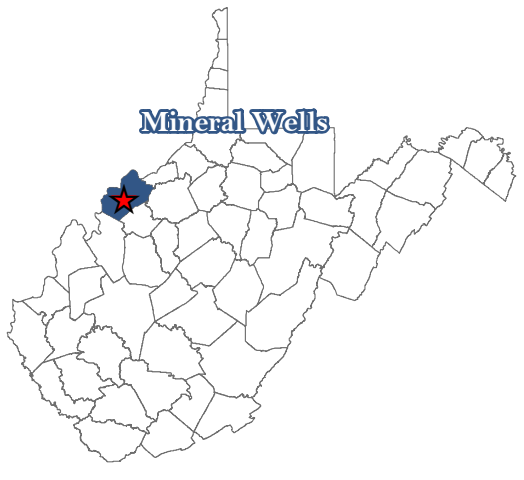
EXHIBIT 2: PROJECT AREA

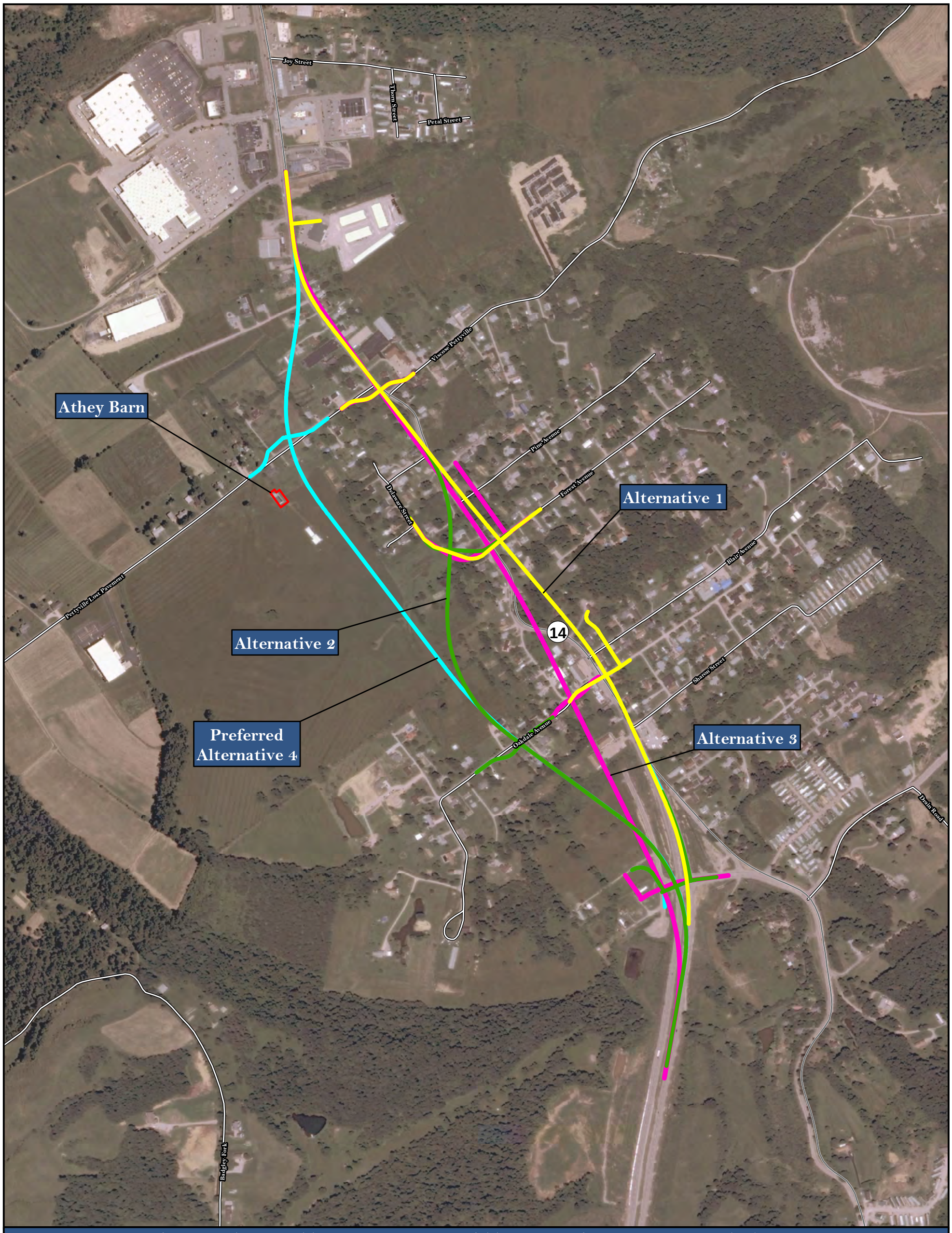
0 380 760 1,520 Feet

Athey Barn

Wood County Roads

April 12, 2014



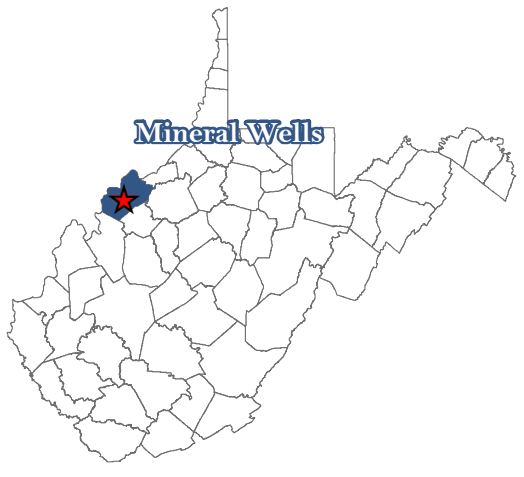


WV 14, Mineral Wells to Pettyville Environmental Assessment

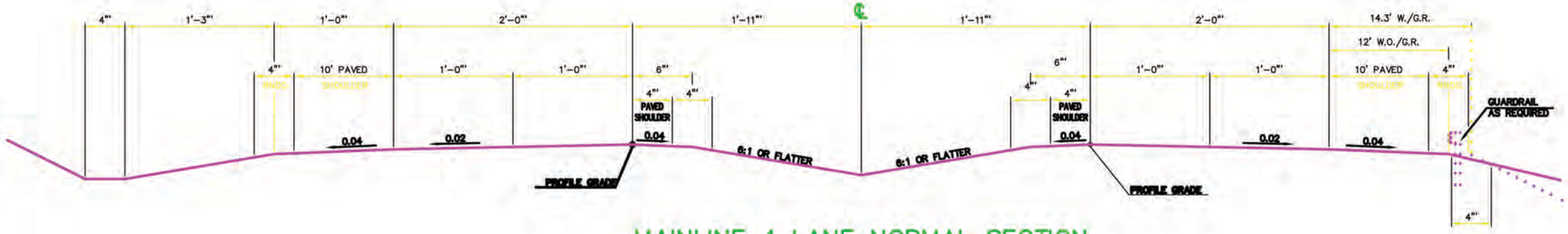
EXHIBIT 3: BUILD ALTERNATIVES

- Athey Barn
- Alternative 1
- Alternative 2
- Alternative 3
- Preferred Alternative 4

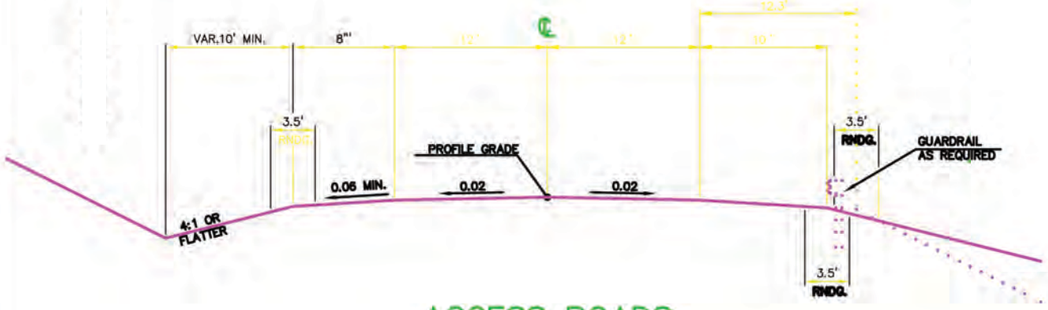
0 225 450 900 Feet



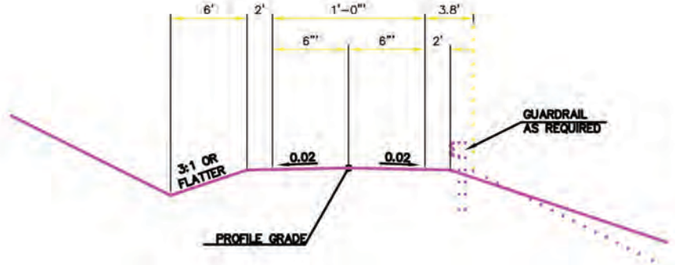
April 12, 2014



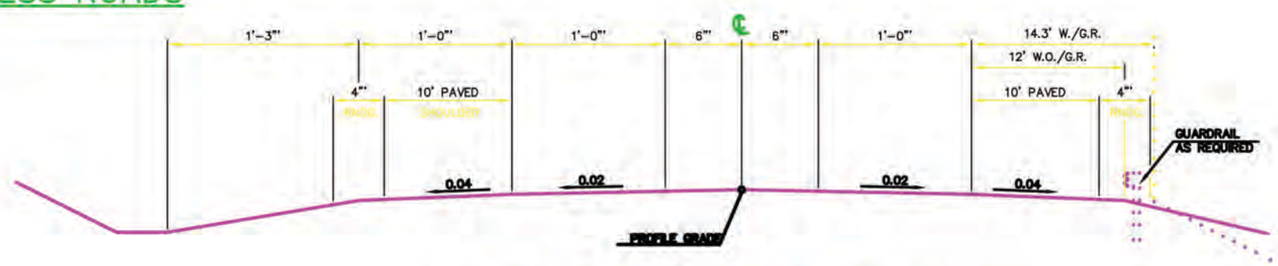
MAINLINE 4 LANE NORMAL SECTION



ACCESS ROADS



DRIVEWAY ACCESS



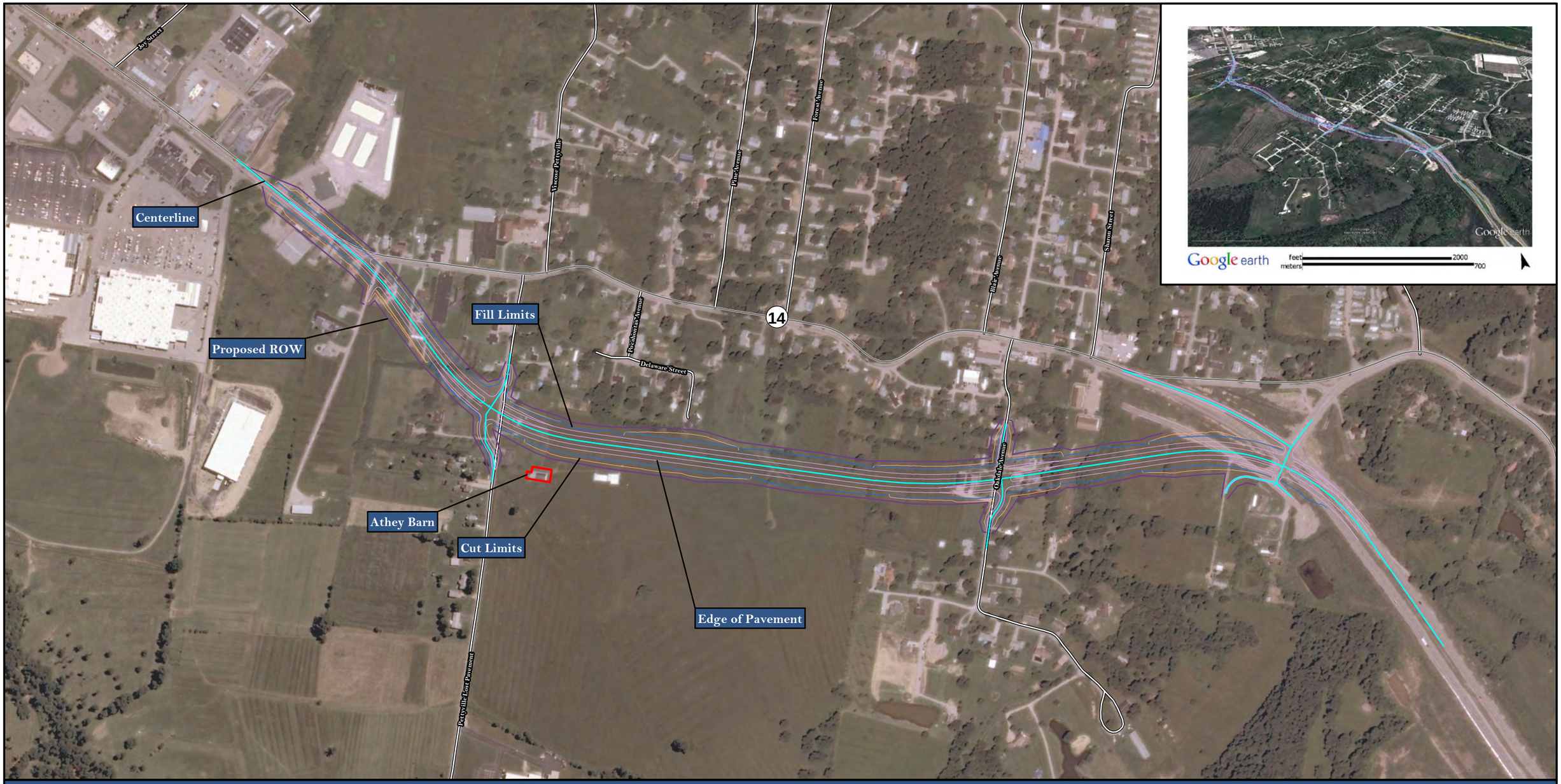
MAINLINE 3 LANE NORMAL SECTION

NOTE: SUPERELEVATION NOT SHOWN – 6% MAX.

WV 14, Mineral Wells to Pettyville Environmental Assessment

EXHIBIT 4: TYPICAL SECTIONS

April 12, 2014



WV 14, Mineral Wells to Pettyville Environmental Assessment

EXHIBIT 5: PREFERRED ALTERNATIVE 4

0 50100 200 300 400 500 Feet

- Cut Limits
- Ditch Backslope
- Ditch Bottom
- Ditch Foreslope
- Edge of Pavement
- Fill Limits
- Proposed Right-of-Way
- Centerline
- Athey Barn

April 12, 2014

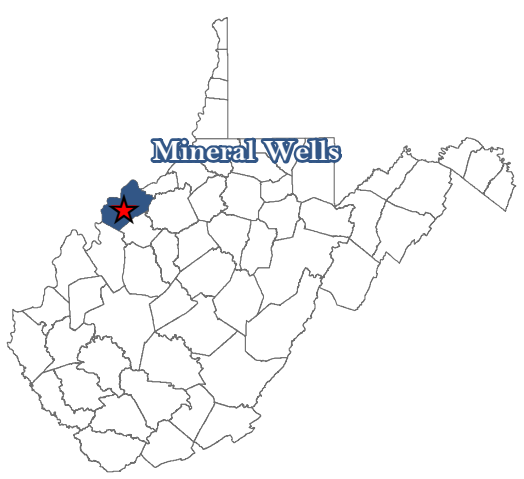
Epworth United Methodist Church
Parkersburg Fire Department
Fairplains Elementary School
Franklin Elementary Center
Faith Tabernacle
Wood County Vo-Tech Center
Grace Brethren Church
Broadway Baptist Church
Gihon Church
Broadway Gospel Mission
West Virginia Div. of Forestry
Wood County Field Office
Gihon Elementary School
South Parkersburg United Methodist Church
Edgelawn United Methodist Church
Edison Junior High School
Martin Elementary School
Lightner Memorial Missionary United Methodist Church
Begin Project
WVU Parkersburg Police Dept.
Caperton Center For Applied Technology Cent
Pettyville United Methodist Church
Grace Gospel Church
Parkersburg
Business Park
Athey Barn
14
Pettyville Christian Church
Preferred Alternative
Existing WV Route 14
End Project
Mount Pleasant Church
Mineral Wells VFD
Mineral Wells Elementary School
Sams Creek Church

WV 14, Mineral Wells to Pettyville Environmental Assessment

EXHIBIT 6: COMMUNITY RESOURCES

- Preferred Alternative
- Athey Barn
- Cemeteries
- Churches
- Schools
- Fire Departments
- Law Enforcement

0 700 1,400 2,800 Feet



April 12, 2014

Lowes #2246
Walmart Tire and Lube
Carter's Lumber
Unknown 1
Athey Barn
Preferred Alternative
Clear Creek Distribution Center
Jack Kress Body Shop
Muffler Shop
PKB RV's
New Parkersburg Truck Stop
77
Truck Stop
Pifers BP Gas Station

WV 14, Mineral Wells to Pettyville Environmental Assessment

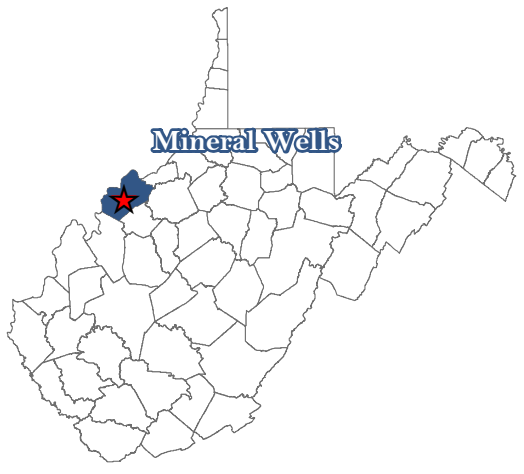
EXHIBIT 7: HAZARDOUS MATERIALS

Potential Hazardous Waste Sites
Preferred Alternative
Athey Barn

0 312.5 625 1,250 Feet

Baker

April 12, 2014



Preferred Alternative Centerline

Athey Barn

Preferred Alternative ROW

Little Kanawha River

UT Little Kanawha River

Jackson Run

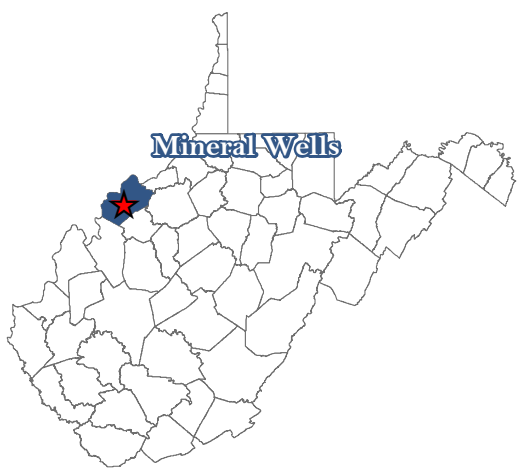
WV 14, Mineral Wells to Pettyville Environmental Assessment

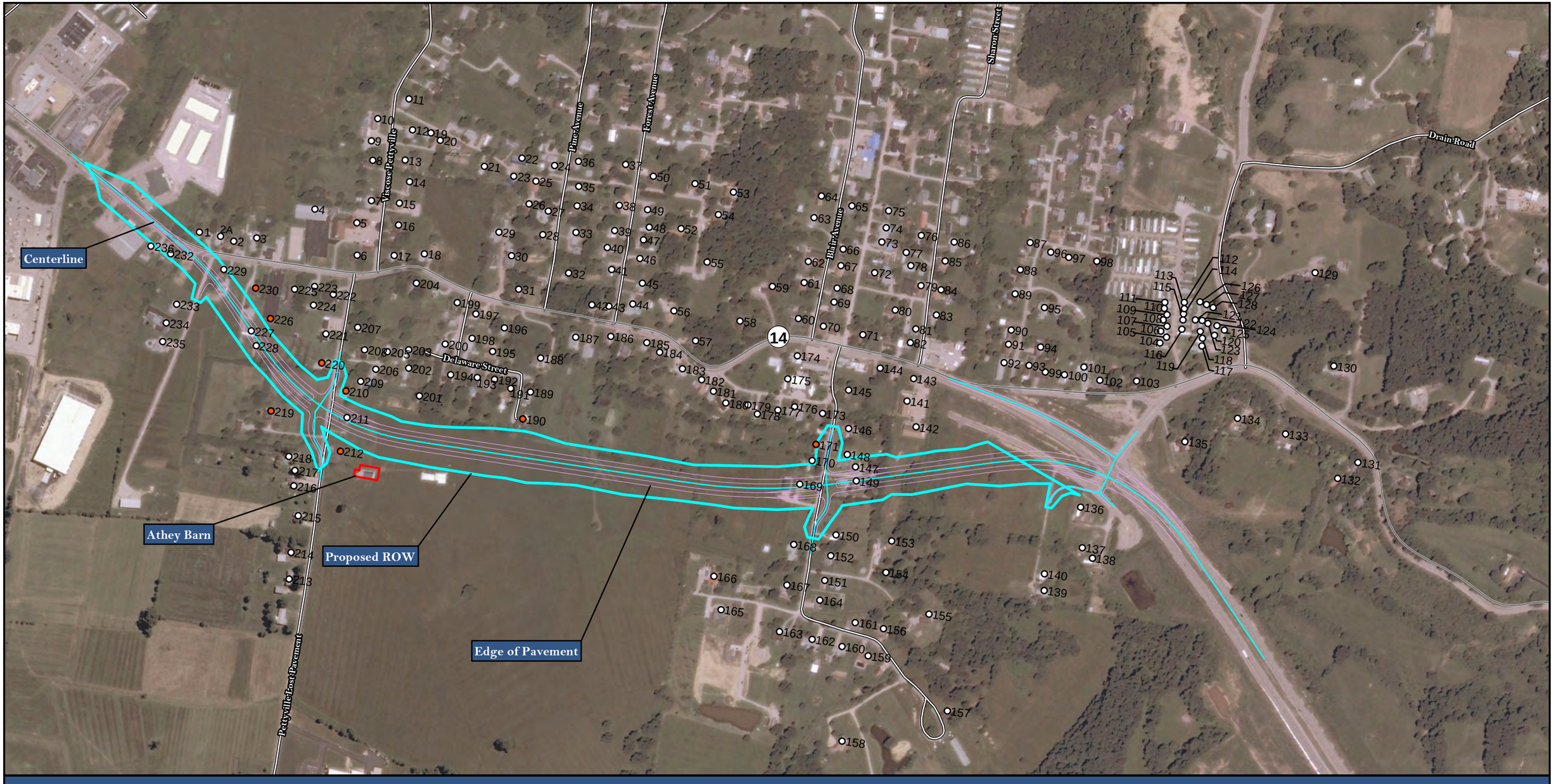
EXHIBIT 8: WATER RESOURCES

- Field Delineated Wetlands
- Field Delineated Streams
- WV National Hydrography Dataset (NHD)
- 100 Year Floodplain
- Preferred Alternative
- Athey Barn

0 290 580 1,160 Feet

April 12, 2014





WV 14, Mineral Wells to Pettyville Environmental Assessment

EXHIBIT 9: NOISE RECEPTORS

0 50100 200 300 400 500 Feet

- Sites Impacted By Preferred Alternative
- Sites Not Impacted By Preferred Alternative
- Edge of Pavement
- Proposed Right-of-Way
- Centerline
- Athey Barn

April 12, 2014

1.0 PURPOSE AND NEED

1.1 Introduction to the Project and Project Area

The West Virginia Department of Transportation, Division of Highways (WVDOH), in cooperation with the Federal Highway Administration (FHWA), proposes to upgrade an approximately 1.1-mile section of West Virginia State Route 14 (WV 14) in Wood County from Mineral Wells to Pettyville, a community within the urban area boundary of Parkersburg, WV. Figure 1 below and Exhibit 1 show the general project location, and Exhibit 2 shows the Project Area in greater detail. In this region, WV 14 has experienced an unacceptable level of congestion which is projected to worsen as described in the following section (Section 1.2).

WV 14 serves as a major connecting road between Interstate 77 (I-77) and Parkersburg, which is the third largest city in the state. The route is used by commuters to Parkersburg and provides access to industrial and commercial development that has grown along and adjacent to WV 14. From its interchange with I-77, an already upgraded section of WV 14 proceeds northward for approximately one mile as a four-lane divided highway. The roadway then merges with the old WV 14, which is a two-lane, undivided roadway for approximately 1.1 miles until the Pettyville commercial district, where it widens to a three-lane, undivided facility. The transition down to two lanes is shown in Figure 2. The shopping center at the northern end of the Project Area is shown in Figure 3. The Pettyville residential area lies between these two project termini.

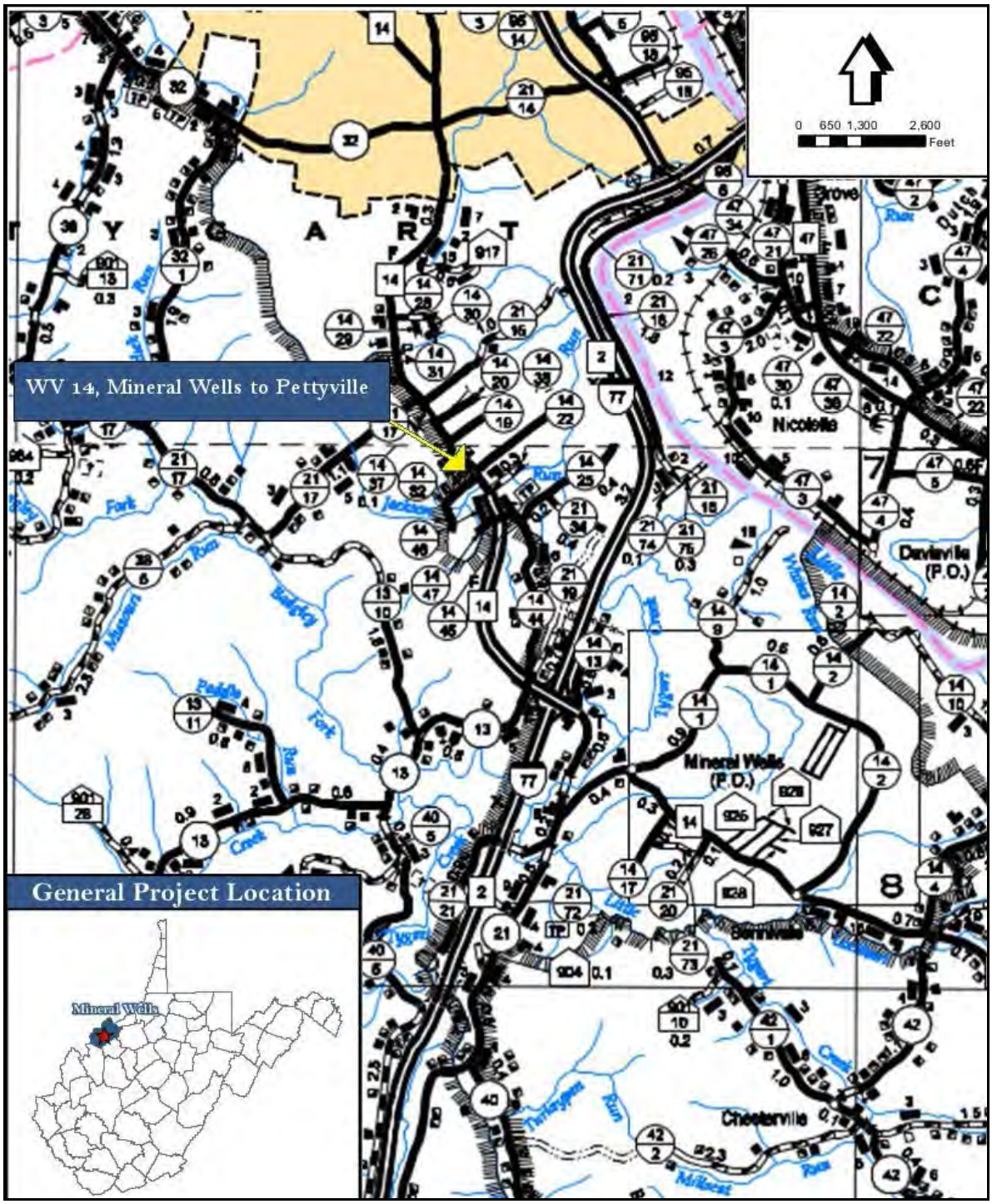


Figure 1: Highway map showing location of project. The area outlined to north is South Parkersburg. Note proximity to I-77 and portion of WV 14 that is already a divided arterial coming from I-77.

Figure 2: WV 14 North, at southern end of Project Area, looking toward residential area, where roadway transitions from a four-lane facility to a two-lane facility. Access to Parkersburg Business Park is to the right.

The Preferred Alternative for upgrading this portion of WV 14 will construct approximately 1.38 miles of new roadway to the west of the existing roadway and the residential community surrounding it. As detailed in this Environmental Assessment (EA), careful consideration of potential environmental impacts has led to selection of a Preferred Alternative that avoids, minimizes and mitigates for environmental impacts, all of which will fall below a level of significance. The proposed action is included in the approved *FY 2012-2015 Biennial Transportation Improvement Program* (TIP) and the *FINAL Draft 2014-2017 TIP* for the region as State Project U354-14-8.69 Sec 00 and Federal Project STP-0014 113(D) (WWW-IPC, 2011 and 2013a).

This EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) and related laws and regulations, as well as FHWA's Technical Advisory T 6640.8A, *Guidance for Preparing and Processing Environmental and Section 4(f) Documents* (FHWA, 1987), the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) (P.L. 109-59, Aug. 10, 2005), the Moving Ahead for Progress in the 21st Century Act (MAP-21) (P.L. 112-141, July 6, 2012), and related guidance. Evaluations included coordination with project stakeholders, including the general public, landowners, regional planners, local officials, and Federal and State regulatory agencies.

Figure 3: Shopping center along WV 14 to the north of Project Area. Top photo is facing north from the Project Area, and bottom photo is facing south toward Project Area (visible as two-lane roadway in distance).

1.2 Project Need

The upgrade of WV 14 in the Project Area is necessitated by several traffic, development, and roadway conditions. Traffic volumes have increased in recent years and are projected to continue to rise with growth in the region. As detailed below, transportation needs in the Project Area have been identified in the *Interstate Planning Commission Transportation Plan Update: 2035* produced by the Wood-Washington-Wirt Interstate Planning Commission (WWW-IPC), which serves as the region's Metropolitan Planning Organization (MPO) for the Parkersburg-Marietta metropolitan area (WWW-IPC, 2013b). Production of this plan includes cooperation with Federal and State transportation agencies as well as a public involvement program.

Roadway Capacity

Traffic volumes are projected to increase along WV 14 in the Project Area, and the number of locations operating poorly is projected to increase as well. The year 2012 existing average daily traffic (ADT) in the middle of the Project Area, on WV 14 just north of Pettyville Road, is 10,950 vehicles. The year 2032 ADT without the proposed project is projected to be 15,350 vehicles at this same location. Therefore, traffic volumes along WV 14 are forecast to grow by approximately 40% between 2012 and 2032. Using the ratio between traffic volume and the design capacity of the roadway, traffic analysis indicates that three locations along WV 14 in the Project Area currently operate at unacceptable conditions, and in 2032 three additional locations in the Project Area will operate with unacceptable conditions (Table 1).

Table 1: Results of Traffic Study – Present and Future Without the Project

Location	Locations With Unacceptable Conditions*	
	2012 Existing Year	2032 Design Year (without Project)
Intersection of WV 14 and Walton Drive (Signal)		One traffic movement
Intersection of WV 14 and Pettyville Rd (Stop-Controlled)		One traffic movement
Intersection of WV 14 and Coldwater Creek Drive (Stop-Controlled)		Two traffic movements
Roadway segment of WV 14 just south of Walton Drive (Two-Lane)	Both Directions	Both Directions
Roadway segment of WV 14 north of Pettyville Road (Two-Lane)	Both Directions	Both Directions
Roadway segment of WV 14 between Pettyville Road and Coldwater Creek Drive	Both Directions	Both Directions

**These were determined through traffic analysis including the time of delay at intersections and the ratio between a roadway's traffic volume and its design capacity. Source: Michael Baker Jr., 2012.*

The establishment of large employers in the region has likely caused some traffic volume increase, and this trend is expected to continue. For example, at the south end of the Project Area, WV 14 provides access to a distribution center for the Coldwater Creek company (Figure 1). This center was expanded in 2006 from 600,000 square feet to one million square feet. Also, at the north end of the Project Area, a Walmart Supercenter, Lowe's home improvement store, and Kohl's department store have all opened within the past 15 years.

Roadway Geometry

Traffic is slowed not just by an increasing number of vehicles, but also by the geometric constraints of the roadway. Traffic along WV 14 in the Project Area is reduced to two travel lanes, coming from four lanes in the south (Photo 1) and from three lanes in the north (Photo 2). While the four-lane divided portion of WV 14 south of the Project Area is posted at 55 mph, the speed limit along WV 14 within the Project Area is generally posted at 45 miles per hour (mph), and conditions in certain portions of the Project Area require speed reductions to 25 mph and 35 mph. Traffic along the two-lane portion of roadway experiences sharp curves, short sight distances, and a high number of access points (i.e., side streets and driveways) which limit travel speed (Figure 4).

Figure 4: WV 14 South, from north side of Forest Avenue intersection, showing narrow and curvy conditions, necessitating reduced speed limits.

Access Control

Within the Project Area, there are approximately 44 access points (roads and driveways) for vehicles to be making turning movements onto and off of WV 14. Especially at times of high traffic volumes, turning vehicles exacerbate poor traffic flow conditions, particularly along a

corridor confined to two lanes. As volumes increase, WV 14 needs to have fewer access points.

Facilitating Growth

Local planners recognize WV 14 in the Project Area as an important and growing corridor in the region. The 2035 Transportation Plan highlights two general needs that relate to WV 14 in the Project Area: 1) the need for improved access to I-77 in the region, and 2) the need for handling and facilitating anticipated growth near the commercial development along WV 14. Also, during the public outreach process for the Plan, "WV 14 improvements in Pettyville" and "Improved access to industrial sites and future commercial areas" were noted as two of the top eleven highway improvement needs throughout the entire 572 square mile study area for the plan (WWW-IPC, 2013, pp. IV-3 to IV-4).

Multi-modal plans also recognize needs in the Project Area. The Mid-Ohio Valley Transit Authority (MOVTA) has recommended expansion of bus services along WV 14 between Parkersburg and Mineral Wells (WWW-IPC, 2013b, p. VII-4). Also, bicycle/pedestrian improvements in the 2035 Transportation Plan include provision of a bicycle connection from the Mineral Wells post office to Parkersburg, which could occur along WV 14, and includes WV 14 through the Project Area as a Priority Route for pedestrians and bicyclists (WWW-IPC, 2013b, p. VII-18 and Fig. VII-5).

In summary, WV 14 between Mineral Wells and Pettyville has the following needs:

1) Improved traffic volume capacity,
2) Safer roadway geometry (i.e., curves and sight-distances) that can allow improved traffic flow,
3) Control of roadway access for travelers between I-77 and Pettyville, and
4) Support of local planning goals for growth.

1.3 Project Purpose

Based on the needs discussed in the previous section, WVDOH has developed the following project purpose statement:

> *The purpose of the WV 14 Mineral Wells to Pettyville project is to increase capacity, reduce geometric constraints, control access along WV 14 for travelers between Mineral Wells and Pettyville, and facilitate growth in accordance with regional land use planning.*

2.0 ALTERNATIVES

The following section discusses the range of alternatives considered for the project, the process used to identify and screen the alternatives, alternatives considered and eliminated from further consideration, and alternatives carried forward for detailed study. The No-Build Alternative was retained for detailed study and serves as a baseline for alternatives comparison. A Preferred Alternative has been identified, and impacts associated with it are detailed in Section 3.0.

2.1 Alternative Development and Screening Process

To meet requirements of this project, four (4) alternatives were developed and analyzed by WVDOH. Each of the alternatives is described in the following sections and is shown in Exhibit 3.

The new roadway will be considered a divided rural arterial with a design speed of 55 mph. The design criteria include a maximum allowable grade of 7.0 percent. The typical section will match that of the first mile of WV 14 to the south of the Project Area: four twelve-foot travel lanes with a six-foot usable shoulder on the inside and a twelve-foot usable shoulder on the outside. The north and south bound lanes will be separated by a 46-foot grassed median with 6:1 slopes toward the centerline. Where the roadway transitions to a three-lane facility near its northern terminus in Pettyville, it will have three twelve-foot lanes, with the center lane designated for turning and two twelve-foot shoulders to either side. Typical sections are presented in Exhibit 4.

The following sections provide an overview of each alternative and a comparison of the alternatives based on screening criteria. Table 2 provides a summary of the alternatives and their impacts.

Alternative Descriptions

No-Build Alternative - Under the No-Build Alternative, the proposed project is not implemented. This alternative includes all currently adopted and planned transportation improvements in the Project Area. WV 14 undergoes routine maintenance, but is not substantially altered.

Alternative 1 - Alternative 1 reconstructs WV 14 generally along the existing alignment of WV 14 throughout the Project Area, but straightens sharp curves between Blair Avenue and Forest Avenue and to the south of Viscose Road (Exhibit 3). With a length of 1.16 miles, this alternative is the shortest, and particularly because it follows the existing route most closely, it requires the least amount of new right-of-way. However, the substantial use of the existing route will require complicated maintenance of traffic during construction and extensive utility relocation (approximately 25 utility poles and 7,625 feet of gas, water, and sewer lines). Alternative 1 has an estimated cost of $16.883 million (Table 2).

Direct access will be maintained from the new WV 14 to Lost Pavement Road/Viscose Road, Pine Avenue, Delaware Street/Forest Avenue, Oakdale Avenue/Parkview Drive, Sharon

Street, Pike Street, and Sam's Creek Road (Exhibit 3). In order to control access to the widened roadway, traffic currently using access roads other than those listed will be re-routed to join one of these listed access points.

Alternative 2 - Alternative 2 reconstructs WV 14 generally along the existing alignment of WV 14 in the northern half of the Project Area and relatively far to the west of the existing alignment in the southern half (Exhibit 3). With a length of 1.36 miles, this alternative is the second longest. Like Alternative 1, Alternative 2 will straighten the curve to the south of Viscose Road in the north. In the southern half of the Project Area, Alternative 2 avoids impacts to existing structures along WV 14, but increases impacts to the Oakdale Avenue neighborhood as compared to Alternative 1. With less overlap of the existing roadway as compared to alternatives that stay to the east, construction of Alternative 2 will require somewhat less complicated maintenance of traffic and utility relocation (approximately 29 utility poles and 5,075 feet of gas, water, and sewer lines). Alternative 2 has an estimated cost of $14.426 million (Table 2).

Direct access will be maintained from the new WV 14 to Lost Pavement Road/Viscose Road, Pine Avenue, Delaware Street/Forest Avenue, Oakdale Avenue, and Sam's Creek Road (Exhibit 3). In order to control access to the widened roadway with higher speeds, traffic currently using access roads other than those listed will be re-routed to join one of these listed access points. Not many additional roadways will be affected in this way with Alternative 2 because it travels to the west of most of the neighborhood streets.

Alternative 3 - Alternative 3 reconstructs WV 14 generally along the existing alignment of WV 14 in the northern half of the Project Area, but it stays to the west of the existing roadway in the southern half of the Project Area to take a more direct route to the alignment's southern terminus (Exhibit 3). With a length of 1.33 miles, Alternative 3 is the second shortest of the alignments. In the southern half of the Project Area, Alternative 3 impacts fewer structures along WV 14 than Alternative 1, but it impacts an apartment complex across from Sharon Street and part of the Oakdale neighborhood. The substantial use of the existing route will require complicated maintenance of traffic during construction and extensive utility relocation (approximately 29 utility poles and 8,750 feet of gas, water, and sewer lines), although less than with Alternative 1. Alternative 3 has an estimated cost of $18.801 million (Table 2).

Direct access will be maintained from the new WV 14 to Lost Pavement Road/Viscose Road, Pine Avenue, Delaware Street/Forest Avenue, Oakdale Avenue/Parkview Drive, and Sam's Creek Road with this alternative (Exhibit 3). In order to control access to the widened roadway, traffic currently using access roads other than those listed will be re-routed to join one of these listed access points.

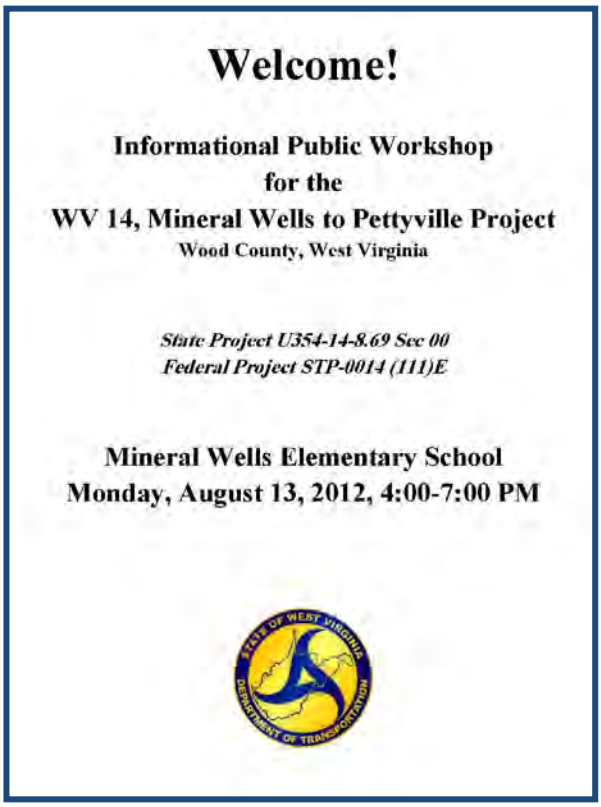
Alternative 4 (Preferred) – Alternative 4 reconstructs WV 14 almost entirely to the west of the existing alignment of WV 14. With a length of 1.38 miles, Alternative 4 is the longest of the Build Alternatives (Exhibit 3). This alternative avoids impacts to neighborhoods along WV 14, but will impact the Oakdale neighborhood. Construction of this alternative will require the least amount of traffic maintenance coordination and utility relocation (approximately 15 utility

poles and 4,450 feet of gas, water, and sewer lines). Alternative 4 has an estimated cost of $9.601 million (Table 2).

Direct access will be maintained from the new WV 14 to the unnamed side street south of the WalMart, Lost Pavement Road, Oakdale Avenue, and Sam's Creek Road (**Exhibit 3**). The corridor does not cross other roads that will require re-routing.

Coordination

An informational workshop public meeting was held on August 13, 2012 at the Mineral Wells Elementary School in order to present all of the alternatives under consideration, and to receive feedback. Comments were received at the meeting and through postal mail, email and online submissions throughout a comment period, which ended September 13, 2012.



In total 34 comment letters were submitted on the project. Of these, seven (7) comments expressed support for either the No-Build Alternative or a modified version of Alternative 1. Generally, these comments stated that there was not enough need for the project, and that the principle problem of a few sharp curves could be the sole focus of the project, with the possible addition of a turning lane along the existing route.

An additional seven (7) comments expressed support for Alternatives 1 or 3. The most common comment in these submissions was that they wanted to avoid impacts to the Oakdale Road neighborhood.

Twenty (20) comments expressed support for Alternative 4. Common reasons included: fewer residential relocations, less cost, and avoidance of the churches. Two of these comments did not specifically state support for Alternative 4, but were included in this tally because their only comment expressed concern for avoiding a church impact. Because Alternative 4 is the only alternative avoiding all of the churches, those comments were included with the 18 comments that specifically stated support for Alternative 4.

Two of the commenters mostly supporting the No-Build Alternative stated that if Alternative 4 were selected, they would prefer to see it moved farther to the west to avoid the Oakdale Road neighborhood.

Table 2: Alternatives Comparison

	No Build Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4 (Preferred)
Length (miles)	Not Applicable	1.16 (6,100 feet)	1.36 (7,200 feet)	1.33 (7,000 feet)	1.38 (7,300 feet)
Net Waste[1] (cubic yards)	0	260,000	190,000	140,000	73,300
Improves Roadway Capacity and Geometry	No	Yes	Yes	Yes	Yes
Controls Access	No	Yes	Yes	Yes	Yes
Improves Access to Economic Centers	No	Yes	Yes	Yes	Yes
Fulfills Purpose and Need	No	Yes	Yes	Yes	Yes
Residential Relocations	0	38	29	36, plus a 24-unit apartment complex	13
Commercial Relocations	0	7	5	7	4
Church Relocations	0	1	1	1	0
Environmental Justice Disproportionate Impact	No	No	No	Yes	No
Stream Crossings	0	2 (203 feet)	3 (513 feet)	2 (276 feet)	3 (413 feet)
Estimated Wetland Impact[2]	0	2 (0.02 acre)	4 (0.41 acre)	1 (0.02 acre)	4 (0.99 acre)
Farmland Soils (Prime & Local/ Statewide Important)	0	2 acres	11 acres	5 acres	21 acres
Rare, Threatened, and Endangered Species	No	No	No	No	No
Cultural Resources	No	No	No	No	No

	No Build Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4 (Preferred)
Hazardous Materials Site(s) in new right-of-way	Not Applicable	Yes	None Known	Yes	None Known
Air Quality	No	No	No	No	No
Estimated Cost[3]	0	$16.883 million	$14.426 million	$18.801 million	$9.601 million

[1] Net Waste equals the required amount of material to be cut minus the amount of material needed for fill. The remainder represents the amount of material that will have to be hauled and disposed outside the right-of-way.

[2] No jurisdictional determination has been conducted. Wetland acreage is based on preliminary assessment by wetland scientists.

[3] Estimate includes costs of construction, utilities, and right-of-way.

Screening Criteria

Two principle criteria were used to screen alternatives: ability to fulfill the purpose of the project and the number of relocations required of businesses, residences, and churches. Impacts to other natural, cultural, and physical environmental resources were not prioritized in the screening process because of the small scale of impacts and the lack of particularly sensitive resources.

The initial public and agency coordination and inventory of resources within and adjacent to the Project Area did not reveal particularly sensitive or locally important resources to be prioritized in the screening process other than the relocations. None of the alternatives impact listed historic resources, archaeological sites requiring further study, federally protected species and any designated critical habitat, parks or wildlife refuges. The alternatives differ in their impacts to wetland and farmland soil resources (Table 2). As discussed in Section 3.0, impacts to farmland soils were confirmed to not be significant for any of the alternatives, and wetland impacts fall below an acre and can be mitigated through several measures.

Project Purpose – The project's purpose is detailed in Section 1.0. Each alternative was assessed for its ability to satisfy components of the project's purpose. The purpose of the project is to increase capacity, reduce geometric constraints, control access along WV 14 for travelers between Mineral Wells and Pettyville, and facilitate growth in accordance with regional land use planning.

Displacements (Residential, Business, and Churches) – The Project Area lies adjacent to the Parkersburg city limits, so it is likely that any road widening or new roadway project would have impacts to businesses and residences (see Exhibits 1 and 2). However, the population specifically within the Census Blocks overlapping the Project Area only totals 735 people (US Census Bureau, 2011). Therefore, there is potential for impacting a substantial proportion of the area's population if a project is aligned through the middle of a residential area. For

example, if it is assumed that households average 2.5 occupants[1], 30 residential impacts would displace over one tenth of the entire population within the region's Census Blocks (approximately 75 residents out of 735). Avoidance of such disruption has been examined with the alternatives development and evaluation.

With the relatively small size of the Project Area neighborhoods, existing business and community facility impacts could also have a more noticeable impact on community cohesion and socioeconomics of the area. Specifically, nearly a quarter of the comments (8 out of 34) on the preliminary alternatives mentioned concern for impact to a church or churches, so this resource was a focus of evaluation.

2.2 Alternatives Eliminated from Detailed Study

Preliminary assessment of each of the alternatives is summarized in Table 2.

Alternative 1 – Alternative 1 fulfills the project's purpose and need, although to a lesser degree than Alternative 4. Alternative 1 improves roadway capacity and geometry; it provides a controlled access facility; and improves access to economic centers by providing an improved facility from the I-77 interchange to the Pettyville commercial center. Although future development is not controlled by WVDOH and FHWA, the region's land use plan highlights need for improving access to undeveloped areas that could accommodate commercial expansion. Alternative 1 does not facilitate this goal of local planning. Also, in order to provide a controlled access facility within the Alternative 1 corridor, several access roads will need to be re-routed.

Alternative 1 will potentially displace 38 residences, seven (7) businesses, and one (1) church. Because of the relatively high number of displacement impacts, Alternative 1 was eliminated from further consideration.

Alternative 2 – Alternative 2 fulfills the project's purpose and need, although to a lesser degree than Alternative 4. Alternative 2 improves roadway capacity and geometry; it provides a controlled access facility; and improves access to economic centers by providing an improved facility from the I-77 interchange to the Pettyville commercial center. Although future development is not controlled by WVDOH and FHWA, the region's land use plan highlights need for improving access to undeveloped areas that could accommodate commercial expansion. Alternative 2 does facilitate this goal of local planning through the middle portion of the Project Area (near Oakdale Avenue). In order to provide a controlled access facility within the Alternative 2 corridor, one or two access roads will need to be re-routed.

Alternative 2 will potentially displace 29 residences, five (5) businesses, and one (1) church. This alternative will disrupt slightly fewer access roads than Alternative 1. Because of the

[1] Actual 2010 Census results showed 2.58 people per household throughout the United States (http://www.census.gov/prod/cen2010/briefs/c2010br-14.pdf).

relatively high number of displacement impacts, Alternative 2 was eliminated from further consideration.

Alternative 3 – Alternative 3 fulfills the project's purpose and need, although to a lesser degree than Alternative 4. Alternative 3 improves roadway capacity and geometry; it provides a controlled access facility; and improves access to economic centers by providing an improved facility from the I-77 interchange to the Pettyville commercial center. Although future development is not controlled by WVDOH and FHWA, the region's land use plan highlights need for improving access to undeveloped areas that could accommodate commercial expansion. Alternative 3 does not facilitate this goal of local planning. Also, in order to provide a controlled access facility within the Alternative 3 corridor, several access roads will need to be re-routed.

Alternative 3 will potentially displace 36 residences, one 24-unit apartment complex, seven (7) businesses (one of which is the apartment complex), and one (1) church. The apartment complex has received funding from the U.S. Department of Agriculture Rural Development program. The program provides Rural Rental Housing Loans in order to "provide affordable multifamily rental housing for very low-, low-, and moderate-income families; the elderly; and persons with disabilities" (USDA, 2013). Therefore, it was considered that impact to these apartments could yield disproportionately high adverse impacts to low-income population, which is an environmental justice concern. Because of the relatively high displacement impacts, Alternative 3 was eliminated from further consideration.

2.3 Alternatives Carried Forward

No-Build Alternative

The No-Build Alternative does not meet any components of the project's purpose. It does not improve roadway capacity and geometry, it does not provide a controlled access facility, and it does not improve access to economic centers. However, the No-Build Alternative serves as a benchmark against which the impacts of other alternatives can be compared. Inclusion of the No-Build Alternative is consistent with NEPA regulations. Therefore, this alternative has been carried through the EA for assessment alongside the Preferred Alternative.

Preferred Alternative

Alternative 4 fulfills the project's purpose and need and results in substantially fewer relocations than the other three alternatives (Table 2). It improves roadway capacity and geometry by offering a four-lane facility without sharp curves; it provides a controlled access facility; and it improves access to economic centers by providing the improved facility from the I-77 interchange to the Pettyville commercial center, and by providing access to undeveloped acreage that could serve to offer economic expansion needs in the future.

Alternative 4 is located mostly on undeveloped land that is removed from the infrastructure and neighborhoods currently surrounding WV 14. As a result, Alternative 4 will displace the least amount of residences, businesses, and churches. Alternative 4 will potentially displace 13 residences, four (4) businesses, and no (0) churches. The next smallest amount of

displacements would occur with Alternative 2, which has 29 residential relocations, five (5) business relocations, and one (1) church relocation. Alternative 4 will also avoid impacts to a potential environmental justice population located along the existing roadway. In addition, Alternative 4 will have less temporary disruption to traffic during construction, will require less re-routing of access roads, and will cost substantially less than the other alternatives. Therefore, WVDOH and FHWA have chosen Alternative 4 as the Preferred Alternative. The preliminary proposed right-of-way and centerline for the Preferred Alternative is presented in Exhibit 5.

The following sections present the potential direct, indirect and cumulative impacts associated with the Preferred Alternative as well as potential mitigation for those impacts. Consideration of a single build alternative in an EA is consistent with FHWA and CEQ guidelines and regulations (23 CFR 771.125, 40 CFR 1502 and FHWA, 1987).

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3.0 IMPACTS

3.1 Land Use

The Project Area (Exhibit 2) surrounds a portion of WV 14 to the south of the City of Parkersburg in Wood County, WV. Lying between the I-77 highway corridor and a commercial area featuring large retail shops, the Project Area contains mixed land uses, including residential, industrial, commercial, grassland/pastureland/agricultural, and transportation (Figure 5). The conversion of these existing land uses to transportation use is consistent with local land use plans.

Figure 5: Left, commercial development at northern end of project; Right, fields located along western portion of Project Area.

Properties currently adjacent to WV 14 through the Project Area are dominated by residences. Other development includes the Coldwater Creek distribution center located to the far southeastern end of the Project Area, a shopping center (with a Walmart, Lowes, and several department stores and restaurants) located to the far northern end of the Project Area, and a few small businesses and churches along the approximately 1.5 miles of WV14. To the west, there are fields that are maintained with mowing, but are not currently being farmed. The Athey & Sons Dairy Farm used to graze and raise feed for a herd of 40-50 cows (see Section 3.5). Operations ceased around 1979. Aside from WV 14, the transportation land uses in the surrounding area include I-77 to the south and east, and several smaller county and community roadways.

The Preferred Alternative right-of-way encompasses 27.2 acres in total, most of which crosses open fields. A complete breakdown of the existing land uses is provided in Table 3.

Table 3: Conversion of Land Use with Preferred Alternative

Land Use Category	Existing Acreage in Preferred Alternative Right-of-Way	Percent of Total Area
Forested	3.7 acres	13.5%
Grasslands/Pasturelands/ Agricultural	19.7 acres	72.5%
Barren/Developed	1.1 acres	4.0%
Roads	2.7 acres	9.9%
TOTAL	27.2 acres	

Source: WVU NRAC, 2011.

With the Preferred Alternative, most of the construction (24.5 acres or 90 percent) will affect a change in land use from Forested, Grasslands/Pasturelands/Agricultural, and Barren/Developed land uses to Transportation land use. The remaining 10 percent (2.7 acres) of the proposed right-of-way is already in use for Transportation.

With the No-Build Alternative, no changes in land use will occur.

Transportation Planning

The region's MPO has produced a long-range transportation plan that includes the proposed project (WWW-IPC, 2013b). The project is also included in the most recent approved TIP (FY 2012-2015) and in the *FINAL Draft 2014-2017 TIP* for the region as State Project U354-14-8.69 Sec 00 and Federal Project STP-0014 113(D) (WWW-IPC, 2011 and 2013a). Production of these plans includes cooperation with Federal and State transportation agencies as well as a public involvement program. The public is also involved in WVDOH's planning for this project. A public meeting was held in August of 2012, a comment period followed that meeting, and the public will be invited to attend an additional meeting and participate in an additional comment period upon the release of this EA (see Section 4.0).

Farmland

Farmland soil types include prime soils, unique soils, and soils other than prime or unique that are of statewide or local importance. Within each state, U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS) district conservationists are responsible for determining which soils are classified under the four farmland types. Soils classified as farmland are afforded protection under the Farmland Protection Policy Act (FPPA) (Subtitle I of Title XV, Agriculture and Food Act, 1981).

Coordination with NRCS was initiated in order to complete the required Farmland Conversion Impact Rating Form (Form CPA 106 for corridor projects). Projects are considered to have significant impact if the NRCS determines it scores 160 or above. The Preferred Alternative corridor scored a 94. A copy of the letter and form filled-out by NRCS is included in Appendix A.

3.2 Socioeconomics

Residential Impacts

The proposed project will displace 13 residences located along Oakdale Avenue, Lost Pavement Road, and off of existing WV 14 just south of the Pettyville commercial area. New intersections are included with the Preferred Alternative at Oakdale Avenue and Lost Pavement Road; homes to the west of the new roadway will not be isolated.

An important consideration in the selection of the Preferred Alternative was minimizing the number of displacements and the disruption to community cohesion. If the existing WV 14 had been widened and its number of access points reduced for safety, traffic patterns for several neighborhoods would have had to be re-routed in order for travelers to access select intersection locations. With the Preferred Alternative, existing access points along WV 14 will remain, and turning movements at these locations are expected to become easier with the transfer of through-traffic to the new roadway.

Acquisition and relocation will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended. The owner of a displaced residence is eligible to receive reimbursement for the fair market value of the property acquired, as well as moving costs, and will be provided relocation assistance and advisory services together with the assurance of the availability of decent, safe, and sanitary housing. Displaced renters who have rented their apartment/home for at least 90 days before negotiations will be provided with relocation assistance advisory services and compensation, which may be used to rent another housing property or to purchase a home.

In addition, there will be temporary disruption to travel in the project area during construction. A maintenance of traffic plan will be developed and implemented during construction to assure both motorist and construction worker safety. This plan will be developed using guidelines of FHWA, the American Association of State Highway and Transportation Officials (AASHTO), and WVDOH. Access along WV 14 and side roads (e.g., Oakdale Avenue) will be maintained; however, there will be temporary delays and lane closures during construction.

Business Impacts

The following businesses are located in the Project Area (along and within approximately two blocks of the existing route):

- Recreational vehicle dealership: *PKB RVs*;
- Environmental laboratory: *Water Environmental Testing*;
- Automotive shop: *Ohio Valley Muffler and Brake*;
- Automotive shop: *Jack Kress Body Shop*;
- Storage facility: *Riverlink Storage*;

- Small retail store: *DJ's Consignments*;
- Automated car wash (unknown name);
- Tattoo shop: *Smiley's Tattoos and Pipes*;
- Storage facility (appears to be currently vacant);
- Lumber yard: *Carter Lumber*;
- Bank: *First Federal Bank* (north of the project); and
- Large retail store: *Walmart* (north of the project); and
- Restaurant: *Jumbo Buffet Grill* (north of the project).

Four (4) of these businesses will be relocated as a result of the proposed project:.*Riverlink Storage*, the automated car wash, *Smiley's Tattoos and Pipes*, and the warehouse that appears to be currently vacant. Acquisition and relocation will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended.

Other businesses may experience indirect effects due to the project. Existing businesses that remain along the existing WV 14 will experience a drop in passing traffic. It is not anticipated that this will be a substantial effect because most of these businesses are the type that customers plan to visit (e.g., car repair) as opposed to those that rely heavily on impulse visits (e.g., gift shop). One exception is the consignment shop. This shop is adjacent to two large churches, which includes a pre-school, near the north end of the project, and will likely still be seen by the substantial traffic visiting those destinations.

The economic environment in general is expected to benefit from the project. In the short-term, construction will provide jobs and indirect economic activity from the increase in workers in the area. In the long-term, there will be improved transportation to and from I-77 and opportunity provided by access to developable land. The future land use in the area is not within the control of WVDOH or FHWA. However, it is reasonably foreseeable that more development will occur to the west of WV 14 because of the project purpose and stated vision by local planners (see Section 3.11 for discussion of reasonably foreseeable future actions and cumulative effects).

In addition, there will be temporary disruption to travel in the Project Area during construction. A maintenance of traffic plan will be developed and implemented during construction to assure both motorist and construction worker safety. Access along WV 14 and side roads (e.g., Oakdale Avenue) will be maintained; however, there will be temporary delays and lane closures during construction.

Emergency Services and Community Facilities

Exhibit 6 shows the community facilities in the area surrounding the Preferred Alternative. The Preferred Alternative will not impact any public parks, schools, or emergency service

facilities. One pre-school is located in close proximity to the project, at the Grace Gospel Church, and impact to this church is discussed below. Because of the swing to the west, the Preferred Alternative will have approximately the same length as the existing, more windy WV 14. However, vehicles on the existing roadway are slowed by curves, short sight distances, a high number of access points and posted speed limits of 45, 35, and even 25 mph (see Section 1.2).

Although no emergency service facilities are located along the existing or proposed route, the project will have an effect on emergency services. With its wider, straighter roadway, the Preferred Alternative will reduce response times for emergency vehicles passing through the Project Area and will reduce congestion on existing WV 14 for response to the east of the Preferred Alternative.

There are three (3) churches within the Project Area. Pettyville Christian Church is located in Mineral Wells at 16 Cross Street, and will be 990 feet from the Preferred Alternative centerline. Grace Gospel Church is located in Pettyville at 6239 Pike Street (WV 14) and will be 810 feet from the Preferred Alternative centerline. Pettyville United Methodist Church is located at 6202 Pike Street (WV 14). The back of the Pettyville United Methodist Church building is 210 feet from the Preferred Alternative centerline, but the outdoor picnic area and storage associated with the church will be adjacent to the edge of the Preferred Alternative right-of-way (Exhibit 6).

Figure 6: Pettyville United Methodist Church, with existing WV 14 in the foreground and outdoor pavilion in background and inset.

The No-Build Alternative will not displace any of the churches. However, the No-Build Alternative will affect the Grace Gospel Church and Pettyville United Methodist Church

because of increased traffic congestion along the existing WV 14 which is used to access these churches.

The Preferred Alternative will not displace any of the churches. However, the Preferred Alternative will have noise impact on the outdoor pavilion at the back of the Pettyville United Methodist Church property (see Figure 6 inset). Noise impacts are detailed in Section 3.9.

Environmental Justice

Introduction

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 11, 1994), requires each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." The FHWA has identified three fundamental principles of EJ:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations;
- To ensure the full and fair participation by all potentially affected communities in the decision-making process; and
- To prevent the denial of, reduction in, or substantial delay in the receipt of benefits by minority and low-income populations. (FHWA, 2013)

The potential for the proposed project to have an environmental justice impact was examined through visits to the Project Area, investigation of data from the U.S. Census Bureau and other locally specific information.

Study Area

The study area for this analysis includes the Census Blocks that overlap or lie within 2,000 feet of the proposed project. This area includes 21 Census Blocks within four (4) Census Block Groups, nested within three (3) Census Tracts.

The proposed project is located in Wood County, WV. In the 2010 U.S. Census, Wood County had a total population of 86,956 people. The Preferred Alternative lies entirely within Census Tract 107.02, a large area that includes portions of Mineral Wells to the east of I-77. Census Tract 107.02 encompasses 41,247 acres and has a population of 8,236 people.

The northern terminus of the Preferred Alternative abuts two smaller Census Tracts within the incorporated limits of the City of Parkersburg to the north, Tract 9.03 and Tract 8.02. These two Census Tracts have total populations of 4,298 and 3,453, respectively. However, within the commercialized Census Blocks that lie adjacent to the Project Area in these northern two Tracts, the total population is zero (0).

The 21 Census Blocks surrounding the Preferred Alternative right-of way have a total area of 1,104 acres and total population of 735 people. A summary of these areas is provided in Table 4 and figures are provided in Appendix B.

Low Income

Low-income is defined as households living below the 2013 Department of Human Health Services (DHHS) poverty guideline of $23,550 (for a family unit size of four persons). Statistics on income presented below are based on the U.S. Census Bureau's poverty threshold, which is somewhat different from the DHHS poverty guideline; however, as stated at the DHHS website, "The best approximation for the number of people below the HHS poverty guidelines in a particular area would be the number of persons below the Census Bureau poverty thresholds in that area." (DHHS, 2013a and 2013b)

The U.S. Census data show that the Project Area is on the outskirts of an urban area with lower incomes than the county and state averages, and that the Census Tract surrounding the proposed right-of-way itself has an average household income higher than at the county and state levels.

Table 4 provides a summary of the data retrieved from the U.S. Census Bureau, 2008-2012 American Community Survey, 5-Year Estimates. U.S. Census data were not available at the Census Block Group or Census Block levels of analysis.

In addition to examining Census data, field views, comments from the public, and planning documents were consulted. Throughout the Project Area, there does appear to be low-income residents. This is apparent from the state of disrepair of several homes, the presence of mobile homes, and the presence of an apartment complex that has received funding from the U.S. Rural Development program which "provide[s] affordable multifamily rental housing for very low-, low-, and moderate-income families; the elderly; and persons with disabilities" (USDA, 2013).

Because low-income residents may be located throughout the Project Area, minimizing the total number of displacements with the selection of Preferred Alternative 4 likely reduced the number of low-income residential displacements. It is possible that displacements associated with the Preferred Alternative may directly affect some low-income residences; however, the apartment complex mentioned above will not be directly impacted by Alternative 4. Two of the residences that will be displaced by the Preferred Alternative are mobile home rental units at the far northern end of the project; however, the household incomes of these residences are not available.

Despite the potential relocation of some low-income persons, low-income populations are not likely to bear a disproportionate adverse effect from the project. Most of the displacements do not appear to be low-income properties, and the impact will be mitigated through relocation procedures. Also, potential benefits of the project help to offset the adverse impacts.

Displaced residents, including renters, will be relocated as detailed above ("Residential Impacts"), and, on-balance, it is expected that low-income residents in the Project Area will benefit from the improved access to jobs afforded by the project. The new roadway will also be more conducive to bicycling, which can provide more benefit to low-income populations (see Section 3.3). Project benefits, such as reduced congestion along the existing WV 14 (Pike Street), and drawbacks, such as temporary traffic delays during construction, will be felt by all travelers through the Project Area. The project will not restrict access to any existing public or community service, commercial area, business, or employment center.

Table 4: Summary of Minority and Income Data

Area	Total Population	Minorities[3]	Median Household Income[5]	Below Poverty Threshold[5]
Census Blocks[1]	735	2.9% (21)	N/A	N/A
Census Block Groups[2]	5,591	2.1% (118)	N/A	N/A
Census Tract 8.02[3]	3,453	3.2% (109)	$31,899	20.6%
Census Tract 9.03[3]	4,298	3.0% (130)	$34,255	20.1%
Census Tract 107.02	8,236	2.1% (172)	$49,928	11.1%
Wood County	86,956	3.4% (3,136)	$42,734	16.0%
West Virginia	1,852,994	6.1% (113,006)	$40,400	17.6%

Sources: 2010 U.S. Census for population and minority data; U.S. Census Bureau, 2008-2012 American Community Survey, 5-Year Estimates for income data.

[1] Census Blocks used in the analysis include 16 within Census Tract 107.02, three (3) within Census Tract 9.03, and two (2) within Census Tract 8.02. Income data is not available (N/A) at the Census Block level of analysis.

[2] Census Block Groups are groupings of several Census Blocks within the Census Tracts. Income data is not available (N/A) at the Census Block Group level of analysis.

[3] Census Tracts 8.02 and 9.03 are located immediately to the north of the proposed right-of-way.

[4] Minorities include people identifying themselves on the U.S. Census as Black, Hispanic, Asian American, American Indian and Alaskan Native, and other non-white persons, including those persons of two or more races.

[5] Median Household Income can be compared to the DHHS poverty guideline of $23,550 (for a family unit size of four persons) to estimate poverty status. However, this table also presents the percentage of all people living below the Census poverty threshold (2008-2012 5-yr estimates).

Minorities

According to FHWA Order 6640.23 (1998), "FHWA Actions to Address Environmental Justice in Minority and Low-Income Populations," population groups defined as minorities include the following:

- Black (having origins in any of the black racial groups of Africa);
- Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture of origin, regardless of race);
- Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands);
- American Indian and Alaskan Native (having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition); or
- Other non-white persons, including those persons of two or more races.

Results of the U.S. Census data analysis show that the Census Blocks surrounding the Project Area have a lower percentage of minorities (2.9%) than at the county (3.4%) or state (6.1%) levels. Table 4 provides a summary of these data, retrieved from the 2010 U.S. Census.

In addition to examining Census data, field views, comments from the public, and planning documents were consulted. No businesses, community centers, or newspapers that cater to a particular minority group were identified in the Project Area. It is possible that relocations that are part of this project may directly affect minority individuals; however, minority populations are not likely to bear a disproportionate adverse effect from the project. Relocations will be mitigated through procedures described in the above section entitled "Residential Impacts." Also, potential benefits of the project, such as improved access to employment and community centers, reduced traffic congestion, accident rates, and fatalities, plus improved access for emergency response, help to offset the adverse impacts.

Environmental Justice Conclusion

Based on the above analysis, the proposed project may affect some low-income and/or minority individuals; however, it will not cause disproportionately high and adverse effects on any minority or low-income populations as discussed in the Executive Order 12898 regarding environmental justice. To help ensure potential impacts to the community are addressed, WVDOH has provided forums for exchange of information on the proposed project (Section 4.0), and has considered comments received by the public.

Socioeconomic Impacts Conclusion

The Preferred Alternative will impact the social and economic environments of the Project Area. Relocations were minimized to the extent possible while fulfilling the project's purpose and need. Changes to traffic are an intended result of the project – to improve travel along the mostly residential stretch of the existing WV 14 (Pike Street) and improve access to existing industrial and commercial centers. Both short-term and long-term economic benefits are expected with roadway construction and future development adjacent to the new roadway. Additionally, safety in the region will improve through reduced emergency response times, improved bicycle facilities, and diversion of traffic from Pike Street.

With the No-Build Alternative, no displacements will occur, congestion along Pike Street will increase, and the developable land to the west of WV 14 will remain minimally accessible via smaller existing roadways (Oakdale Avenue and Lost Pavement Road).

3.3 Pedestrian and Bicyclist Facilities

The Preferred Alternative will not directly impact any existing pedestrian or bicycle trails.

Improvement to pedestrian and bicycle access in the Project Area was identified as an objective in the region's long-range transportation plan. The 2035 Transportation Plan includes provision of a bicycle connection from the Mineral Wells post office to Parkersburg, which could occur along WV 14, and includes WV 14 through the Project Area as a Priority Route for pedestrians and bicyclists (WWW-IPC, 2013b, p. VII-18 and Fig. VII-5).

Through most of the Project Area, the existing WV 14 (Pike Street) has no sidewalks, little to no paved shoulder, and curved conditions that are unconducive to pedestrian and bicycle travel. With the No-Build Alternative, this condition will remain unchanged while traffic congestion increases in the future.

With a 12-foot paved shoulder to either side of the new roadway, the Preferred Alternative will provide more room for bicyclists to travel through the Project Area. The Preferred Alternative will also divert traffic off the existing WV 14 (Pike Street), allowing safer conditions for bicyclists and pedestrians trying to use that route.

3.4 Hazardous Materials

Introduction

Hazardous waste sites are regulated by the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). Locations of permitted and non-regulated hazardous waste sites have been identified through field visits in the spring of 2012 and a report generated by Environmental Data Resources, Inc. (EDR, 2012). Exhibit 7 shows the known and potential waste sites in relation to the Preferred Alternative.

Government databases used for identification of potential sites include:

1. CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) - The USEPA CERCLA listing tracks sites that have come to the

USEPA's attention as having potential for releasing hazardous substances into the environment. CERCLIS listings contain sites listed on the National Priorities List (NPL) as well as sites that have been proposed for possible inclusion.

2. NPL (National Priority List) - USEPA's NPL is a subset of the CERCLIS database. The NPL list includes sites designated under the Superfund Program.

3. NFRAP (USEPA Comprehensive Environmental Response, Compensation, and Liability Information System Archived Sites-No Further Remedial Action Planned) - Sites listed in this database are those for which, to the best of the USEPA's knowledge, assessment has been completed and no further remedial action (NFA) is planned. These sites are considered no longer eligible for inclusion on the NPL.

4. RCRIS (USEPA Resource Conservation and Recovery Information System) - This database lists facilities that generate, transport, treat, store, and/or dispose of hazardous waste materials and are required to provide information concerning their activities to state environmental agencies. RICRIS sites are divided into three categories: LQG (Large Quantity Generators), SQG (Small Quantity Generators), and TSD (Treatment, Storage or Disposal Facilities).

5. CORRACTS (USEPA RCRA Corrective Action Sites) - The USEPA CORRACTS database identifies hazardous waste handlers undertaking corrective action as directed by USEPA under RCRA.

6. ERNS (USEPA Emergency Response Notification System) - The USEPA ERNS serves to store information on releases of oil and hazardous substances into the environment. The USEPA National Response Center (NRC) is the origin of the data included in ERNS listings.

7. State Sites - The West Virginia Department of Protection (WV DEP) list of all hazardous waste inventory sites as maintained by the Division of Water and Waste Management (DWWM).

8. SWL (WV DEP Solid Waste Landfill List) - The WV DEP database listing of landfills and transfer stations as maintained by DWWM Landfill Section.

9. UST - The WV DEP database listing of all registered Underground Storage Tanks (USTs) as maintained by the DWWM UST (UST) Section.

10. LUST - The WV DEP database listing of all Leaking Underground Storage Tanks (LUSTs) as maintained by the DWWM LUST Section.

The EDR Report also lists a number of "orphan" sites that could not be analyzed because of missing or incorrect location information. Based on further review, it was found that the

majority of these sites are not located within standard search distances[2] from the Project Area.

Potential Hazardous Waste Sites

Basic information regarding locations and types of hazardous waste sites were gathered for appropriate ASTM search distances from the Preferred Alternative boundaries. Table 5 provides a list of these sites including the name and address of each site (circa 2011), data sources (e.g., state and federal databases under which the sites are listed), and distances from the Preferred Alternative boundaries.

Table 5: Potential Hazardous Waste Sites in Proximity to Preferred Alternative

Facility ID(s)	Database	Facility Type	Facility Name	Street Address	Distance from Preferred Alternative
RCRA-NonGen 1006931917 WVR000503664 FINDS 1007057261	RCRA-NonGen FINDS	Body Shop	Jack Kress Body Shop LLC	6712 Pike St, Mineral Wells, WV 26150	500 feet
RCRA-NonGen 1012190069 WVR000515965	RCRA-NonGen	Commercial Home Supply Store	PKB RVs	100 Sharon St, Parkersburg, WV 26150	450 feet
N/A (Observed)	N/A (Observed)	Muffler Shop	Muffler Shop	Oak Dale Dr	300 feet
RCRA-CESQG 1010339493 WVR000516674	RCRA-CESQG	Commercial Home Supply Store	LOWES Companies #2246	2 Walton Dr, Parkersburg, WV 26101	900 feet
N/A (Observed)	N/A (Observed)	Commercial Lumber Store	Carter's Lumber	6001 Pike St, Parkersburg, WV 26101	Adjacent
N/A (Observed)	N/A (Observed)	Commercial Store	Wal-Mart	Rte 14/ Old 21	500 feet
N/A (Observed)	N/A (Observed)	Unknown 1	Unknown 1	Unnamed industrial building, tan	800 feet
N/A	N/A	Gas Station	Gas Station	115 Elizabeth Pike,	0.95

[2] Recommended safety distances are specified by the American Society for Testing and Materials.

Facility ID(s)	Database	Facility Type	Facility Name	Street Address	Distance from Preferred Alternative
(Observed)	(Observed)		(Pifer's Service Center)	Mineral Wells, WV 26150	
N/A (Observed)	N/A (Observed)	Truck Stop	Truck Stop (Parkersburg)	County Rte/14/13	0.93
N/A (Observed)	N/A (Observed)	Commercial Wearhouse	Coldwater Creek Distribution Center	Coldwater Creek Dr, Mineral Wells, WV 26150	0.6 miles
LUST U003772130	LUST	Truck Stop	New Parkersburg Truck Stop	244 Frontage Rd, Mineral Wells, WV 26150	0.6 miles

Eleven (11) potential hazardous wastes sites were identified within a mile of the Preferred Alternative, with five (5) found through database searches within the specific ASTM search distances and six (6) identified during field activities. The only site either within the Preferred Alternative right-of-way or adjacent to it is a lumber supply store. Given the minimal hazards found within the Preferred Alternative boundaries, there is a low likelihood of encountering hazardous material with the Project.

Currently unknown hazards may exist and will be considered prior to and during construction. Former farm and rural setting residences were identified within the Preferred Alternative corridor with the potential for ASTs and USTs to be present. These tanks are typically used for heating, the on-site storage of chemicals associated with pesticides and herbicides, and fuel for equipment. While no specific sites were identified, if any ASTs and/or USTs are encountered within the Preferred Alternative, then they will be removed in accordance with applicable state and federal laws and regulations. As part of the removal of the USTs, an impact assessment consisting of soil and/or groundwater testing will be performed.

Additionally, because the proposed project includes structure demolition, some asbestos-containing materials may be encountered. Asbestos inspection, specification, notification, license, accreditation, abatement, and disposal, as applicable, would comply with federal and state regulations.

Coordination will occur with the utility and private owners of electrical transformers before and during construction for proper handling and removal of any transformers or pipes affected by the Preferred Alternative.

The contractor will take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction area. Any unanticipated hazardous materials and/or petroleum contamination encountered during construction will be handled according to applicable federal and state regulations for handling emergency discovery of hazardous materials.

3.5 Historic and Archaeological Resources

In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR 800, WVDOH, using the services of Michael Baker Jr., Inc. (Baker), identified historic and archaeological resources within the area of potential effects (APE) of the project and evaluated the potential impacts on identified resources. The following sections detail the survey findings and coordination with the State Historic Preservation Office (SHPO).

Archaeological Resources

Between February and December 2012, Baker archaeologists performed a geomorphological assessment and Phase I archaeological survey within the Preferred Alternative's APE, which was defined as the proposed right-of-way limits.

The survey included a geomorphological assessment of the low-lying floodplain at the Jackson Run stream crossing within the APE. The assessment revealed that while the potential for buried archaeological resources within the Jackson Run alluvial valley could not be ruled out, the poorly-drained floodplain sediments indicate that the valley floor would not be favorable for human occupation for any substantial interval. Further, if archaeological resources are contained within the Jackson Run floodplain sediments, they are likely the result of short-term, ephemeral occupations.

The archaeological survey of the APE included pedestrian reconnaissance of the entire APE and the hand excavation of 260 shovel test pits (STPs) in linear transects across testable portions of the APE demonstrating moderate to high probability for the presence of archaeological sites. The tested areas comprised 75 percent of the APE, while the remaining 25 percent was left untested because of steep slopes, extremely wet conditions within poorly drained soils, or disturbances from modern development.

One previously undocumented site was identified in the test areas. The site is associated with a currently occupied homestead established during the late 19th century. However, the site was recommended as not potentially eligible for inclusion in the National Register of Historic Places (NRHP) and no further work was recommended.

In correspondence dated April 24, 2013, the SHPO concurred with these recommendations and concluded that no further archaeological work is necessary for the Preferred Alternative of the WV 14 realignment project between Mineral Wells and Pettyville (Appendix C).

Historic Resources

Qualified Baker historians conducted a study to 1) identify all properties forty-five years of age or greater within the project's APE, 2) assess the NRHP eligibility of the identified

resources, and 3) assess potential impacts those resources. For historic resources, the APE was defined as all land areas that could include historic properties affected by the construction of any of the four project alternatives (Exhibit 3).

The background research conducted for this study found that 16 properties in the APE had been previously identified in the West Virginia Historic Property Inventory (WVHPI). The subsequent field survey found that five (5) of the 16 previously-surveyed resources have been demolished. Additionally, the background research found that there are no properties listed on the NRHP within the APE, and that no properties documented in the Historic American Building Survey (HABS) or Historic American Engineering Record (HAER) are located within the APE.

Previous surveyors recommended two (2) of the 11 remaining resources as eligible for the NRHP. Based on the results of the field survey conducted for this project, neither of these properties was recommended eligible for the NRHP, primarily because of loss of integrity.

The field survey of the APE identified 59 additional unrecorded resources 50 years of age or older (1963 and earlier). The evaluation of each historic resource is detailed in the Determination of Eligibility report (Baker, 2013a). None of the 59 resources was recommended as eligible for listing in the NRHP. With one exception detailed below, the SHPO concurred with the recommendations of the DOE report in a letter dated April 29, 2013 (Appendix C).

The SHPO requested additional study of the dairy barn associated with the Athey-Klamut House (Survey ID WD-4028) if it were to be impacted by the project. Although the barn is not located within the proposed right-of-way, WVDOH sought better understanding of the property because of its close proximity to the right-of-way and in the interest of more thorough coordination with the SHPO. In the summer of 2013, Baker conducted further study of the Athey-Klamut House and associated structures. The HPI form for the barn was expanded to include additional context, including more information about the dairying industry and the significance of the barn type (Figure 7).

While the recommendation for the Athey House itself remained as ineligible, Baker recommended the dairy barn as eligible for listing in the NRHP and provided a recommended NRHP boundary, which encompasses the well house and milk house (Figure 8).

Figure 7: Photographs from WVHPI Form MB-10A for the Athey & Sons Dairy Barn, showing the historic barn and a milk bottle from the dairy operation (Baker, 2013b)

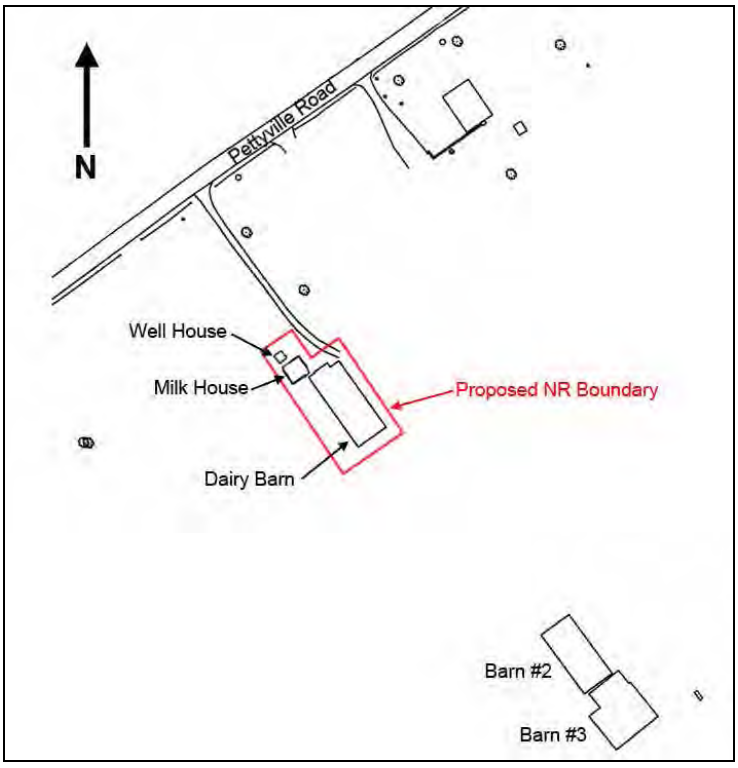

Figure 8: Proposed National Register of Historic Places boundary (Baker, 2013b).

With consideration for the recommended boundary, which is located 140 feet from the edge of the Preferred Alternative right-of-way, WVDOH determined that the barn will not be

impacted by the project. SHPO concurred with this finding and determined that no additional consultation regarding architectural resources is necessary in a letter dated December 9, 2013 (Appendix C).

3.6 Surface Waters and Floodplains

Surface Waters

The project area is located approximately one mile west of the Little Kanawha River and crosses two of its tributaries (Exhibit 8). The southern end of the alignment crosses Jackson Run west of WV14 and the northern terminus is located at the WV14 crossing of the Unnamed Tributary to the Little Kanawha River (Figure 9). Both streams were found to be perennial at the proposed crossing locations and both possessed jurisdictional characteristics as described in 2011 guidance drafted by the Environmental Protection Agency (USEPA) and the US Army Corps of Engineers (USACE) titled “Draft Guidance on Identifying Waters Protected by the Clean Water Act.”

Figure 9: Typical stream crossings in the Preferred Alternative ROW (Left - Jackson Run, Right - Unnamed Tributary to Little Kanawha River).

Prior to fieldwork, a desktop review of National Wetland Inventory (NWI) data did not reveal any wetlands within the Preferred Alternative right-of-way. Upon field review, the right-of-way was found to cross four (4) palustrine emergent (PEM) wetlands north of Oakdale Avenue (Exhibit 8). This former agricultural land was found to contain a network of springs, swales, and drainage ditches which have facilitated the development of associated wetlands (Figure 10). Although the channels lack the bed and bank to qualify as jurisdictional streams, the wetlands in this area appear to have surface connectivity to Jackson Run, and, therefore, are preliminarily considered to be jurisdictional (USEPA and USACE, 2011).

Although a formal jurisdictional determination has not been conducted, results of preliminary field assessments determined that there will be a total of 413 feet of stream impact and one acre of wetland impact with the Preferred Alternative. Of the stream crossings, 330 feet is impact to Jackson Run and 83 feet is impact to the Unnamed Tributary to Little Kanawha River. The streams will be culverted in these locations.

Impacts to jurisdictional resources will require the proper permitting through the appropriate state and federal agencies. Permits may include, but are not limited to, a USACE Permit under Section 404 of the Clean Water Act, West Virginia State Water Quality Certification under Section 401, and an NPDES Permit under Section 402. Resources within the Preferred Alternative right-of-way are not traditionally navigable and will not require a permit from the U.S Coast guard under Section 10 of the Clean Rivers and Harbors Act.

Any compensatory mitigation plan developed for this project will be consistent with the 2008 Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (33 CFR 332), and the compensatory mitigation plan will be submitted to the USACE with the Clean Water Act Section 404/401 permit application.

Figure 10: Left - Spring located in field adjacent to right-of-way; Right - Spring-fed PEM swale located within Preferred Alternative right of way.

Floodplains

As of April 2013, FEMA has made available a digital Flood Insurance Rate Map (DFIRM) for Wood County. The DFIRM Database consists of countywide vector files and associated attributes produced in conjunction with the hard copy FEMA FIRM. The FEMA DFIRM No. 5402130076A for Wood County indicates that the Preferred Alternative crosses 2.15 acres of the Jackson Run 100-year floodplain. Floodplains are shown on Exhibit 8.

Preliminary design includes a pipe to convey Jackson Run under the realigned WV 14. A detailed hydraulic analysis will be performed during the final design phase for the Preferred Alternative. The pipe will be designed such that the impact will not increase the 100-year flood elevation; therefore, installation of this stream crossing will not adversely impact the surrounding community.

3.7 Fish and Wildlife

Throughout the Project Area, the local relief is relatively low and land cover is dominated by mostly open residential lots with wooded fringe areas and a few maintained fields. Wooded areas that occur along property borders and in riparian areas have plant communities that are generally consistent with the outlying mixed mesophytic forests, while open areas are dominated by grasses and sedges.

The Preferred Alternative crosses a mix of upland, wetland, and stream habitats. The Preferred Alternative right-of-way encompasses 27.2 acres, approximately 86 percent of which is undeveloped (see Table 3 in Section 3.1). As currently designed, the Preferred Alternative right-of-way will impact 413 linear feet of stream and 0.99 acre of wetland (see Section 3.6).

Field assessments were conducted in the summer of 2012. Flowing water was not observed in most stream habitats, including most of Jackson Run through the Project Area. Available water was standing in pools. During these assessments, fish and benthic macroinvertebrates were not observed in the streams. However, it is likely that amphibian and reptile species utilize these stream and riparian habitats. Green frogs (*Rana clamitans melanota*) were observed around standing pools in stream channels. Wetland habitats are likely host to similar species. The ponded areas in the right-of-way could potentially support fish, small mammals, and waterfowl.

Although the majority of the Preferred Alternative right-of-way (approximately 86%) is undeveloped, the majority of the available upland habitat is immediately adjacent to residential activity. The alignment remains to the eastern boundary of a large contiguous swath of undeveloped land (fallow farmland), and thereby avoids fragmenting that upland habitat. Although the right-of-way is dotted with patches of trees, the Project Area lacks contiguous forested habitat. Wildlife species found in the proposed right-of-way most likely is dominated by species typically associated with residential development (e.g., mice, squirrels, and a limited number of bird species).

WVDOH has coordinated with resource agencies with regard to assessment of impacts to wildlife and protected species, including species Federally listed as rare, threatened, or endangered (RTE). Given the limited areal disturbance proposed with the project, the proximity to developed land, and the availability of higher quality habitat to the west of the project, WVDOH has concluded that the project is not likely to have adverse effect on wildlife, nor, more specifically, on any protected species.

The West Virginia Division of Natural Resources (WVDNR) responded to WVDOH in a letter dated June 5, 2013 that their records indicated no known occurrences of RTE species or natural trout streams in the project area. In correspondence signed June 14, 2013, USFWS concluded that the project will not impact Federally-listed species and that no further Section 7 consultation is required (Appendix D).

Additionally, WVDOH has coordinated with the USFWS regarding the northern long-eared bat (*Myotis septentrionalis*) (NLEB), which is proposed for listing as endangered (Federal Register Proposed Rules Vol. 78, No. 191, October 2, 2013). In an email dated March 5, 2014, the USFWS concurred that this project will have “no effect” on the NLEB (Appendix D).

3.8 Air Quality

Introduction

Transportation projects can create localized impacts on air quality through the changes they introduce to the volume, location and character of motor vehicle traffic. The frequency and magnitude of these impacts, which manifest themselves as health risks and a general decreased quality of life, can be identified through monitoring and projected through modeling.

The Federal Clean Air Act (CAA) and its subsequent Amendments have established specific procedures and limitations for evaluating transportation projects in designated air quality nonattainment areas. These procedures, generally referred to as the "conformity regulations," are outlined in 42 USC Part 7401 (et. seq.) and are further detailed in Federal regulations (40 CFR Part 93).

Seven criteria pollutants of the CAA are considered for potential air quality issues. The corresponding National Ambient Air Quality Standards (NAAQS) for these pollutants are applied as the criteria for evaluating proposed projects and actions. These criteria are shown in Table 6. Of the NAAQS pollutants, only O_3, CO, and PM are currently of concern to mobile sources (motor vehicles).

Table 6: National Ambient Air Quality Standards (NAAQS)

Pollutant *[final rule citation]*		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide *[76 FR 54294, Aug 31, 2011]*		Primary	8-hour	9 ppm	Not to be exceeded more than once per year
			1-hour	35 ppm	
Lead [73 FR 66964, Nov 12, 2008]		Primary and Secondary	Rolling 3 month average	0.15 µg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide *[75 FR 6474, Feb 9.2010]* *[61 FR 52852, Oct 8, 1996]*		Primary	1-hour	100 µg/m^3	98th percentile, averaged over 3 years
		Primary and Secondary	Annual	53 ppb (2)	Annual mean
Ozone *[73 FR 16436, Mar 27, 2008]*		Primary and Secondary	8-hour	0.075-hour (3)	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Pollution Dec 14, 2012	$PM_{2.5}$	Primary	Annual	12 µg/m^3	Annual mean, averaged over 3 years
		Secondary	Annual	15 µg/m^3	Annual mean, averaged over 3 years

Pollutant *[final rule citation]*		Primary/ Secondary	Averaging Time	Level	Form
		Primary and Secondary	24-hour	35 µg/m^3	98th percentile, averaged over 3 years
	PM_{10}	Primary and Secondary	24-hour	150 µg/m^3	Not to be exceeded more than once per years on average over 3 years
Sulfur Dioxide *[75 FR 35520, Jun 22, 2010]* *[38 FR 25678, Sept 14, 1973]*		Primary	1-hour	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Source: USEPA; December 14, 2012

[1] Final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[2] The official level of the annual NO_2 standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

[3] Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, EPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard ("anti-backsliding"). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.

[4] Final rule signed June 2, 2010. The 1971 annual and 24-hour SO_2 standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

Conformity and Project Level Analysis

According to EPA, Wood County is designated as a nonattainment area for the $PM_{2.5}$ (1997 standard). In 2009, EPA determined that the West Virginia portion of this nonattainment area for the 1997 fine particulate ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) has clean data for the 1997 $PM_{2.5}$ NAAQS. (74 FR Page 38154)

The county is also designated as a maintenance area for 8-hour ozone (Former Subpart 1, redesignated 6/7/07) with a federally approved maintenance plan. It is in attainment for the other NAAQS pollutants.

FHWA, EPA and WVDOH guidance and regulations were followed in the assessment. The potential for air quality impacts were documented on a regional and project level. The

greatest 2012 annual average daily traffic (AADT) is approximately 10,950 vehicles per day for (vpd). It is predicted to increase to 15,350 vpd in the design year (2032) no-build condition and will decrease on the existing roadway as a result of the diverted traffic. The relocated WV 14 predicted design year build AADT is approximately 14,700 vpd.

Ozone (O_3)

The proposed project is listed in the Wood-Washington-Wirt Interstate Planning Commission Transportation Improvement Program (2012-2015) as approved in 2011 and in the 2035 Long Range Plan (WWW-IPC, 2011 and 2013b). The project ID is STP-0014 (112 and 113) D. The last air quality conformity analysis report was completed in 2005. No further analysis is required.

Carbon Monoxide (CO)

The proposed project is in an area designated as being in attainment of the CO standard. For CO project level requirements, the CAA Amendments do not require a CO analysis for an attainment area; however, NEPA still requires that the impacts of the proposed project be analyzed to document why the proposed action will not cause an impact to the NAAQS for CO.

Traffic volumes were developed by Baker and approved by WVDOH. As mentioned, the current AADT of the roadway is approximately 10,950 vpd. The predicted design year build alternative AADT is 14,700 vpd.

The proposed action will connect a four-lane section to the south with a three-lane section to the north (including center turn lane) and a four-lane section to the south. There are no signalized intersections that will be LOS D or worse, and based on the predicted AADT of 14,700, it is highly unlikely that the project will cause a CO impact. This assessment is founded on other highway project experience. These results also reflect AADT exemption levels that are more than double the design year WV 14 AADT and LOS exemptions as high as LOS E. Furthermore, there are no current nonattainment areas in the United States.

Based on the available information, the proposed action will not cause an impact to the NAAQS for CO. No further action is needed.

Particulate Matter ($PM_{2.5}$)

The proposed project is in an area designated as being in nonattainment of the $PM_{2.5}$ standard. For projects located in nonattainment areas, EPA issued “Transportation Conformity Guidance for Quantitative Hot-Spot Analysis in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas” (12/2010). This project was started during the two-year grace period prior to the 12/2012 end date; therefore, the 2010 guidance was applied. A PM hot-spot analysis is not required for projects that are not of local air quality concern.

Applicable to this project, Section 93.123(b)(1) of the conformity rule defines the projects that require a $PM_{2.5}$ hot-spot analysis as:

1. New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles, and;

2. Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.

The predicted design year build AADT is 14,700 with a one percent diesel heavy truck volume. The FHWA AADT criteria is 125,000 with a maximum of 8 percent (10,000) diesel trucks per day. Furthermore, there are no signalized intersections predicted to be LOS D or worse in any condition or analysis year, nor is there a predicted change to the diesel truck percentage. Therefore, the proposed action is not a “Project of Air Quality Concern” and will not adversely affect $PM_{2.5}$.

Mobile Source Air Toxics (MSAT)

The USEPA, under the CAA Amendments, has the authority to regulate hazardous air pollutants, or air toxics. Of the 188 hazardous air pollutants, 93 are known to come from mobile sources and are designated as Mobile Source Air Toxics (MSATs). MSATS are toxic chemical compounds that are emitted from both on and off-road vehicles that are known or thought to cause harmful health or environmental effects. Seven of these MSATs, including acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter, are known to contribute significantly to an increased risk of cancer.

FHWA (2012) has provided interim guidance on addressing MSATs in the NEPA analysis through Memorandum HEPN-10: Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA. This report includes an update to the basic analysis of the likely MSAT emission impacts of the proposed project. A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. However, available technical tools do not enable FHWA to predict the project-specific health impacts of the emission changes associated with the Preferred Alternative. Because of these limitations, the following discussion is included in accordance with CEQ regulations (40 CFR §1502.22(b)) regarding incomplete or unavailable information.

Information that is Unavailable or Incomplete

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in

the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

Regarding air dispersion modeling, an extensive evaluation of USEPA's guideline CAL3QHC model was conducted in a National Cooperative Highway Research Program study, which documents poor model performance at ten sites across the country – three where intensive monitoring was conducted plus an additional seven with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections. The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for demonstrating compliance with NAAQS for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The USEPA and the Health Effects Institute (HEI), which studies the human health effects of MSATs, have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the CAA to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than one in a million due to emissions from a source. The results of this statutory two-step process do not

guarantee that cancer risks from exposure to air toxics are less than one in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs

The USEPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the CAA and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSATs. The USEPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. The USEPA maintains the Integrated Risk Information System (IRIS), which is “a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects.” Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSATs, including HEI. Two HEI studies are summarized in Appendix C of FHWA’s Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA (12/2012). Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations, or in the future as vehicle emissions substantially decrease.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Analysis Summary

The MSAT analysis is based on FHWA’s Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA (12/2012). The FHWA has developed a tiered approach for analyzing MSATs in NEPA documents. Depending on the specific project circumstances, FHWA identified three levels of analysis:

- No analysis for projects with no meaningful potential MSAT effects;

- Qualitative analysis for projects with low potential MSAT effects;
- Quantitative analysis for projects with higher potential MSAT effects.

The proposed action is a “Project with No Meaningful Potential MSAT Effects.” Three types of projects are included in this category:

- Projects qualifying as a categorical exclusion under 23 CFR 771.117(c);
- Projects exempt under the CAA Conformity rule under 40 CFR; and
- Other projects with no meaningful impacts on traffic volumes or vehicle mix.

This project is classified as “Other projects with no meaningful impacts on traffic volumes or vehicle mix.” For other projects with no or negligible traffic impacts, regardless of the class of NEPA environmental document, no MSAT analysis is required. However, the project record should document the basis for the determination of "no meaningful potential effects" with a brief description of the factors considered. The qualitative assessment is presented in the following paragraphs.

The amount of MSAT emitted would be proportional to the vehicle miles traveled (VMT), assuming that other variables such as fleet mix are the same for each alternative. The estimated VMT with the Preferred Alternative is slightly higher than that for the No-Build Alternative, because the bypass would slightly increase the travel distance between north and south project construction limits termini and may facilitate new development that attracts trips that would not otherwise occur in the area. This increase in VMT means MSAT under the chosen Preferred Alternative will probably be higher than the No-Build Alternative in the study area. There could also be localized differences in MSAT from indirect effects of the project such as associated access traffic, emissions of evaporative MSAT (e.g., benzene) from parked cars and emissions of diesel particulate matter from delivery trucks. Travel to other destinations would be reduced with subsequent decreases in emissions at those locations.

For the Preferred Alternative, emissions are virtually certain to be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by 83 percent from 2010 to 2050 (Figure 11). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future than they are today. Therefore, this project has been determined to generate minimal air quality impacts for CAA Amendments criteria pollutants and has not been linked with any special MSAT concerns.

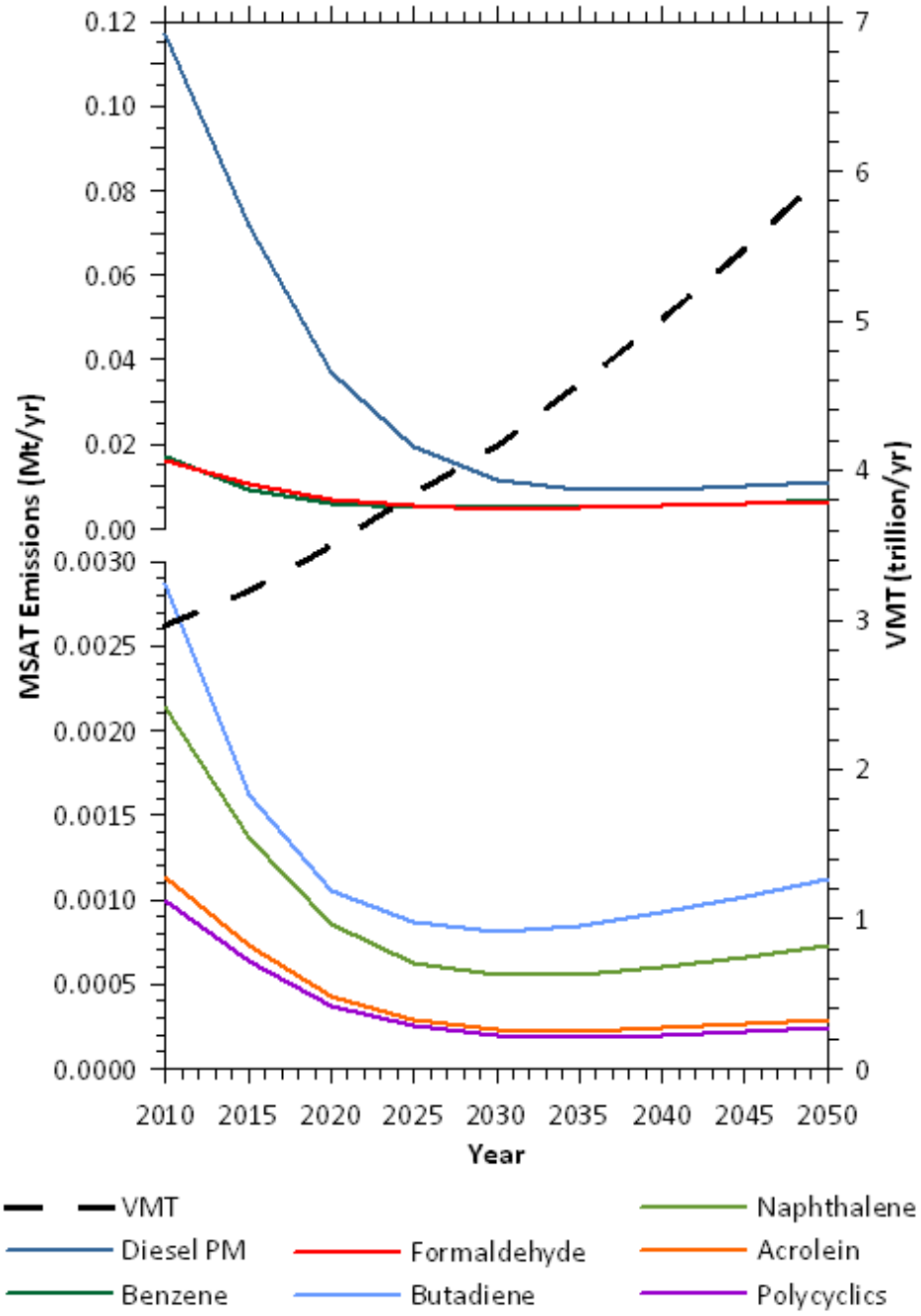

Figure 11: National MSAT Emission Trends 2010-2050
for Vehicles Operating on Roadways Using EPA's MOVES2010b Model

Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

Source: EPA MOVES2010b model runs conducted during May - June 2012 by FHWA.

Greenhouse Gases (GHG) and Climate Change

Transportation sources contribute to GHG through the burning of petroleum-based fuel. According to the FHWA, transportation sources are responsible for approximately one-quarter of the GHG emissions in the U.S. Under the CAA, the EPA has the authority to establish motor vehicle emissions standards for CO_2 and other GHGs, although such standards have not yet been established as part of the NAAQS. FHWA is actively involved in efforts to initiate, collect, and disseminate climate-change-related research and to provide technical assistance; however, FHWA does not believe it is informative to consider greenhouse gas emissions in this EA. FHWA will continue to pursue these efforts as productive steps to address this important issue. FHWA will review and update its approach to climate change at both the project and policy level as more information emerges and as policies and legal requirements evolve. Discussions regarding greenhouse gas emissions are ongoing.

3.9 Noise

A noise analysis was undertaken to evaluate the possible impacts from the proposed project. The analysis followed WVDOH 2011 Noise Policy guidelines. The following section identifies basic noise fundamentals, noise sensitive locations near the existing and proposed future WV 14, impact criteria, analysis procedures, and results of modeling the existing condition and design year alternatives. The analysis includes a comparison of predicted impacts and noise abatement measures, if applicable. Finally, this section includes discussion of construction noise impact, future noise abatement, and coordination.

Fundamentals of Sound and Noise

Sound is the vibration of air molecules in waves similar to ripples on water. When these vibrations (or sound waves) reach our ears, we hear what we call sound. These sound waves are produced by objects which move back and forth very rapidly, such as vocal chords when we speak. The rate at which these objects move is called their frequency. Noise is defined as unwanted sound.

The intensity or loudness of sound is measured in units called decibels (dB). However, since the human ear does not hear sound waves of different frequencies at the same subjective loudness, an adjustment or weighting of the high-pitched and low-pitched sounds is often made to approximate average human perception. When such adjustments to the sound levels are made, they are called “A-weighted levels” and are labeled “dBA”. Figure 12 illustrates some common A-weighted noise levels.

The dBA scale for measuring sound intensity is based on logarithmic or sound level pressure relative to a reference pressure. Logarithmic scales are based on powers of ten and are not linear (like a ruler). As a result, sound level additions are hard to define. For example, if a 60 dBA sound is added to another 60 dBA sound, the resulting sound is 63 dBA and not 120 dBA. Also, a 10 dBA sound level increase is equivalent to a person hearing a doubling of the sound level. This means that 60 dBA sounds twice as loud as 50 dBA. Changes in sound levels are considered readily noticeable when the difference is 5 dBA, while a change of 2 to 3 dBA is barely perceivable by the typical human ear (FHWA, 1980).

Additionally, the level of highway traffic noise is never constant; therefore, it is necessary to use a statistical descriptor to describe the varying traffic noise levels. The equivalent continuous sound level (Leq) (h) dBA is the statistical descriptor used in this report. The Leq sound level is the steady A-weighted sound energy which would produce the same A-weighted sound energy over a stated period of time (one hour or “h”, in this case) as a specified time-varying sound.

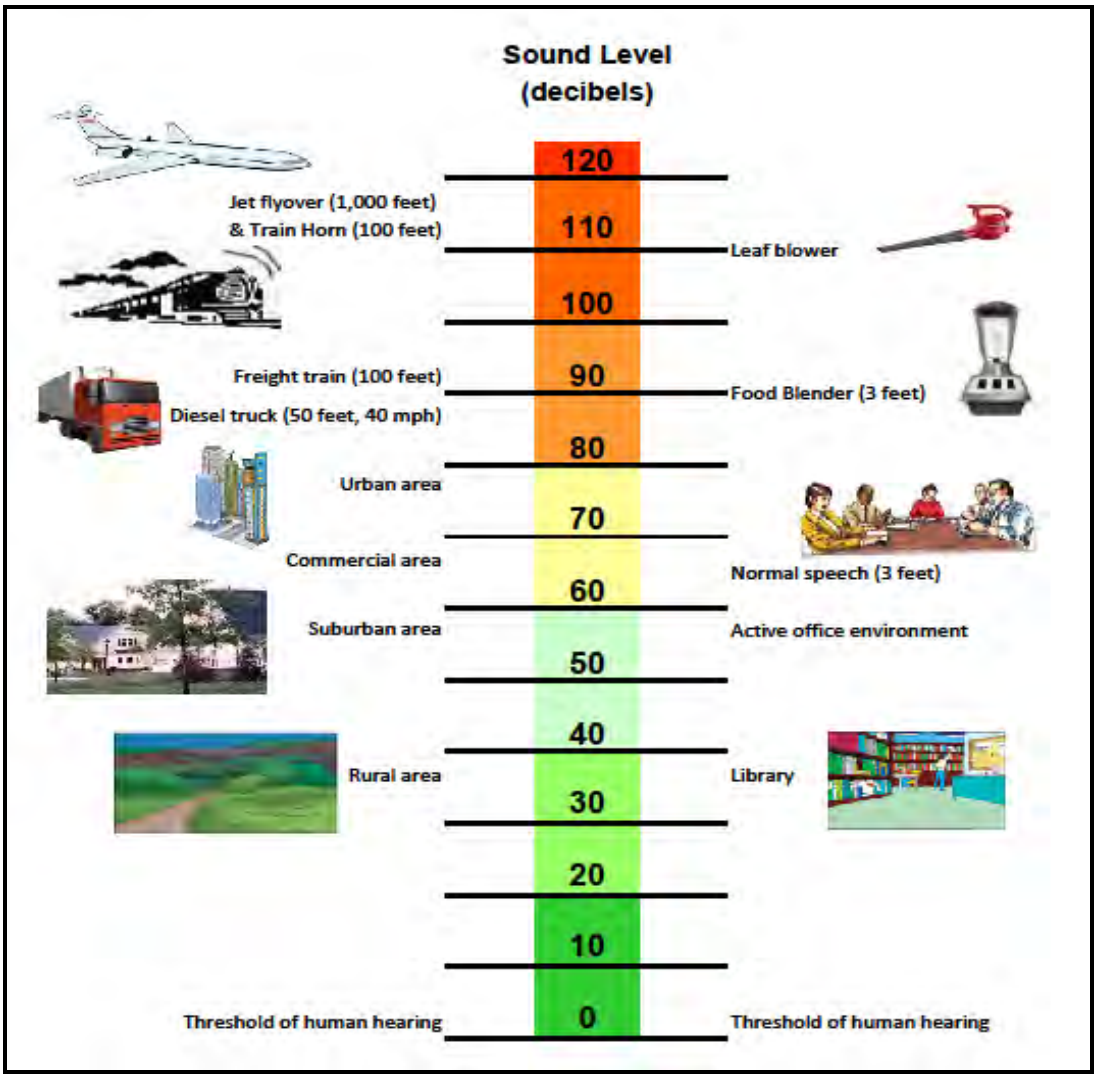

Figure 12: Common Outdoor and Indoor Sound Levels

Noise Impact Criteria

A traffic noise impact occurs when the predicted levels approach the Noise Abatement Category criteria (NAC) or when predicted traffic noise levels substantially exceed the existing noise level, even though the predicted levels may not exceed the NAC. "Approach" means within one dBA (Leq) of the NAC. Table 7 provides a description of the NAC. The term “substantially exceed the existing noise levels" is defined as an increase of 15 dBA or greater over the existing condition.

The Project Area land use consists primarily of residential use in addition to open land, places of worship and several commercial retail businesses.

Table 7: Noise Abatement Criteria

Activity Category	L_{eq} (h) dBA	Description of Land Use Category
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Residential.
C	67 (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A, B or C.
F	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.

Source: 23 CFR 772.

Noise Level Measurements

Seven (7) field measurements were taken to validate the sound levels in the Noise Sensitive Areas. The monitoring sites were chosen to be representative of the noise sensitive land uses adjacent to the project alternatives and are characteristic of the existing background sound levels within the study area. The results of the field measurement program are shown in Table 2. The measured and monitored levels are within 3.0 dBA of each other. Therefore, the model is considered to be valid.

Table 8: Measured Ambient Sound Levels (dBA)

Site	Location	Land Use (NAC)	Field Measured Sound Levels		Difference (dBA)	Primary Noise Sources
			Measured	Validated		
M-1	Multi-family residences - WV14 near Sharon Street (modeled receptor #141)	B	53.6	54.5	-0.9	WV 14, neighborhood activities
M-2	Single Family residences Oakdale Avenue (modeled receptor #168)	B, F	45.5	N/A	-	Oakdale Avenue, WV 14 (distant), neighborhood activities
M-3	Single Family residences -WV14 near Manor Drive (modeled receptor #174)	B, F	57.6	58.0	-0.4	WV 14, neighborhood activities
M-4	Single Family residences west of Delaware Street (modeled receptor #190)	B, G	41.8	N/A	-	Neighborhood activities, WV 14 (distant) - mostly undeveloped land.
M-5	Single Family residences west of Delaware Street (between modeled receptors #18 and 31)	B, F	57.8	59.9	-2.1	WV 14
M-6	Single Family residences on Lost Pavement Road, west of WV14 (modeled receptor #212)	B	49.9	N/A	-	Lost Pavement Road, WV 14 (distant), neighborhood activities
M-7	Church - WV14 (modeled receptor #225)	B, C	60.2	62.3	-2.1	WV 14

Notes: N/A = Not Applicable as a result of zero or too few vehicular pass-by's for validation. Nonetheless, these field measurements were used to define the existing sound level environment in lieu of highway traffic.

Noise Level Estimates

Estimates of the exterior noise levels at sensitive receptors in the vicinity of the proposed project were based on the FHWA TNM2.5 computer model. Sound levels were modeled for the existing year, design year no-build, and design year build alternative. In making these estimates, the traffic volume, speed, fleet mix and elevation/terrain differences were considered.

Traffic

Paragraph b, Section 772.17 of 23 CFR 772 says that, “in predicting noise levels and assessing noise impacts, traffic characteristics which will yield the worst hourly traffic noise impact on a regular basis for the design year shall be used.” Since the level of highway traffic noise is normally related to the traffic volume, the traffic characteristics which will yield the worst hourly traffic noise impact on a regular basis for the design year will be the average daily peak hour traffic volumes. The traffic data used in the analysis was approved by WVDOH.

Existing (2012) Noise Environment

Two-hundred and thirty-six (236) receptor sites were analyzed in the immediate vicinity of the project. There were four were places of worship and one recreation facility (on church property), and the rest were residential dwelling units. There were four receptors with existing noise levels approaching or exceeding the WVDOT criteria, all residential. Table 9 shows the predicted decibel levels, and Exhibit 9 shows the receptor locations. Decibel levels have been rounded.

Design Year (2032) No-Build Alternative Environment

The year 2032 No-Build Alternative Leq sound levels are predicted to increase generally by approximately 1+ dBA over the existing sound level environment. The ADT volumes are predicted to increase by approximately 40 percent as a result of expected growth from 2012 to 2032. The K factor was ten percent, the heavy truck percentage was one percent, and the medium truck percentage was two percent based on vehicle classification counts and approval by WVDOH.

There were eight receptors, all residential, with predicted design year noise levels approaching or exceeding the criteria. Table 9 shows the predicted decibel levels, and Exhibit 9 shows the receptor locations.

Design Year (2032) Build Alternative Environment

Table 9 shows the predicted decibel levels and Exhibit 9 shows the receptor locations. All of the impacted receptors are residential, except for receptor 226, the outdoor church picnic area.

For the Preferred Alternative, there was one (1) NAC criteria impact, four (4) substantial increase impacts and three (3) that were both types of impacts. The NAC impact is receptor 230. The substantial increase impacts are receptors 171, 190, 219 and 220. The locations with both impacts are receptors 210, 212 and 226. The average increase over the existing condition for all receptors is approximately 3 dBA. The average increase over the design year No-Build condition is approximately 1 dBA.

Table 10 shows a comparison of the total predicted noise impacts with the No-Build and Preferred Alternative.

Table 9: Predicted Sound Levels (dBA)

Receptor Number	Land Use*	NAC	Impact Criteria	Existing Year 2012	2032 No-Build Alternative	2032 Preferred Alternative
1	Residence	B	66	60	62	(displaced)
2A	Residence	B	66	60	61	57
2	Residence	B	66	60	61	57
3	Residence	B	66	56	58	56
4	Church-related bldg.	D	51	<40	<40	<40
5	Church-WV14	D	51	<40	<40	<40
6	Residence	B	66	63	64	58
7	Residence	B	66	49	50	48
8	Residence	B	66	46	47	47
9	Residence	B	66	44	45	45
10	Residence	B	66	42	44	44
11	Residence	B	66	41	42	41
12	Residence	B	66	42	44	43
13	Residence	B	66	45	46	45
14	Residence	B	66	47	48	46
15	Residence	B	66	49	51	48
16	Residence	B	66	52	54	50
17	Residence	B	66	**67**	**68**	61
18	Residence	B	66	**66**	**68**	61
19	Residence	B	66	43	44	44
20	Residence	B	66	44	45	44
21	Residence	B	66	44	46	45
22	Residence	B	66	43	44	45
23	Residence	B	66	45	46	45
24	Residence	B	66	42	44	45
25	Residence	B	66	44	45	46
26	Residence	B	66	46	47	46
27	Residence	B	66	47	48	48
28	Residence	B	66	50	52	49
29	Residence	B	66	52	54	51
30	Residence	B	66	52	54	51
31	Residence	B	66	**66**	**67**	60

Receptor Number	Land Use*	NAC	Impact Criteria	Existing Year 2012	2032 No-Build Alternative	2032 Preferred Alternative
32	Residence	B	66	57	59	52
33	Residence	B	66	50	51	50
34	Residence	B	66	45	46	47
35	Residence	B	66	43	44	45
36	Residence	B	66	41	43	43
37	Residence	B	66	41	42	43
38	Residence	B	66	42	43	44
39	Residence	B	66	47	48	48
40	Residence	B	66	50	52	50
41	Residence	B	66	53	54	50
42	Residence	B	66	**67**	**68**	61
43	Residence	B	66	63	65	58
44	Residence	B	66	61	63	57
45	Residence	B	66	54	55	52
46	Residence	B	66	49	50	49
47	Residence	B	66	47	48	47
48	Residence	B	66	46	47	48
49	Residence	B	66	44	46	47
50	Residence	B	66	42	43	44
51	Residence	B	66	43	45	46
52	Residence	B	66	46	47	48
53	Residence	B	66	47	48	51
54	Residence	B	66	48	49	51
55	Residence	B	66	48	49	49
56	Residence	B	66	60	61	56
57	Residence	B	66	65	**66**	59
58	Residence	B	66	51	52	46
59	Residence	B	66	52	54	52
60	Residence	B	66	62	63	57
61	Residence	B	66	51	53	52
62	Residence	B	66	49	50	49
63	Residence	B	66	42	44	41
64	Residence	B	66	42	44	44

Receptor Number	Land Use*	NAC	Impact Criteria	Existing Year 2012	2032 No-Build Alternative	2032 Preferred Alternative
65	Residence	B	66	45	46	47
66	Residence	B	66	48	49	48
67	Residence	B	66	49	50	50
68	Residence	B	66	51	53	51
69	Residence	B	66	53	55	51
70	Residence	B	66	65	**66**	59
71	Residence	B	66	65	**66**	61
72	Residence	B	66	50	51	51
73	Residence	B	66	47	48	49
74	Residence	B	66	46	47	48
75	Residence	B	66	44	46	46
76	Residence	B	66	46	47	48
77	Residence	B	66	48	49	50
78	Residence	B	66	49	50	50
79	Residence	D	51	<40	<40	<40
80	Residence	B	66	52	54	51
81	Residence	B	66	57	59	55
82	Residence	B	66	61	63	58
83	Residence	B	66	53	55	53
84	Residence	B	66	49	51	50
85	Residence	B	66	47	48	49
86	Residence	B	66	45	47	48
87	Residence	B	66	43	45	44
88	Residence	B	66	45	47	46
89	Residence	B	66	46	48	48
90	Residence	B	66	50	52	52
91	Residence	B	66	53	55	55
92	Residence	B	66	57	58	58
93	Residence	B	66	56	57	58
94	Residence	B	66	53	54	55
95	Residence	B	66	49	50	51
96	Residence	B	66	45	47	47
97	Residence	B	66	46	48	48

Receptor Number	Land Use*	NAC	Impact Criteria	Existing Year 2012	2032 No-Build Alternative	2032 Preferred Alternative
98	Residence	B	66	47	49	50
99	Residence	B	66	57	59	59
100	Residence	B	66	57	59	59
101	Residence	B	66	55	56	56
102	Residence	B	66	56	58	58
103	Residence	B	66	53	54	55
104	Residence	B	66	50	51	53
105	Residence	B	66	49	51	53
106	Residence	B	66	49	50	52
107	Residence	B	66	49	50	52
108	Residence	B	66	48	50	51
109	Residence	B	66	48	50	51
110	Residence	B	66	48	49	51
111	Residence	B	66	47	49	50
112	Residence	B	66	46	48	49
113	Residence	B	66	46	48	50
114	Residence	B	66	47	48	50
115	Residence	B	66	47	49	50
116	Residence	B	66	47	49	51
117	Residence	B	66	47	48	50
118	Residence	B	66	47	48	50
119	Residence	B	66	47	48	50
120	Residence	B	66	46	47	50
121	Residence	B	66	47	48	50
122	Residence	B	66	46	48	50
123	Residence	B	66	46	48	50
124	Residence	B	66	46	47	50
125	Residence	B	66	46	47	50
126	Residence	B	66	46	47	49
127	Residence	B	66	46	47	49
128	Residence	B	66	46	47	49
129	Residence	B	66	44	46	49
130	Residence	B	66	45	47	50

Receptor Number	Land Use*	NAC	Impact Criteria	Existing Year 2012	2032 No-Build Alternative	2032 Preferred Alternative
131	Residence	B	66	45	46	48
132	Residence	B	66	39	41	52
133	Residence	B	66	50	52	54
134	Residence	B	66	53	55	58
135	Residence	B	66	54	56	59
136	Residence	B	66	56	57	62
137	Residence	B	66	51	53	55
138	Residence	B	66	50	52	54
139	Residence	B	66	47	48	51
140	Residence	B	66	48	49	52
141	Residence	B	66	56	58	57
142	Residence	B	66	53	54	61
143	Residence	B	66	61	62	58
144	Residence	B	66	60	62	57
145	Residence	B	66	54	55	56
146	Residence	B	66	50	51	59
147	Residence	B	66	47	48	(displaced)
148	Residence	B	66	47	49	(displaced)
149	Residence	B	66	46	48	(displaced)
150	Residence	B	66	46	46	59
151	Residence	B	66	46	46	53
152	Residence	B	66	46	46	56
153	Residence	B	66	46	47	58
154	Residence	B	66	46	46	54
155	Residence	B	66	46	46	51
156	Residence	B	66	46	46	50
157	Residence	B	66	46	46	46
158	Residence	B	66	46	46	46
159	Residence	B	66	46	46	48
160	Residence	B	66	46	46	49
161	Residence	B	66	46	46	50
162	Residence	B	66	46	46	49
163	Residence	B	66	46	46	50

Receptor Number	Land Use*	NAC	Impact Criteria	Existing Year 2012	2032 No-Build Alternative	2032 Preferred Alternative
164	Residence	B	66	46	46	50
165	Residence	B	66	46	46	51
166	Residence	B	66	46	46	54
167	Residence	B	66	46	46	53
168	Residence	B	66	46	46	57
169	Residence (and new storage business)	B	66	46	47	(displaced)
170	Residence	B	66	46	48	(displaced)
171	Residence	B	66	47	49	**63**
173	Residence	B	66	50	51	57
174	Residence	B	66	63	64	57
175	Residence	B	66	55	56	54
176	Residence	B	66	50	52	56
177	Residence	B	66	50	52	56
178	Residence	B	66	49	50	56
179	Residence	B	66	48	50	56
180	Residence	B	66	50	52	56
181	Residence	B	66	52	53	56
182	Residence	B	66	55	57	57
183	Residence	B	66	54	55	56
184	Residence	B	66	55	56	55
185	Residence	B	66	57	59	55
186	Residence	B	66	65	**66**	59
187	Residence	B	66	60	61	55
188	Residence	B	66	52	53	54
189	Residence	B	66	45	47	48
190	Residence	B	66	44	45	**65**
191	Residence	B	66	44	46	55
192	Residence	B	66	44	45	56
193	Residence	B	66	44	45	56
194	Residence	B	66	44	46	56
195	Residence	B	66	52	54	56
196	Residence	B	66	57	59	53

Receptor Number	Land Use*	NAC	Impact Criteria	Existing Year 2012	2032 No-Build Alternative	2032 Preferred Alternative
197	Residence	B	66	60	62	55
198	Residence	B	66	52	53	54
199	Residence	B	66	63	64	58
200	Residence	B	66	50	52	55
201	Residence	B	66	44	43	58
202	Residence	B	66	44	46	56
203	Residence	B	66	46	48	55
204	Residence	B	66	61	63	57
205	Residence	B	66	47	48	55
206	Residence	B	66	47	47	58
207	Residence	B	66	49	51	56
208	Residence	B	66	48	48	57
209	Residence	B	66	48	48	61
210	Residence	B	66	50	50	**67**
211	Residence	B	66	50	50	(displaced)
212	Residence (farm)	B	66	50	50	**67**
213	Residence	B	66	50	50	50
214	Residence	B	66	50	50	50
215	Residence	B	66	50	50	50
216	Residence	B	66	49	49	51
217	Residence	B	66	49	49	53
218	Residence	B	66	48	48	53
219	Residence	B	66	47	47	**65**
220	Residence	B	66	48	48	**64**
221	Residence	B	66	49	50	58
222	Residence	B	66	57	59	57
223	Residence	B	66	60	61	58
224	Residence	B	66	54	55	59
225	Church - WV 14	D	<40	<40	<40	41
226	Church - Outdoor Pavilion	C	66	50	51	**67**
227	Residence	B	66	48	50	(displaced)
228	Residence	B	66	46	48	(displaced)

Receptor Number	Land Use*	NAC	Impact Criteria	Existing Year 2012	2032 No-Build Alternative	2032 Preferred Alternative
229	Residence	B	66	61	62	(displaced)
230	Residence	B	66	55	57	**68**
232	Residence	B	66	59	61	(displaced)
233	Residence	B	66	49	50	62
234	Residence	B	66	45	47	55
235	Residence	B	66	43	45	53
236	Residence	B	66	56	58	(displaced)

Notes: Some of the structures listed as "Residence" also have businesses located on the same site and/or building. However, because the residences have a stricter noise criterion, the residential criterion was applied to provide a worst case scenario for impact calculation.

Table 10: Comparison of Predicted Impacts by Alternative

Receptor (Land Use) Type	2012	2032 No-Build	2032 Preferred Alternative
Residences (Single and Multi-Family)	4	8	7
Churches (Places of Worship)	0	0	0
Schools	0	0	0
Parks or Recreation Facilities	0	0	1
Totals:	4	8	8

Traffic Noise Abatement

The FHWA and WVDOH specifies several types of mitigation to be studied for areas warranting noise abatement consideration such as traffic management measures, changes in horizontal and vertical alignment, sound insulation for public institutions, additional acquisition for abatement features, and noise barriers. Each of these measures was investigated as described in the following sections.

Traffic Management Measures

Traffic management measures that have been considered for this project are reductions in speed and truck restrictions on the proposed Build Alternatives. Neither would be considered an effective mitigation measure. A substantial decrease in speed would be needed to provide a noticeable sound level reduction because a 10 mph speed reduction would result in only a 2 dBA decrease in sound levels. Furthermore, the enforcement of lower speeds in this

corridor is not a practical or effective solution for noise control. Truck restrictions would not accomplish the goal of moving people and goods effectively in the area.

Horizontal/Vertical Realignment

The build alternative is bound by the required engineering limitations with the roadway design as well as incorporating abutting property lines. It was also developed to minimize and/or avoid impacts to potentially sensitive areas and to reduce/eliminate right-of-way acquisition. Any significant sound level reductions at impacted locations as a result of horizontal modifications would require large shifts in the alignment and might also require realigning the interchange ramp alignments for proper radii, potentially taking out more residences.

Vertical alignment alteration is also typically not considered to be a feasible noise abatement measure. As mentioned, the build alternative was developed to minimize impacts. The complexity of the interchanges and cross-streets to the connector road design would preclude any possible notable sound level reductions, if any could be achieved at all.

Nonetheless, it will be suggested that in areas where there were predicted impacts that the roadway be lowered in elevation to minimize the noise impacts as long as the design engineering remains acceptable from a construction standpoint (i.e., tops and toe of slope locations, connections to cross-streets, utilities and drainage.

Sound Insulation for Public Institutions

There were no interior sound levels at public institution receptors (Category D) that were impacted as a result of the proposed alternatives.

Acquisition for Abatement Features / Buffers

Generally, WVDOH (or the responsible agency for the project) would build reasonable and feasible mitigation within the acquired right-of-way. The acquisition of property to serve as future buffer zones is currently practical in this environment because of the sparse population/number of residences. Additionally, Section 13 of this report will discuss FHWA policy regarding land use development, future noise abatement and proposing a buffer zone for potential subdivision development and/or other potentially sensitive noise receptors.

Noise Barriers

- ***Feasibility***

Feasibility deals with engineering considerations - that is, can a substantial noise reduction be achieved given the conditions of a specific location. Is the ability to achieve noise reduction limited by: (1) topography; (2) animal migratory paths; (3) cultural resources such as historic places; (4) access requirements for driveways, ramps, etc.; (5) maintenance issues and utility encumberments; (6) the presence of local cross streets; or (7) other noise sources in the area, such as aircraft, trains, or industry? All these considerations affect the ability of noise barriers to achieve an actual noise reduction.

It is state policy that construction of a noise barrier is NOT FEASIBLE if a noise reduction of at least 5 dBA cannot be achieved for at least one impacted receptor.

- ***Reasonableness***

Reasonableness is a more subjective criterion than feasibility. It implies that common sense and good judgment have been applied in arriving at a decision. Reasonableness should be based on a number of factors, with regard for all of the individual, specific circumstances of a particular project.

It is state policy that the final determination of reasonableness will be made only after a careful and thorough consideration of a wide range of criteria. However, noise barriers will definitely not be built if a majority of benefited receptors do not want them. During the environmental phase of a project it will be assumed that the benefited receptors will want a noise barrier. During the design phase of the project after the exact location and design of the project have been determined a public meeting will be held to provide detailed information on the design of the project and possible noise barriers. After the public meeting a survey will be conducted of the benefited receptors to determine if they want a noise barrier.

- ***Preliminary Analysis of Receptors Impacted by Preferred Alternative***

  - Receptor 230 will maintain direct access to WV 14 and Receptor 171, located at the new intersection of WV14 and Oakdale Avenue, will maintain access to Oakdale Avenue. A continuous noise barrier near these locations would restrict access to these residences. Gaps in a noise barrier would satisfy access requirements but the resulting non-continuous barrier segments would not be sufficient to achieve the minimum, feasible reduction of 5 dBA. Additionally, a barrier in the location near receptor 171 will likely impede the line-of sight at the new intersection.

  - Receptor 190 is located on Delaware Street with its backyard abutting the northbound side of the new WV 14, north of the new Oakdale intersection. A barrier placed in this location to benefit one impacted receptor would not be cost reasonable. Preliminary estimates indicate that it would require a barrier that would cost more than $100,000 to benefit the impacted receptor (no residual benefits to other receptors).

  - Receptors 210, 212, 219 and 220 are located at the new intersection of WV14 and Lost Pavement Road. Each receptor is located in a different quadrant of the intersection. These receptors will maintain access to Lost Pavement. The four continuous noise barriers near these locations would restrict access to these residences. Gaps in the noise barriers would satisfy access requirements but the resulting non-continuous barrier segments would not be sufficient to achieve the minimum, feasible reduction of 5 dBA. Additionally, barriers in the location near these receptors will likely impede the line-of sight at the new intersection.

  - Receptor 226 (the church picnic area) is located on WV 14 with its back property line abutting the northbound side of the new WV 14, north of the new Lost Pavement

intersection. A barrier placed in this location to benefit this site would not be cost reasonable. Preliminary estimates indicate that it would require a barrier that would cost nearly $70,000 to benefit the impacted receptor (including one additional residual benefit). Please note that for cost reasonableness purposes, the picnic area was counted as one (1) “equivalent number of receptors” as per the WVDOH Highway Traffic Noise Policy. The calculation assumed that 100 people might use the facility every Saturday and Sunday for 4 hours during a typical outdoor season (40 days).

None of the preliminary proposed barrier analysis locations are considered to be both reasonable and feasible. Therefore, no barriers are proposed to be carried forward into final design. The WVDOH Noise Barrier Evaluation Forms detailing the preliminary barrier analyses are included in the project record.

Construction Impacts

The following general steps are suggested for addressing construction noise for this project:

- Identify land uses or activities that may be affected by noise from construction of the project.
- Determine the measures recommended for inclusion in the contract plans and specifications to minimize or eliminate adverse construction noise impacts on the community. This determination shall include a weighing of the benefits to be achieved and the overall adverse social, economic, and environmental effects and the costs of the abatement measures.
- Incorporate the recommended abatement measures into the contract plans and specifications.

Generally, the potential for temporary increases in the sound level environment as a result of construction activities may occur at any of the studied receptor sites. Therefore, control of construction noise will be governed by the Standard Specifications for Road and Bridge Construction and any additional abatement measures developed specifically for the action.

Land Use Development and Future Noise Abatement

The following information is presented for local officials and planners to be aware of anticipated highway noise levels so that future development will be compatible with these levels.

FHWA will not normally participate in noise abatement measures unless there is construction or reconstruction of a highway section (or portion thereof). However, FHWA may participate in noise abatement measures on an existing highway where land development or substantial construction predated the existence of any highway. The granting of a building permit, filing of a plat plan, or a similar action must have occurred prior to the right-of-way acquisition or construction approval for the original highway.

Typically, a rough straight-line estimate of the design year build scenario 66 and 71 dBA contours is provided for future planning purposes. The values shown below do not represent predicted levels at every location at a particular distance back from the roadway. Sound levels may vary with changes in terrain, other road noise sources, tree zones, buildings, any other shielding and/or any other noise generating sources. Roughly:

- The 66 dBA contour is approximately 115 feet from the edge of the nearest lane.
- The 71 dBA contour is approximately 40 feet from the edge of the nearest lane.

3.10 Visual and Aesthetic Impacts

Visual sensitivity in the project area as a whole is generally low because of existing WV 14, including the wider upgraded portions to the north and south as well as associated residential and commercial development within the current landscape. The open fields leading to the rolling hills west of the Project Area offer a special view, and this area will be impacted by the project (see Figure 5 in Section 3.1). However, impact is not considered significant because of the remaining similar viewsheds in the region. The following sections consider impacts to these and other views both from the project and of the project.

Views of the Project

Impacts to the Project Area's visual environment will occur with introduced views of the new roadway. The Preferred Alternative will be visible to travelers, residents, and businesses to the west of the existing WV 14 through the Project Area. Their view of what is currently a rural setting will change to having a transportation facility in the foreground, but distant rural landscape will still exist.

The view of the Preferred Alternative becomes obscured from existing WV 14 in the middle of the Project Area because of residential structures and trees. The project will not generally be visible from the densest residential neighborhoods in the Project Area, located to the east of existing WV 14.

From the north, south and west, views of the Preferred Alternative will encroach on the current rural setting. However, because of the proximity of existing WV 14 and development, views will not be considerably altered. Although the future development of the region's land is uncertain, it is likely that large tracts of undeveloped land will remain within these viewsheds north and west of the Project Area. Indirect effects are addressed in more detail in Section 3.11.

With the No Build Alternative, views of WV 14 will become increasingly influenced by traffic congestion. Otherwise, no impact is expected.

Views from the Project

With the re-alignment, travelers along WV 14 will be offered a new viewshed through much of the Project Area. Travelers will have views of agricultural lands and rolling hills to the north and west, which is a change from views of the more enclosed neighborhoods along the existing stretch of WV 14. The future of the foreground view may change if the land adjacent

to the new roadway is developed, but some distant views will likely remain. Indirect effects are addressed in more detail in Section 3.11.

Overall, changes to the aesthetic and visual environment from the Preferred Alternative will occur but are not expected to be significant.

3.11 Indirect and Cumulative Effects

Indirect Effects

Indirect impacts are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." 40 CFR 1508.8(b).

WVDOH considered the potential for indirect effects due to the project. The Preferred Alternative will make open land to the west of the Preferred Alternative more available for development. Areas of induced development would be limited to the access points The future land use in the area is not within the control of WVDOH or FHWA. However, it is reasonably foreseeable that more development will occur. Part of the purpose for the project is economic development and representatives from local planning agencies (WWW-IPC and Mid-Ohio Valley Regional Council) have indicated that developers have already expressed interest in the fields to the west of the Preferred Alternative, although no specific plans are in place (Rader, 2013 and Durst, 2013).

Cumulative Effects

The cumulative effect from a project is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 CFR 1508.7.

To assess the potential for cumulative impact, WVDOH researched other reasonably foreseeable actions that could impact resources affected by the project. The geographic reach of the analysis included the viewshed (the areas that can be seen from the project and from where the project will be seen) and the boundaries of the watershed impacted by the project. The year 2035 was used as the horizon year for this analysis because local planning has been extended to that year (WWW-IPC, 2013b).

As mentioned in the previous section (Indirect Effects), commercial or industrial development is likely to occur at the access points to the west of the new roadway. Communications with the local planners and a review of the TIP revealed no other planned projects in the region. One exception is the improvement of an intersection along WV 14 to the north of the Project Area, at Giyon Road and Rayon Drive, where the land is already developed.

Therefore, indirect and cumulative effects include the impacts of the project itself and a presumed development of acreage to the west of the new roadway. Effects over and above

those assessed in Sections 3.1 through 3.10 include visual effects, land use effects, and socioeconomic effects.

With respect to open land and visual impacts, there will remain plentiful open vistas and unpaved surfaces after construction of the project. The Hydrologic Unit Code 12 watershed for the region is the Neal Run-Little Kanawha River watershed, which has over 8,277 acres of grasslands/pastureland/agricultural land use type. With the project and a presumed 100-acre development serving as a "worse-case scenario" with respect to changes in land use, the watershed would still have 8,158 acres of this land use type. Less than a mile from the Project Area to the west along Lost Pavement Road reveals a vast rural landscape (Figure 13).

With regard to socioeconomics, the cumulative effect is likely positive for the region. Combining a more efficient roadway with higher capacity with new commercial or industrial development will facilitate economic growth in the region. The new development will bring jobs and the roadway can bring workers and patrons to those facilities.

Figure 13: View within one mile of proposed right-of-way to the west along Lost Pavement Road.

An important factor in considering the future plans for the region is the amount of planning taking place. A way to mitigate changes in land use and impacts to surface waters is to help control the future impacts to these resources. In the fall of 2013, a new effort has begun to increase discussion between WVDOH and the Mid-Ohio Valley Regional Council concerning the plans for the entire connection between I-77 and the City of Parkersburg (Durst, 2013). A coordinated Corridor Management Study will help ensure that the land in the greater Parkersburg area achieves its highest and best use, including consideration for open spaces, water quality, and quality of life issues, as well as the means to provide the region's commerce and industry the resources they need to grow.

4.0 COORDINATION

4.1 Public Involvement

WVDOH conducted an informational workshop public meeting in the summer of 2012 during the development of alternatives. Another workshop will take place during the comment period for the EA. Information on the workshops is summarized in Table 11. At each workshop, display boards showed alternatives and comparison of impacts as known at the time, a handout was provided, and WVDOH personnel were available for questions.

Several means of commenting are provided: turning in a comment sheet at the public meeting, emailing WVDOH, mailing WVDOH, or submitting a comment through the WVDOH website.

Table 11: Public Meetings for WV 14, Mineral Wells to Pettyville

Purpose	Date	Location	End of Comment Period
To introduce the project and preliminary alternatives and to solicit comments	August 13, 2012	Mineral Wells Elementary School 1776 Elizabeth Pike Mineral Wells, WV	September 13, 2012
To present alternatives, including a Preferred Alternative, and to solicit comments during Environmental Assessment review period	To Be Determined	To Be Determined	To Be Determined

In addition to the public workshops, WVDOH has maintained a public project website for disseminating information about the project and announcing meetings. This website is located at: http://www.transportation.wv.gov/highways/engineering/comment/wv14mwp/Pages/default.aspx. Workshop hand-outs have been available for download and contact information for submitting comments has been posted on this website.

WVDOH considered comments made during the August-September 2012 public comment period. See Section 2.1 for a synopsis of comments received and the subsequent selection of a Preferred Alternative for presentation in this EA.

Additional comments submitted during the public comment period will be considered by WVDOH and FHWA, and responses to substantive comments will be provided. At this time, WVDOH is requesting of FHWA that there be a Finding of No Significant Impact (FONSI) for this proposed project. If issued, the FONSI documentation will include copies of substantive comments and responses to them and any substantive updates to information provided in the EA.

4.2 Agency Coordination

The following outreach has taken place with resource agencies for assessing the potential for impacts due to the proposed project:

- Coordination with the NRCS for farmland soil resources. Results are discussed in Section 3.1, and a copy of correspondence is provided in Appendix A.
- Coordination with the SHPO for historic and archaeological resources. Results are detailed in Section 3.5, and letters of concurrence are presented in Appendix C.
- Coordination with WVDNR for protected species. Results are discussed in Section 3.7, and a copy of correspondence is provided in Appendix D.
- Coordination with USFWS for protected species. Results are discussed in Section 3.7, and a copy of correspondence is provided in Appendix D.

Coordination with resource agencies is ongoing for the proposed project. The EA is being distributed to the agencies discussed above and other agencies likely to have an interest in the project. Comments will be accepted on the EA until _____, 2014, unless an extension is provided. Comments will be considered, and responses to substantive comments will be provided. If the project is implemented, WVDOH will also continue to coordinate with resource agencies as appropriate for agreed upon mitigation activities.

5.0 DISTRIBUTION LIST

5.1 Federal Agencies

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5.2 West Virginia Agencies

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5.3 Regional Agencies, Senators and Delegates

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Mid-Ohio Valley Regional Council
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Senator Donna Boley
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Senator David Nohe
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_____. 2013b. *Interstate Planning Commission Transportation Plan Update: 2035.* Parkersburg, WV. Air Quality Conformity Approval Date: 2/25/13.

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Appendix A

Farmland Conversion Rating Form

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
1550 Earl Core Road, Suite 200
Morgantown, WV 26505

(304) 284-7560 (Phone)
(304) 284-4839 (Fax)

March 26, 2013

Martha Young DoByns, Technical Specialist-NEPA Specialist
Michael Baker Corporation
5088 West Washington
Charleston, WV 25313

RE: Farmland Conversion Impact Rating, West Virginia Division of Highways-WV14, Mineral Wells to Pettyville, Wood County, WV

Dear Ms. DoByns:

This is to acknowledge receipt of your request for evaluation of Important Farmland related to the above referenced project in Wood County, WV. This Important Farmland information was requested in order for you to assess the environmental impacts of the proposed project in accordance with the National Environmental Policy Act.

The Farmland Protection Policy Act (FPPA – Public Law 97-98, 7 U.S.C. 4201) established the farmland conversion rating system to evaluate the impacts Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use **and** are implemented by a Federal agency or with the assistance from a Federal agency. Assistance from a Federal agency includes loans, financial and technical assistance.

Based on a review of the documents you submitted, the four highway corridors **do** impact acreage of important farmland, as reflected in the attached form. The **TOTAL POINTS** in **Part VII** are all under 160, so **none** of the four corridors fall under the protection of FPPA. You may fill out the bottom of this form for whichever corridor is the final choice. Under reason for Selection, you might write: "Total points are under 160, does not fall under the protection of the Farmland Protection Policy Act". I do not need a return copy.

If you have questions regarding this matter, please contact Ron Wigal, Environmental Specialist, at 304-284-7566.

Sincerely,

Robert N. Pate

Robert N. Pate, Resource Soil Scientist

cc: Ron Wigal-Environmental Specialist, NRCS, Morgantown, WV

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request March 25, 2013	4. Sheet 1 of 2
1. Name of Project WV 14, Mineral Wells to Pettyville	5. Federal Agency Involved West Virginia Department of Transportation	
2. Type of Project Roadway	6. County and State Wood County, WV	

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS	2. Person Completing Form Robert N. Pate
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☐ NO ☒		4. Acres Irrigated N/A | Average Farm Size 99 acres
5. Major ~~Crop(s)~~ (Corn), Hay	6. Farmable Land in Government Jurisdiction Acres: 108,402 % 27.7	7. Amount of Farmland As Defined in FPPA Acres: 108,402 % 27.7
8. Name Of Land Evaluation System Used LESA	9. Name of Local Site Assessment System None	10. Date Land Evaluation Returned by NRCS 3/26/2013

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment			
	Corridor A/1	Corridor B/2	Corridor C/3	Corridor D/4
A. Total Acres To Be Converted Directly	30.60	32.38	31.72	27.22
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0	0	0	0
C. Total Acres In Corridor	30.60	32.38	31.72	27.22
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	0	1	0	2
B. Total Acres Statewide And Local Important Farmland	2	10	5	19
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	.001	.001	.001	.001
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	28	28	28	28
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	4	20	10	45

PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points				
1. Area in Nonurban Use	15	6	6	6	6
2. Perimeter in Nonurban Use	10	0	4	3	7
3. Percent Of Corridor Being Farmed	20	0	1	0	2
4. Protection Provided By State And Local Government	20	0	0	0	0
5. Size of Present Farm Unit Compared To Average	10	0	8	0	8
6. Creation Of Nonfarmable Farmland	25	0	5	0	10
7. Availablility Of Farm Support Services	5	0	0	0	0
8. On-Farm Investments	20	0	0	0	10
9. Effects Of Conversion On Farm Support Services	25	0	1	0	1
10. Compatibility With Existing Agricultural Use	10	0	3	0	5
TOTAL CORRIDOR ASSESSMENT POINTS	160	6	28	9	49
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	4	20	10	45
Total Corridor Assessment (From Part VI above or a local site assessment)	160	6	28	9	49
TOTAL POINTS *(Total of above 2 lines)*	260	10	48	19	94

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☒

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

0 0 0 0

Pate, Robert - NRCS, Beckley, WV

From: DoByns, Martha Young [MDoByns@mbakercorp.com]
Sent: Monday, March 25, 2013 1:07 PM
To: Pate, Robert - NRCS, Beckley, WV
Cc: Mullins, Sondra L (Sondra.L.Mullins@wv.gov)
Subject: CPA 106 for Mineral Wells Project
Attachments: Mineral_Wells_map.pdf; Mineral Wells_corridors_CPA-106.pdf

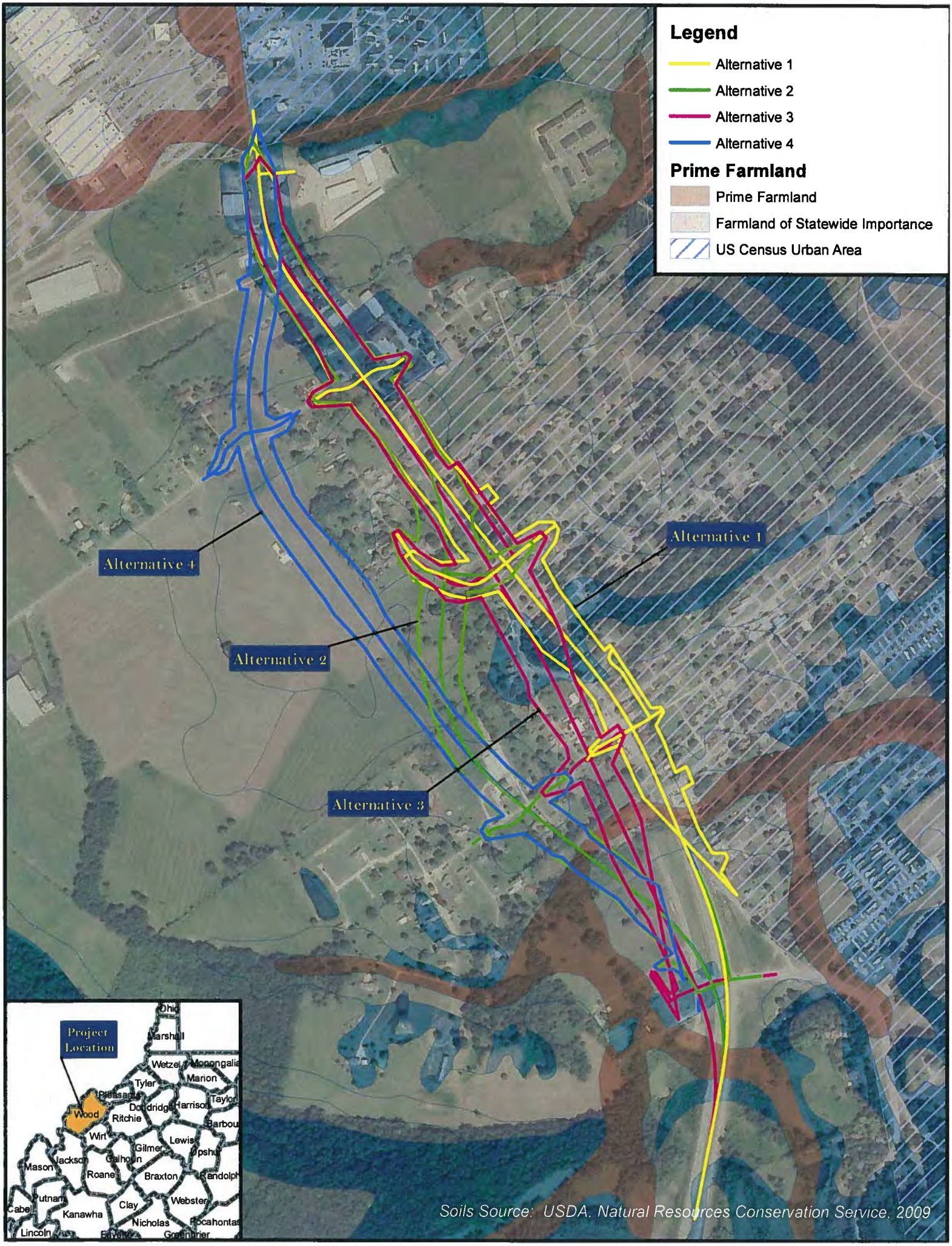
Mr. Pate –

Please consider the attached on behalf of the West Virginia Division of Highways for the Mineral Wells project. As requested, we've included the variety of alternatives in this form for corridor assessment.

Please let me know if there is something filled-out incorrectly or if you need additional information about the project.

Martha Y. DoByns | Technical Manager - NEPA Specialist | Michael Baker Corporation
5088 West Washington | Charleston, WV 25313 | 207.459.5069 (ofc) | 207.206.6151 (cell)
mdobyns@mbakercorp.com | www.mbakercorp.com

Baker


Legend
Alternative 1
Alternative 2
Alternative 3
Alternative 4
Prime Farmland
Prime Farmland
Farmland of Statewide Importance
US Census Urban Area
Alternative 4
Alternative 1
Alternative 2
Alternative 3
Project Location
Ohio
Marshall
Wetzel
Monongalia
Tyler
Marion
Pleasants
Doddridge
Harrison
Taylor
Wood
Ritchie
Barbour
Wirt
Lewis
Gilmer
Upshur
Jackson
Calhoun
Mason
Roane
Braxton
Randolph
Putnam
Webster
Cabell
Clay
Kanawha
Nicholas
Pocahontas
Lincoln
Greenbrier
Soils Source: USDA, Natural Resources Conservation Service, 2009

WV 14, Mineral Wells to Pettyville

Soil Series within each corridor

A - Yellow

Alternative 1

GaC (Gallia) Statewide – 1 acre x 68

Ma (Made Land)

MdB (Markland) Statewide

MeC3 (Markland SE) Statewide

Mg (McGary) Statewide

MnB (Monongahela-Tilsit) Statewide

MnC (Monongahela-Tilsit) Statewide – 1 acre x 68

Se (Senacaville) Prime

UgD3 (Upshur-Gilpin, SE)

VaC (Vandalia) Statewide

136 ÷ 30.60 =

4

B - Green

Alternative 2:

GaC (Gallia) Statewide	1 acre x 68	68
Ma (Made Land)		
MdB (Markland) Statewide	2 acres x 68	136
Mg (McGary) Statewide	3 acres x 40	120
MnB (Monongahela-Tilsit) Statewide	1 acre x 68	68
MnC (Monongahela-Tilsit) Statewide	2 acres x 68	136
Se (Senacaville) Prime	1 acre x 85	85
Ty (Tygart) Statewide	1 acre x 40	40
		653

653 ÷ 32.38 =

20

C- Red

Alternative 3:

GaC (Gallia) Statewide 1 acre x 68 = 68

Ma (Made Land)

MdB (Markland) Statewide 1 acre x 68 = 68

Mg (McGary) Statewide 1 acre x 4 = 40

MnB (Monongahela-Tilsit) Statewide

MnC (Monongahela-Tilsit) Statewide 2 acres x 68 = 136

Se (Senacaville) Prime

Ty (Tygart) Statewide

UgC (Upshur-Gilpin) Statewide

UgD3 (Upshur-Gilpin, SE)

312 ÷ 31.72 =

(10)

D - Blue

Alternative 4

GaC (Gallia) Statewide

Ma (Made Land)

MdB (Markland) Statewide 3 x 68 = 204

Mg (McGary) Statewide 5 x 40 = 200

MnB (Monongahela-Tilsit) Statewide 2 x 68 = 136

MnC (Monongahela-Tilsit) Statewide 6 x 68 = 408

Se (Senacaville) Prime 2 x 85 = 170

Ty (Tygart) Statewide 3 x 40 = 120

1238 ÷ 27.22 =

(45)

Appendix B

U.S. Census Areas for Environmental Justice Analysis

Census Tracts Around Min Wells

Legend:

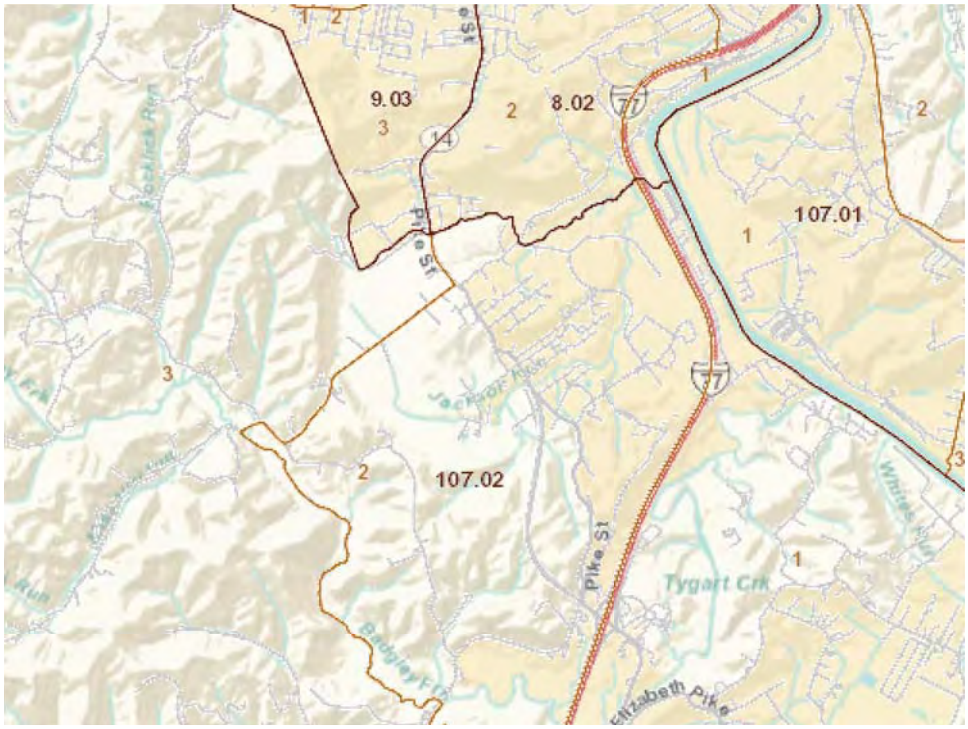
Boundaries

- State
- '12 County
- '12 Census Tract
- '12 Block Group

Features

- Major Road
- Street
- Stream/Waterbody
- Church

Items in grey text are not visible at this zoom level



Census Block Grps Around Min Wells

Legend:

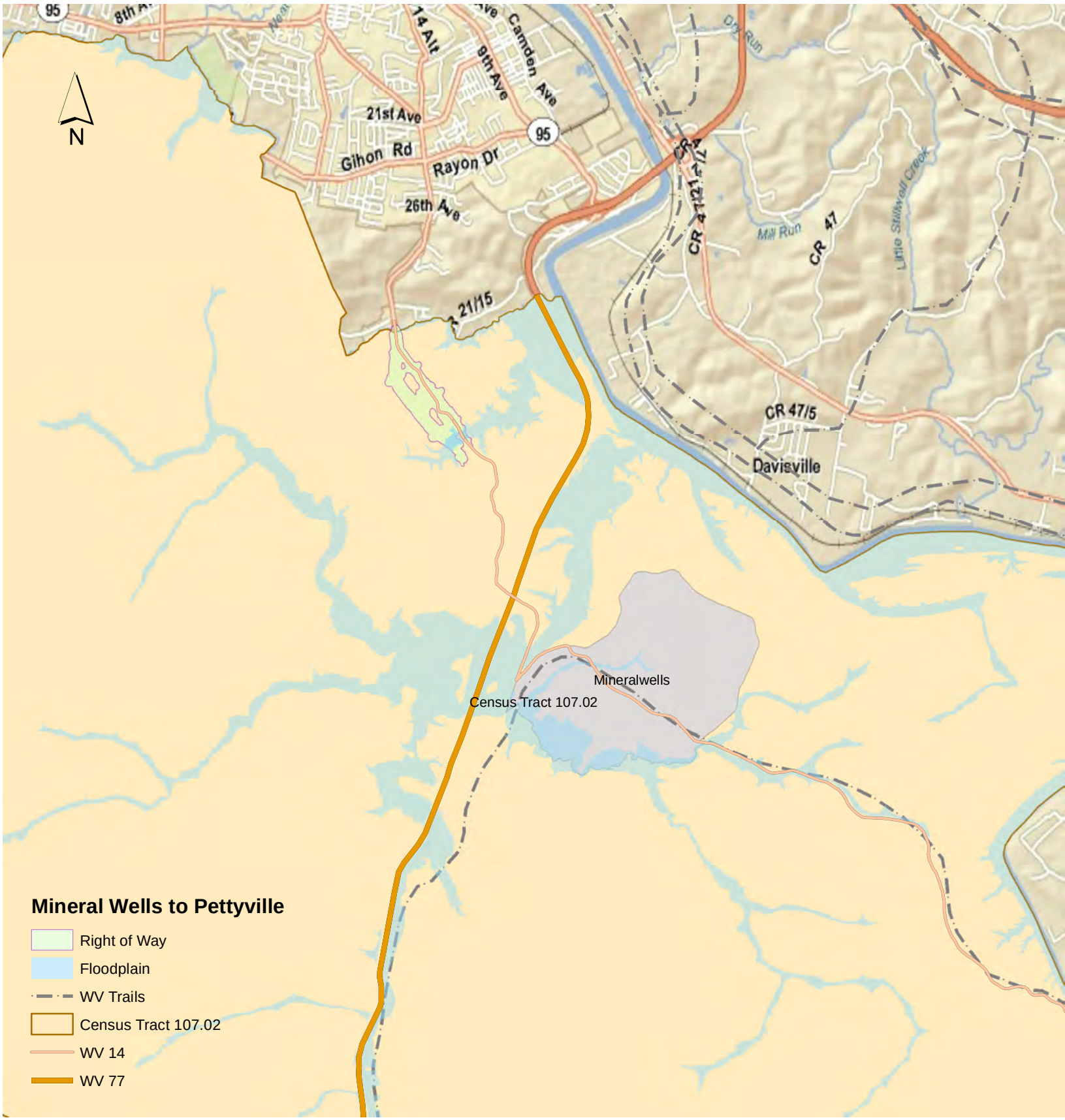
Boundaries

- State
- '12 County
- '12 Census Tract
- '12 Block Group

Features

- Major Road
- Street
- Stream/Waterbody
- Church

Items in grey text are not visible at this zoom level


N
95
21st Ave
9th Ave
Camden Ave
Gihon Rd
Rayon Dr
26th Ave
CR 47/5
CR 47
Mill Run
Davisville
Mineralwells
Census Tract 107.02
Mineral Wells to Pettyville
Right of Way
Floodplain
WV Trails
Census Tract 107.02
WV 14
WV 77


Dupont Rd
9
618
68
95
East Pike St
Blizzard Dr
95
LUBECK
CEDAR GROVE
MURPHYTOWN
77
KANAWHA
Little Kanawha River
Mineralwells
Census Tract 107.02
13
46
desville-rockport
17
ROCKPORT
1419
N
Mineral Wells to Pettyville
Right of Way
2011 Census Blocks
Census Tract 107.02
WV 14
WV 77

Appendix C

Cultural Resources Agency Consultation

WEST VIRGINIA
Division of Culture and History

The Culture Center
1900 Kanawha Blvd., E.
Charleston, WV 25305-0300
Randall Reid-Smith, Commissioner
Phone 304.558.0220 • www.wvculture.org
Fax 304.558.2779 • TDD 304.558.3562
EEO/AA Employer

April 24, 2013

RECEIVED
APR 26 2013
ENGINEERING DIVISION
WV DOH

Mr. Gregory Bailey
Director, Engineering Division
West Virginia Division of Highways
1900 Kanawha Blvd., East
Building 5, Room 110
Charleston, WV 25305

Re: WV 14 Realignment Project Mineral Wells to Pettyville, WV
State Project: U354-14-8.69 00; Federal Project: STP0014112D
FR#: 13-492-WD

Dear Mr. Bailey:

We have reviewed the Phase I Archeological Survey report submitted for 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.

Archaeological Resources

According to the report, systematic survey of the Preferred Alternate (Alternate 4) for the proposed project area resulted in the identification of one new archaeological site, 46WD272, within Test Area 3. No cultural materials were recovered from Test Areas 1 and 2. The site consists of a scatter of historic era artifacts and a single prehistoric chert flake recovered from plowzone contexts and intermixed with modern debris. The materials, which were recovered from the yard and garden of an extant ca. 1918 house, are primarily comprised of small unidentified fragments of metal, glass and ceramics. No evidence of intact subsurface cultural features, stratification, or activity areas was identified. As a result, we concur that the site has limited research potential and is not eligible for inclusion in the National Register of Historic Places. We also concur that no further archaeological work is necessary.

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

Sincerely,

Susan M. Pierce
Deputy State Historic Preservation Officer

SMP/LLD

WEST VIRGINIA
Division of Culture and History

RECEIVED
MAY 0 2 2013
ENGINEERING DIVISION
WV DOH

The Culture Center
1900 Kanawha Blvd., E.
Charleston, WV 25305-0300
Randall Reid-Smith, Commissioner
Phone 304.558.0220 • www.wvculture.org
Fax 304.558.2779 • TDD 304.558.3562
EEO/AA Employer

April 29, 2013

Mr. Gregory Bailey
Director, Engineering Division
West Virginia Division of Highways
1900 Kanawha Blvd., East
Building 5, Room 110
Charleston, WV 25305

Re: WV 14 Realignment Project Mineral Wells to Pettyville, WV
State Project: U354-14-8.69 00; Federal Project: STP0014112D
FR#: 13-492-WD-1

Dear Mr. Bailey:

We have reviewed the Historic Resources Survey and Determination of Eligibility Report submitted for 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.

Architectural Resources
According to the report, the survey identified 70 historic resources within the defined area of potential effect (APE), which included "all land areas that could include historic properties affected by construction of any of the four alternatives for the WV 14 Realignment Project." Of these 70 resources, 11 had been previously surveyed. It is the consultant's opinion that none of the 70 buildings are eligible for inclusion in the National Register of Historic Places either individually or as an historic district. After review of the thorough documentation, we concur that there is not an historic district in this area. In addition, we concur that the majority of surveyed buildings are not eligible for inclusion in the National Register of Historic Places as they lack integrity. It is our opinion, however, that the building identified as Barn #1 associated with WD-4028 would require more information in order to assess its eligibility. Should the chosen alignment result in an impact on the barn, further consultation would be necessary. Specifically, we would require additional information regarding eligibility of the barn and, if eligible, an effects report. If the barn is not impacted by the selected alignment, then no additional consultation regarding architectural resources is necessary.

We appreciate the opportunity to be of service. *If you have questions regarding our comments or the Section 106 review process, please contact Shirley Stewart Burns, Structural Historian, at (304) 558-0240.*

Sincerely,

Susan M. Pierce
Deputy State Historic Preservation Officer

SMP/SSB

WEST VIRGINIA
Division of Culture and History

RECEIVED
SEP 30 2013
ENGINEERING DIVISION
WV DOH

The Culture Center
1900 Kanawha Blvd., E.
Charleston, WV 25305-0300
Randall Reid-Smith, Commissioner
Phone 304.558.0220 • www.wvculture.org
Fax 304.558.2779 • TDD 304.558.3562
EEO/AA Employer

September 26, 2013

Mr. Gregory Bailey
Director, Engineering Division
West Virginia Division of Highways
1900 Kanawha Blvd., East
Building 5, Room 110
Charleston, WV 25305

Re: WV 14 Realignment Project Mineral Wells to Pettyville, WV
State Project: U354-14-8.69 00; Federal Project: STP0014112D
FR#: 13-492-WD-2

Dear Mr. Bailey:

We have reviewed the Historic Resources Survey and Determination of Eligibility Report submitted for 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.

Architectural Resources

We are in receipt of an updated Historic Property Inventory (HPI) form associated with WD-4028, the Athey-Klamut House. Our earlier letter had stated that as long as the barn associated with the farm was not being impacted by this project, the project would not require additional consultation. The current submission does not indicate what, if any, impact the current proposed project will have to this barn. We request that you clarify this important question as soon as possible.

It is the consultant's opinion that the barn is not eligible for inclusion in the National Register of Historic Places as "this variant of barn…is prevalent through New England and the upper Midwest, including the northernmost counties of West Virginia, and as far south as Wood County." The consultant then refers Figure 1 to illustrate this point. Please note that Figure 1 does not include Wood County, but does include the northern panhandle counties of West Virginia and perhaps as far south as Tyler County. It is difficult to discern from the included Figure, but the area defined does not appear to go as far south as Wood County.

From the supplied photographs, the barn itself appears to be in very good condition and retains integrity. In addition, according to the HPI form, the Athey family worked the dairy business for more than 50 years, until 1979 when Arnold Athey (then aged 78) ceased operations. After discussion with members of my staff, it is our opinion that the barn is potentially eligible for inclusion in the National Register of Historic Places under Criteria A and C. This is *not* a locally common barn type, and when looking at the bibliography, there is not enough information researched regarding *local significance* to rule it out under Criterion A. It is unclear how a definitive statement of ineligibility for this barn could be stated based on the bibliographic resources cited and without a more detailed look at the potential local significance of the barn.

At this time, we retain our earlier opinion. If the barn is not impacted by the selected alignment, then no additional consultation regarding architectural resources is necessary. If the barn is being impacted by the alignment, please provide details regarding what will happen to the barn and expand the HPI form, and research, to include more local histories and eligibility for local significance for both Criteria A and C.

We appreciate the opportunity to be of service. *If you have questions regarding our comments or the Section 106 review process, please contact Shirley Stewart Burns, Structural Historian, at (304) 558-0240.*

Sincerely,

Susan M. Pierce

Susan M. Pierce
Deputy State Historic Preservation Officer

SMP/SSB

WEST VIRGINIA
Division of Culture and History

The Culture Center
1900 Kanawha Blvd., E.
Charleston, WV 25305-0300
Randall Reid-Smith, Commissioner
Phone 304.558.0220 • www.wvculture.org
Fax 304.558.2779 • TDD 304.558.3562
EEO/AA Employer

RECEIVED
DEC 13 2013
ENGINEERING DIVISION
WV DOH

December 9, 2013

Mr. Gregory Bailey
Director, Engineering Division
West Virginia Division of Highways
1900 Kanawha Blvd., East
Building 5, Room 110
Charleston, WV 25305

Re: WV 14 Realignment Project Mineral Wells to Pettyville, WV
State Project: U354-14-8.69 00; Federal Project: STP0014112D
FR#: 13-492-WD-3

Dear Mr. Bailey:

We have reviewed the additional information that was submitted for the above referenced project. 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.

Architectural Resources
We are in receipt of the very thorough Historic Property Inventory (HPI) form associated with the Athey & Sons Dairy Barn. It is the consultant's opinion that the dairy barn *is eligible* for inclusion in the National Register of Historic Places under Criterion A for its association with the local dairy industry as well as under Criterion C for its architecture. We concur with this assessment. It is our opinion that the Athey & Sons Dairy barn *is eligible* for inclusion in the National Register of Historic Places under Criteria A and C. The consultant defines the National Register boundary as the dairy barn, milk and well house. We concur with this boundary.

Submitted information states that "the Athey Barn will be over 140 feet from the edge of pavement and is outside of the proposed right of way." It is our understanding from the submitted information, that the barn will not be directly impacted by the proposed project. It is your staff's opinion that the proposed project will have no effect on the barn or on architectural resources eligible for or included in the National Register of Historic Places. After review of all submitted information, we concur with this assessment. It is our opinion that the proposed project will have no effect to the eligible Athey Barn. No further consultation is necessary. Should your project change or become altered in any way that would impact the barn, you would need to contact our office for further consultation at that time. At this time, no additional consultation regarding architectural resources is necessary.

We appreciate the opportunity to be of service. *If you have questions regarding our comments or the Section 106 review process, please contact Shirley Stewart Burns, Structural Historian, at (304) 558-0240.*

Sincerely,

Susan M. Pierce
Deputy State Historic Preservation Officer

SMP/SSB

Appendix D

Protected Species Agency Coordination

RECEIVED
JUN 07 2013
ENGINEERING DIVISION
WV DOH

DIVISION OF NATURAL RESOURCES
Wildlife Resources Section
Operations Center
P.O. Box 67
Elkins, West Virginia 26241-3235
Telephone (304) 637-0245
Fax (304) 637-0250

Earl Ray Tomblin
Governor

Frank Jezioro
Director

June 5, 2013

Mr. Ben Hark
Division of Highways
1900 Kanawha Boulevard, East
Building Five, Room 110
Charleston, WV 25305-0430

Dear Mr. Hark:

We have reviewed our files for information on rare, threatened and endangered (RTE) species and natural trout streams for the areas of the proposed highway projects:

LW	State Project 10-16-23.11 UT-New River Culvert Replacement Fayette County	Our records indicate no known occurrences of RTE species or natural trout streams at this site.
RE	State Project U354-14-8.69 02 Federal Project STP-0014(136)D WV 14 Realignment, Mineralwells to Pettyville Wood County	Our records indicate no known occurrences of RTE species or natural trout streams at this site.

The Wildlife Resources Section knows of no surveys that have been conducted in these areas for rare species or rare species habitat. Consequently, this response is based on information currently available and should not be considered a comprehensive survey of the areas under review.

Thank you for your inquiry, and should you have any questions please feel free to contact me at the above number, extension 2048.

Sincerely,

Barbara Sargent
Environmental Resources Specialist
Wildlife Diversity Unit

US Fish and Wildlife Service Project Review Form

Re: State Project: U354-14-8.69 02
Federal Project: STP-0014(136)D
WV 14 Realignment, Mineral Wells to Pettyville
Wood County
DATE: 06-4-13

The subject project will not impact Federally-listed species; therefore, no Biological Assessment or further Section 7 consultation pursuant to the Endangered Species Act (87 STAT 884, as amended; 16 U.S.C. et seq.) is required with the US Fish and Wildlife Service.

Reviewer's signature — Date: Jun 13, 2013

Field Supervisor — Date: 6/14/2013

DOH Project Manager: Randy Epperly

Phone: (304) 558-9385

Please return this form to the following address:

West Virginia Division of Highways
Engineering Division, Environmental Section
Building 5, Room 450
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305

From: Epperly, Randy T
To: Martha Young DoByns
Subject: FW: Northern Long Eared Bat- WV14 Mineral Wells to Pettyville
Date: Wednesday, March 05, 2014 4:34:23 PM

Below is FWS response to the Northern Long Eared Bat for Mineral Wells.

From: Stout, Elizabeth [mailto:elizabeth_stout@fws.gov]
Sent: Wednesday, March 05, 2014 4:29 PM
To: Cummings, Traci L
Cc: Epperly, Randy T; Hark, Ben L; Facemire, Lovell R; Alison.Rogers@dot.gov
Subject: Re: Northern Long Eared Bat- WV14 Mineral Wells to Pettyville

The Service concurs that this project will have "no effect" on the NLEB.

On Tue, Mar 4, 2014 at 12:55 PM, Cummings, Traci L <Traci.L.Cummings@wv.gov> wrote:

Liz,

We submitted this project for USFWS review in June 2013. We received FWS clearance on June 14, 2013. I just wanted to make sure that the clearance still stands given the newly proposed candidate Northern Long Eared Bat.

The West Virginia Division of Highways (WVDOH), in cooperation with the Federal Highway Administration (FHWA), proposes to upgrade an approximately 1.1-mile section of West Virginia State Route 14 (WV 14) in Wood County from Mineral Wells to Pettyville. The Project Area lies between an already upgraded section of WV 14 just north of the Interstate 77 (I-77) interchange in Mineral Wells and a growing commercial district in Pettyville. The preferred alternative will construct 1.38 miles of new roadway west of the existing roadway. The typical section will be four 12-foot lanes with 6-foot shoulder on the inside and a 12-foot shoulder on the outside. The roadway then transitions to three lanes, with the center lane designated for turning.

The preferred alternative's impact area is through an area that lacks contiguous forest, and impacts are under 17 acres of Forested Land. We just wanted to make sure our records were up to date for the Environmental Assessment. I've attached a

project location map and the original FWS clearance.

Thank you,

Traci L. Cummings
Natural Resources Unit Leader
WVDOH-Environmental Section
304-558-9678 (office)
304-558-3236 (fax)
304-541-7509 (cell)

--

Liz Stout
Fish and Wildlife Biologist; GIS Technician
U.S. Fish and Wildlife Service
West Virginia Field Office
694 Beverly Pike
Elkins, WV 26241
(304) 636 6586 x15
http://www.fws.gov/westvirginiafieldoffice/index.html

Due to an imposed hiring freeze and the inability to back fill positions, we are significantly delayed in our project review times and response times to phone calls and emails. Please be patient; we will address projects in the order in which they are received.