

# Melissa-Huntington Road Project Environmental Assessment

*Cabell County, West Virginia*

**State Project Number: U306-10-13.35 00**  
**Federal Project Number: STP-0010(095)EQ**

**U.S. Department of Transportation  
Federal Highway Administration**



**West Virginia Department of Transportation  
Division of Highways**



**June 2014**

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**MELISSA-HUNTINGTON ROAD PROJECT**  
**Cabell 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

5/15/14  
DATE OF APPROVAL

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This proposed project consists of the realignment and upgrade of a 2.25-mile section of WV 10 (16<sup>th</sup> Street Road) from County Route 46 (Woodville Drive) to approximately County Route 44 (Cedar Crest Drive).

Comments on this Environmental Assessment are due by September 8, 2014 and should be sent to:

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**MELISSA-HUNTINGTON ROAD PROJECT  
CABELL COUNTY, WEST VIRGINIA**

**ENVIRONMENTAL ASSESSMENT**

**United States Department of Transportation  
Federal Highway Administration**

**West Virginia Department of Transportation  
Division of Highways**

**June 2, 2014**

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## **EXECUTIVE SUMMARY**

## **1.0 INTRODUCTION**

This executive summary is being prepared for the Melissa-Huntington Road Environmental Assessment (EA). The Federal Highway Administration (FHWA), in cooperation with the West Virginia Department of Transportation, Division of Highways (WVDOH), has prepared the EA to fulfill requirements set forth in the *National Environmental Policy Act of 1969* (NEPA); the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU); and, the *Moving Ahead for Progress in the 21<sup>st</sup> Century Act* (MAP-21). Transportation projects vary in their potential to affect the environment and this project is no exception. The WVDOH has tentatively determined that the Melissa-Huntington Road Project will impact the environment, but the significance of those impacts is unclear. Thus, it is being advanced as an EA.

The proposed Melissa-Huntington Road Project is in Cabell County, West Virginia. The study area is defined approximately as existing WV 10 near Interstate 64 (I-64) at Exit 11 from Woodville Drive (County Route [CR] 46) to approximately Cedar Crest Drive (CR 44) just west of Melissa. The length of the proposed project is about 2.25 miles. The roadway is known locally as 16<sup>th</sup> Street Road and is classified as a rural collector. The study area is suburban in nature with a mixture of well-kept, single-family homes, businesses, a few community facilities, and considerable open space. Residential development is found throughout the study area but at relatively low density. There are about three dozen businesses adjacent to and along the entire project corridor; some have clustered near the eastern and western project termini and near Norwood Road (CR 35 north). Development patterns within the immediate study area are heavily influenced by the proximity of the City of Huntington and the location of an interchange for I-64 near the project's northwestern terminus.

Transportation improvements along WV 10 between the City of Huntington and the community of Melissa have been studied since the late 1960s and early 1970s, but the proposed project lay dormant for many years. An EA was prepared for the project in September 2002, but not carried through to a Finding of No Significant Impact (FONSI). That effort is being rejuvenated through the preparation of this EA.

A purpose and need statement was established for the project through earlier planning efforts. Within the study area, there is a need to: alleviate traffic congestion and improve level of

service; improve safety; provide efficient access to the Huntington metropolitan area and Huntington High school; and stimulate economic development.

The proposed project is consistent with state, regional, and local plans. At the state level, the project is consistent with both the *West Virginia Multi-Modal Statewide Transportation Plan* (WVDOH 2010) and the *Statewide Transportation Improvement Plan: 2014-2019* (WVDOH 2014). At the regional level, the project is listed in the short-range element of the *Biennial Report, Huntington-Ironton Transportation Study, 2014-2017 Transportation Improvement Program* (KYOVA Interstate Planning Commission 2013a). At the local level, the project is consistent with the *Cabell County Land Use and Corridor Study* (KYOVA 2000). The plan is also expected to be consistent with the Cabell County comprehensive plan that is currently under development.

## **2.0 ALTERNATIVES**

Several alternatives were evaluated throughout the course of the project. They include a no-build alternative, a transportation system management (TSM) alternative, a mass transit alternative, and four build alternatives. The no-build alternative served as the benchmark against which the build alternatives were evaluated. It incorporated currently planned improvements in the region. The TSM alternative included improvements and strategies aimed at providing better operational control of existing levels of congestion. Often erroneously considered to always be a low-cost improvement, TSM alternatives can, in fact, be quite expensive. The mass transit alternative focused on expanded bus service in the area. The build alternatives examined new highway construction.

Following a preliminary alternatives analysis, the TSM alternative and the mass transit alternative were determined unfeasible and three alignments (Alignments A, B, and C) were developed as part of the build alternative. Subsequent to the initial screening, Alignments A and B were dropped and one of the build alternatives, Alignment C, was modified to better meet the project's overall goals, reduce the impact to the local community, and match current budget constraints. Subsequently, two build alternatives (Alignment C and Modified Alignment C) and the no-build alternative were advanced for further analysis.

If constructed, Alignment C would be a four-lane facility and Modified Alignment C would be a three-lane facility. The cost of Alignment C has been estimated to be \$16.0 million and the cost of Modified Alignment C has been estimated to be \$12.3 million.

A traffic demand model was used to estimate trip production, traffic assignment, and the amount of traffic potentially diverted from existing roadways to a build alternative for a 20-year design year. In 2007, average daily traffic (ADT) on WV 10 near Green Valley Road reached 9,200 ADT and 19,100 ADT at the Exit 11 interchange area (WVDOH 2007). Projections prepared in 2000 indicated that traffic would reach 19,400 ADT at Exit 11 in 2020, but it has already reached 20,300 ADT (WVDOH 2010a).

WVDOH performed additional capacity analyses for the proposed project in early 2013. Based upon that analysis, it was determined that a three-lane cross-section is sufficient to accommodate both the existing ADT and the projected 2032 ADT at an adequate level of service. Congestion and delay through the study area are controlled by the corridor's intersections. The WVDOH analyzed each intersection to identify any locations where additional through lanes may be needed by 2032.

### **3.0 ENVIRONMENTAL EFFECTS AND MITIGATION**

The predominant social, cultural, and natural resources were identified within each alternative alignment and the extent of possible impacts calculated. Information used for the preliminary screening was refined and mitigation strategies developed. The potential impacts in each corridor are summarized in the following table.

**Summary of Impacts**

<b>Resource/Element</b>	<b>No-Build Alternative</b>	<b>Alignment C</b>	<b>Modified Alignment C</b>
Environmental Justice	Minimal	None	None
Tax Base	None	Negligible	Negligible
Business Displacements	0	3	1
Residential Displacements	0	4 occupied, 2 vacant	3 occupied, 5 vacant
Community Facilities and Services	0	1 church, 1 park-and-ride lot, 2 sliver takes at a school	1 church, 1 park-and-ride lot, 1 sliver take at a school
Community Cohesion	Unlikely	None	None
Farmlands	Minimal	5.9 acres	2.6 acres

<b>Resource/Element</b>	<b>No-Build Alternative</b>	<b>Alignment C</b>	<b>Modified Alignment C</b>
Parks and Recreation	Unlikely	0	0
Forested Land	Minimal	8.5 acres	6.9 acres
Developed Land	Minimal	43.6 acres	22.5 acres
Rare, Threatened, and Endangered Species	Unlikely	0	0
Jurisdictional Streams	Minimal	6,301 feet	2,105 feet
Floodplains	Minimal	12.3 acres	4.7 acres
Wetlands	Minimal	1.89 acres	1.46 acres
Groundwater	None	None	None
Air Quality	Consistent with <i>Clean Air Act</i> standards	Consistent with <i>Clean Air Act</i> standards	Consistent with <i>Clean Air Act</i> standards
Noise	10 residences	3 residences	3 residences
Potentially Hazardous Waste Sites	Minimal	2	1 sliver take
Cultural Resources (NRHP-Listed/Eligible)	0	0	0
Utilities	0	Minimal	Minimal
Secondary Impacts	Minimal	Minimal, likely to be positive	Minimal, likely to be positive
Cumulative Impacts	Likely to be mostly positive	Likely to be mostly positive	Likely to be mostly positive
Temporary Construction Impacts	Yes	Yes	Yes
Energy	Most likely positive	Positive	Positive
Section 4(f) Resources	0	0	0
Cost	Project Dependent	\$16.0 million	\$12.3 million

#### **4.0 IDENTIFICATION OF A PREFERRED ALTERNATIVE**

There will be equal or fewer impacts to all resources with construction of Modified Alignment C. Additionally, Modified Alignment C will cost less to build than Alignment C. As a result, it is being identified as the preferred alternative for the project.

## **1.0 INTRODUCTION**



## **1.0 INTRODUCTION**

This Environmental Assessment (EA) is being prepared for the Federal Highway Administration (FHWA) by the West Virginia Department of Transportation, Division of Highways (WVDOH), to fulfill requirements set forth in the *National Environmental Policy Act of 1969* (NEPA); the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU); and the *Moving Ahead for Progress in the 21<sup>st</sup> Century Act* (MAP-21).

NEPA requires that the potential for environmental impacts be assessed for every federal action that could “significantly affect the quality of the human environment.” Three types of environmental documentation are used to comply with NEPA requirements. They are:

- Environmental Impact Statements (EIS) – Prepared when it is known that projects will have a significant effect on the environment.
- Categorical Exclusions (CE) – Prepared for projects that meet specific definitions in 40 Code of Federal Regulations (CFR) 1508.4 and do not involve significant environmental impacts.
- Environmental Assessments – Prepared when the significance of the potential environmental impact of projects is not clearly established.

Transportation projects vary in their potential to affect the environment and this project is no exception. The WVDOH has tentatively determined that the Melissa-Huntington Road Project will impact the environment, but the significance of those impacts is unclear. Additionally, this project does not meet the requirements of 40 CFR 1508.4. Thus, it is being advanced with an EA.

The methodologies, analyses, and public participation activities used to support this EA comply with SAFETEA-LU and MAP-21, as well as other regulations established by the Council on Environmental Quality and the FHWA Technical Advisory 6640.8A, *Guidelines for Preparing and Processing Environmental and Section 4(f) Documents* (October 30, 1987).

A public scoping meeting for the project was held on October 15, 2013, at the Huntington High School. Approximately 25 people attended. Although the WVDOH provided the opportunity to offer comments at the scoping meeting and following the meeting, no comments were submitted. When ready for formal distribution, this EA will be made available to the public for a

45-day review period. An informational workshop/public hearing will be scheduled at the beginning of the review period. A notice of at least 15 days will precede the informational workshop/public hearing.

Following the close of the review period, all public and agency comments will be evaluated. Only after all comments have been examined and any necessary analysis completed to address additional public or agency concerns will a determination of the significance of the impacts be made. If after completing the EA there are no significant impacts associated with the project, a finding of no significant impact (FONSI) will be prepared. If at any point in the process, however, it is discovered that the project would result in significant impacts, an EIS will be prepared.

## **1.1 Project Description**

The proposed Melissa-Huntington Road Project is in Cabell County, West Virginia. The study area is defined approximately as existing WV 10 near Interstate 64 (I-64) at Exit 11 from Woodville Drive (County Route [CR] 46) to approximately Cedar Crest Drive (CR 44) just west of Melissa. The length of the proposed project is about 2.25 miles. The roadway is known locally as 16<sup>th</sup> Street Road.

Within the I-64 Exit 11 interchange area, WV 10 is a four-lane facility, but it quickly “necks-down” to two lanes as the road travels eastward into the project area. By the time WV 10 reaches Woodville Drive (about 0.4 miles from the Interstate overpass), it is at two lanes and remains that way throughout the study corridor. The two-lane sections of WV 10 in this area generally have ten-foot lanes and one-foot shoulders on each side of the road. Figure 1-1 shows the study area in its regional context.

Traveling westward from Exit 11, WV 10 (16<sup>th</sup> Street Road) becomes 16<sup>th</sup> Street and provides a major gateway into the City of Huntington. The City of Huntington, the county seat and largest populated place in the area (current estimated U.S. Census population – 49,160), is about one mile northwest of the study area (United States Census Bureau [USCB] 2010). While the project area is primarily residential in nature, many government-related, retail, educational, and personal services are available in Huntington. The total population of Cabell County is 96,319 (USCB 2010).

The current roadway is classified as a rural collector and serves several residential subdivisions located in the vicinity. The roadway roughly follows the path of Fourpole Creek, Grapevine Branch (a tributary of Fourpole Creek), and an unnamed tributary of the Right Fork of Davis Creek. The topography is generally rolling, but there are many sharp horizontal curves on the road. While the project area is mostly residential, there are several commercial businesses and industrial facilities scattered throughout it. Huntington High School and Hite-Saunders Elementary School are also located within and just outside of the immediate project area. Thus, there is a mix of traffic accessing different local land uses as well as traveling through the area.

## **1.2 Project History**

Transportation improvements along WV 10 between the City of Huntington and the community of Melissa have been studied since the late 1960s and early 1970s. As was common practice at the time, and in anticipation of a (then) pending project, some right-of-way was purchased by the State of West Virginia in the project area. If that early project had been advanced to construction, the right-of-way would have been utilized for an improved two-lane roadway.

The proposed project was dormant for many years, but in the 1990s, the KYOVA Interstate Planning Commission (KYOVA), the officially-designated metropolitan planning organization (MPO) for Cabell County and the surrounding region, analyzed traffic patterns in the area and recommended that WV 10 be upgraded. The MPO has been active in the development of the project and throughout the planning process and participated in a recent project scoping meeting to update and revive the project. An EA was approved for the project by FHWA and WVDOH in October 2002, but not carried through to a FONSI. That effort is being reevaluated through the preparation of this EA.

## **1.3 Purpose and Need**

The proposed project has both independent utility and logical termini. Independent utility requires that a roadway be “usable and be a reasonable expenditure even if no additional transportation improvements in the area are made” (FHWA 1993). Similarly, as defined by the FHWA, logical termini are “rational end points for a transportation improvement and rational end points for a review of the environmental impacts” (FHWA 1993). For this project, logical termini have been set at the I-64 interchange area and CR 44. The I-64 interchange functions as a

logical terminus because it provides major opportunities to access the regional transportation network into Huntington, other parts of Cabell County, and beyond. Likewise, CR 44 functions as a logical terminus because the area generally transitions from suburban-type development to a more rural landscape and traffic is expected to lessen near this point.

A specific purpose and need statement was established for the project through the planning efforts. As presented during those previous efforts, the project's needs are:

- To alleviate traffic congestion and improve level of service in the study corridor;
- To improve safety;
- To provide efficient access to the Huntington metropolitan area and Huntington High School; and,
- To stimulate economic development for the area.

### Traffic Congestion

Traffic on WV 10 generally increases from east to west. In 2007, average daily traffic (ADT) on WV 10 near Green Valley Road was approximately 8,500, but nearly double at approximately 16,000 at Exit 11 (WVDOH 2007 and 2010a). Traffic is growing faster than expected. Projections prepared in 2000 indicated that traffic would reach 19,400 ADT at Exit 11 in 2020, but it has nearly reached that level already (WVDOH 2010a).

Level of Service C, or LOS C, is a measure of traffic efficiency. LOS A represents the best operation of a roadway and LOS F represents the worst. Most new transportation facilities are designed to operate at LOS C (Institute of Transportation Engineers [ITE] 2009). Figure 1-2 illustrates the concept of LOS.

Except for the area immediately surrounding Exit 11, WV 10 is functioning at LOS D now. Based on traffic projections prepared for the WVDOH in 2000, level of service is expected to deteriorate by 2020. At the intersection of WV 10 with Highlander Way (CR 10/14), recurring congestion currently exists during peak hours resulting from school arrival and dismissal at Huntington High School. Congestion is pronounced on WV 10 northbound in the AM peak period. Within the interchange area, LOS will decrease from LOS C to LOS D in 2020.

WVDOH performed additional capacity analyses for the proposed project in early 2013 to evaluate build alternatives for the project. Based upon that analysis, it was determined that a three-lane cross-section is sufficient to accommodate both the existing ADT and the projected 2032 ADT at an adequate level of service (WVDOH 2013).

WV 10 in the remainder of the project area is operating at LOS C or better. Generally, the side road intersections with WV 10 are the controlling factors throughout the corridor. Conditions could worsen from Huntington High School Road to Green Valley Road (CR 35), however, as the area becomes more attractive for future residential development and suburban-type businesses. A complete analysis of current and future traffic conditions is found in Chapter 2 of this EA.

### Safety

Cabell County has experienced a considerable number of vehicle crashes (WVDOH 2003). Throughout the entire state, the county has both the highest crash rates per hundred million vehicle miles traveled and the highest injury rate per hundred million vehicle miles traveled.

Cabell County also had the second highest number of crashes in the state, the fifth highest number of fatalities in the state, and the second highest amount of injuries from crashes. Along WV 10 within the study area, there were 23 crashes between July 1, 2004 and June 30, 2007 (WVDOH 2011a). This translates to a crash rate of 2.98 crashes per 1,000,000 vehicles entering the study area. This is only slightly lower than the statewide crash rate of 3.06 (WVDOH 2003). Of the crashes that occurred, 12 of them resulted in bodily injuries. There were no fatalities during the same period.

### Access

Transportation access within the project area is heavily influenced by land use, the proximity of the City of Huntington, and the location of I-64. The area is suburban in nature with a mixture of single-family homes; commercial and industrial businesses, a few community facilities, and open space. Commercial development is concentrated around the I-64 interchange, but there are also some businesses along WV 10 anchored by another concentration of local businesses at the project's southern terminus. Residential development is found throughout the study area

at relatively low density, but land use is gradually shifting from rural in nature to having low-density suburban characteristics.

### Economic Development

While the local economy is somewhat diversified, it has been traditionally dependent on heavy manufacturing and the rail and coal industries for jobs and development. Generally, WV 10 has been a key route for people and materials accessing the southern coal fields or transporting commodities from there to processing centers. A key component of the area's future economic development strategy was the creation of Kinetic Park, a 95-acre business park located just north of Exit 11. Although relatively little development occurred during the park's first decade, Kinetic Park is now home to approximately 800 jobs, including an Amazon.com customer center, a new car dealership, two hotels, a family-style restaurant, and several professional offices. The business park will continue to be marketed and will eventually be built-out. When that occurs, there will be additional pressure on surrounding land and throughout the corridor. As more land is also developed for residential use, land use and traffic conflicts will become more apparent.

### Validity of Purpose and Need Statement

A thorough review of conditions in the area indicates that the social and economic environment, traffic, and safety conditions have remained relatively the same as in the past. Thus, the purpose and need statement developed during the original planning process remains valid today and will be used to guide the remainder of this EA.

## **1.4 Intermodal Facilities**

Intermodal facilities include air, rail, public transit, and Ohio River ports. Regularly scheduled air service is provided at the Huntington Tri-State Airport, located off I-64 Exit 1 in Kenova, West Virginia, about three miles from downtown Huntington. The airport's main runway is over 7,000 feet. It is the second longest runway in West Virginia and the longest runway operating for commercial service. Currently, commercial service is provided by Allegiant Air, Delta, and US Airways. The Huntington Jet Center is also located at the airport and provides full service,

fixed-base operations for the general aviation industry. Land development opportunities are also available adjacent to the runway.

Public transit service is provided by the Tri-State Transit Authority (TTA). Regularly scheduled bus service and paratransit service is provided in and around Huntington and the City of Ironton, Ohio. Additional bus service is provided in neighboring Ashland, Kentucky, by the Ashland Bus System. Connections are available between the two systems. TTA's Route 8, Hal Greer/John Marshall Medical System provides bus service from downtown Huntington along 16<sup>th</sup> Street (WV 10) as far as Huntington High School. There is no service further along WV 10 in the study area. The TTA carries approximately 60,000-65,000 people per month (Charleston Gazette 2011).

CSX, Norfolk Southern, and Amtrak all operate in the area from mainline tracks. Nearby industrial operations and coal mining facilities are also served by branch lines and rail sidings. None of these lines extend into the study area. With its location on the navigable Ohio River and its proximity to major coal fields in West Virginia, Ohio, and Kentucky, the Huntington area is one of the nation's busiest inland ports, especially for coal tonnage. There are over 30 loading facilities along the river in the area.

### **1.5 Consistency with Other Plans**

The proposed project is consistent with state, regional, and local plans. At the state level, the project is consistent with both the *West Virginia Multi-Modal Statewide Transportation Plan* (WVDOH 2010b) and the *Statewide Transportation Improvement Plan: 2014-2019* (WVDOH 2014), West Virginia's principal long- and short-range transportation planning documents. The Multi-Modal Statewide Transportation Plan is a policy document that evaluated current needs, revenue, and expenditures across all transportation modes. It evaluated WV 10 from Chapmanville to Huntington along with other priority projects to lay the planning foundation for future improvements. The WV 10 corridor was identified within the Multi-Modal Statewide Transportation Plan as an important element of the state highway network; it was recommended for upgrading to four lanes throughout its entire length. The Statewide Transportation Improvement Plan (STIP) is the fiscally-balanced, six-year plan of transportation improvements in West Virginia. Funding for design, right-of-way, and construction are programmed for WV 10 improvements during the period of FFY 2014-2019.



At the regional level, the project is listed in the short-range element of the *Biennial Report, Huntington-Ironton Transportation Study, 2014-2017 Transportation Improvement Program* (KYOVA 2013a). The Transportation Improvement Program, or TIP, is a biennial document of transportation funding and spending for the area. The project is also listed in the *Huntington-Ironton Transportation Study Year 2040 Long-Range Transportation Study* (KYOVA 2013b). Besides being listed on the long-range transportation plan, the project meets all eight goals of the plan's vision statement. Those goals are:

- Goal #1, Preserve and maintain the existing transportation system;
- Goal #2, Support the economic vitality of the region, especially by enabling global competitiveness, productivity, and efficiency;
- Goal #3, Improve the operational efficiency of the transportation network;
- Goal #4, Enhance the safety of the transportation community;
- Goal #5, Enhance the security of the transportation community;
- Goal #6, Protect and enhance the environment and promote energy conservation;
- Goal #6, Maximize the social benefits of the transportation system;
- Goal #7, Enhance the connectivity of the transportation system, across and between modes, for people and freight; and,
- Goal #8, Maintain financial responsibility in the development and preservation of the transportation system.

At the local level, the project is consistent with the *Cabell County Land Use and Corridor Study* (KYOVA 2000). That study recommended upgrading WV 10 from I-64 to Salt Rock, a distance of five miles, to provide better access and congestion management while supporting economic growth in the area. The plan is also expected to be consistent with the Cabell County comprehensive plan that is currently under development.

The project will complement other projects associated with I-64 that have been programmed, begun, or completed since 2006. They include the WV 10 and Milton interchanges; WV 10 traffic signalization; interchange lighting; installation of weather stations and intelligent transportation systems; resurfacing; the Crossroads, Darnell Road, 16<sup>th</sup> Street, and Barboursville US 60 overpasses; Twelvepole Creek bridge; Hal Greer Boulevard improvements into Huntington; and signing renovations (KYOVA 2013a).



## **2.0 ALTERNATIVES**

## **2.0 ALTERNATIVES**

A broad range of alternatives has been evaluated throughout the course of the project. The alternatives that have been examined include a no-build alternative, a transportation system management (TSM) alternative, a mass transit alternative, and four build alternatives.

### **2.1 No-Build Alternative**

The No-Build Alternative serves as the benchmark against which the build alternative is evaluated. The No-Build Alternative incorporates planned improvements in the region from both the TIP (KYOVA 2009a) and the long-range transportation plan (KYOVA 2009b). The No-Build Alternative was carried through the entire planning and environmental processes.

### **2.2 Transportation Systems Management Alternative**

Through better management of the existing transportation system, TSM-type improvements may provide better operational control of existing levels of congestion. Often erroneously considered to always be a low-cost improvement, TSM alternatives can, in fact, be quite expensive. Typically, they include grade separations, widening shoulders, minor realignments, signalization, channelization, pavement striping, and/or adding turning lanes. They can also include improvements related to ridesharing, bicycling, or pedestrian access. Oftentimes, capital improvements are combined with other transportation enhancements in an effort to provide better overall transportation than any individual improvement strategy can achieve.

Unfortunately, the geometric constraints of the existing roadway limit the types of TSM measures that could be used in the study area. Intersection improvements, such as signalization and channelization alone, would not address mainline capacity deficiencies. The low density of residential and commercial land use along the existing roadway does not lend itself easily to ridesharing programs, walking, or biking as an effective means of regular travel. Although these and similar TSM measures would result in localized traffic safety and operational improvements, they would not be as effective in the study area as in more densely developed locations. Thus, the TSM Alternative was judged not to meet the project's purpose and need and was eliminated from further consideration.

### **2.3 Mass Transit Alternative**

Although the local transit authority provides bus service to the northwestern edge of the study area, it does not penetrate the heart of the project area. Typically, potential transit users will walk no further than a quarter-mile to a bus stop. As currently configured, the route system of the TTA makes it nearly impossible for individuals living or working within the study area to use public transportation on a regular basis.

Even if existing bus routes were expanded to provide service further east than currently exists, the residential and commercial densities within the heart of the project area would not easily support public transit. While some people in the area would utilize bus service if it were available, the level of service that could be offered under current budget capacity would likely be low. Without significant schedule headways to and from Huntington, a newly expanded bus service would fail to attract enough ridership to have any impact on car usage. Additionally, past transportation research has determined that mass transit alternatives are only relevant in areas with a population of over 200,000 (FHWA 1987). The current population of Cabell County is less than 100,000 and population densities in the study area's neighborhoods are very low. Thus, the Mass Transit Alternative was shown to be ineffective in meeting the project's purpose and need and was eliminated from further consideration.

### **2.4 Preliminary Build Alternatives**

Following initial screening and a preliminary alternatives analysis, three alignments (Alignments A, B, and C) were originally developed as part of the build alternative. After the initial screening was completed, however, Alignments A and B were dropped and one of the build alternatives, Alignment C, was modified to better meet the project's overall goals, reduce the impact to the local community, and match current budget constraints. Subsequently, two build alignments and the No-Build Alternative were advanced for further analysis.

#### **2.4.1 Alignment A**

In the late 1960s, a two-lane improvement was first suggested for the area. Although that idea was not advanced to construction, Alignment A would have been a four-lane facility utilizing a 50 miles per hour (mph) design criteria. Although Alignment A would have required the

displacement of 24 homes and 7 businesses, it would also have required some modification to the channel of Grapevine Branch, one of the streams adjacent to WV 10. The stream would not have been crossed by the improved roadway and always kept to the south of the proposed new alignment. Alignment A was dropped from further consideration after the initial screening because of the number of potential residential and business displacements. Consequently, other alternatives were judged better able to meet the purpose and need of the project and have fewer impacts.

### **2.4.2 Alignment B**

Alignment B would have been a four-lane facility that met a 60 mph design criteria, but would have required considerably more excavation than Alignments A or C. To meet the proposed design criteria at this location, Alignment B would have required a series of reverse curves that could not have been tightened to fit the valley sides of Grapevine Branch, greatly increasing the project's footprint. As a result of this expanded project footprint, Alignment B would have required more earthwork than either of the other two build alternatives. Not only would the additional earthwork increase the environmental impact, requiring four crossings of Grapevine Branch, it would have required more residential property than either Alignments A or C. Traffic studies also indicated that a 60 mph design would be more than necessary for the area. Thus, because of the potential to have greater environmental and socioeconomic impacts, as well as considerably higher construction costs, Alignment B was dropped from further consideration early in the analytical process.

### **2.4.3 Alignment C**

Alignment C would be a four-lane facility similar to Alignment A, but would provide for gentler horizontal curves. As a result, drivability and safety would be greatly improved. It would also be less intrusive than Alignment B and require only two crossings of Grapevine Branch. It follows the floodplain of Grapevine Branch more closely than the other proposed alignments, allowing for a reduction in the required footprint should this alternative be taken to construction. Of all the build alignments analyzed to this point, Alignment C best met the project's purpose and need while minimizing social and environmental impacts. If built, Alignment C would be expected to alleviate traffic congestion, improve access to Huntington High School, improve safety, and stimulate economic development.

Alignment C will begin on WV 10 approximately at the eastbound ramp entrance to I-64. It will proceed generally in an easterly direction from its terminus near to a point just short of Cedar Crest Drive (CR 44). New intersection connections will be constructed at High School Road, Woodville Drive (CR 46), Mount Union Road (CR 39), James Kilowatt Road (CR 10/15), Norwood Road (CR 35 north), and Green Valley Road (CR 35 south). The length of this alternative is approximately 2.3 miles.

Alignment C was judged to meet the project's purpose and need and was carried forward for additional study. Alignment C is shown on Figure 2-1.

#### **2.4.4 Modified Alignment C**

Before the selection of a preferred alternative occurred, the engineering design was modified and shifted in an effort to minimize potential impacts to socioeconomic and natural resources. The modified alignment, as shown on Figure 2-2, tightened the potential project's footprint by reducing the number of lanes and shifting a small segment of the roadway. As a result, it was able to minimize residential displacements and reduce potential impacts to wetlands and streams (especially by limiting crossings of Grapevine Branch to two locations on 16<sup>th</sup> Street Road and two locations on side streets). Modified Alignment C would consist of a three-lane roadway with an 11-foot travel lane in each direction and a center turning lane. The roadway would also feature paved shoulders on both sides of the road varying from 4 to 8 feet.

The proposed roadway improvement will begin on WV 10 approximately at the eastbound ramp entrance to I-64. It will proceed generally in an easterly direction from its terminus near to a point just short of Cedar Crest Drive (CR 44). New intersection connections will be constructed at High School Road, Woodville Drive (CR 46), Mount Union Road (CR 39), James Kilowatt Road (CR 10/15), and Green Valley Road (CR 35 south). The intersections at Norwood Road (CR 35 north) and Orchard Road will be reconfigured to utilize a portion of existing WV 10 as a local access street rather than a throughway. The length of this alternative is approximately 2.3 miles.

Modified Alignment C was also judged to meet the project's purpose and need and was carried forward for detailed study. This allowed for a comparison of two build alternatives, one of which

is a four-lane facility (Alignment C) and the other a three-lane facility (Modified Alignment C). The orientation of both alignments (C and Modified C) is shown on Figure 2-3.

## 2.5 Highway Design Criteria

Current design and typical sections were developed from information in the American Association of State Highway and Transportation Officials (AASHTO) publication, *A Policy on the Geometric Design of Highways and Streets* (2011) and the WVDOH *Design Manual and Directives, DD-601, Geometric Design Criteria for Rural Highways* (2006). The design criteria for both Alignment C and Modified Alignment C are shown in Table 2-1.

**TABLE 2-1  
Design Criteria**

<b>Design Element</b>	<b>Alignment C Criteria</b>	<b>Modified Alignment C Criteria</b>
Functional Classification	Minor Arterial (Rural)	Minor Arterial (Rural)
Design Speed	50 mph	40 mph
Maximum Grade	7 percent	2.66 percent
Access Control	Partial control at intersections and driveways	Partial control at intersections and driveways
Number of Lanes	4 (2 in each direction, with turning lanes at selected intersections)	3 (1 in each direction with center turning lane)

Figure 2-4 shows a typical section for Alignment C. Figure 2-5 shows a typical section for Modified Alignment C. The entire project is represented accurately by the typical section.

## 2.6 Traffic Analysis

Traffic analyses were conducted for the original project. That information was updated in 2013 and incorporated into the EA.

### 2.6.1 Traffic Modeling

A traffic demand model was used to estimate trip production, traffic assignment, and the amount of traffic potentially diverted from existing roadways to a build alternative for a 20-year design year. In 2007, average daily traffic (ADT) on WV 10 near Green Valley Road reached 9,200 ADT and 19,100 ADT at the Exit 11 interchange area (WVDOH 2007). Projections prepared in

2000 indicated that traffic would reach 19,400 ADT at Exit 11 in 2020, but by 2010, it had already surpassed that level reaching 20,300 ADT (WVDOH 2010a).

### **2.6.2 Updated Traffic Analysis**

WVDOH performed additional capacity analyses on Modified Alignment C in early 2013. Based upon that analysis, it was determined that a three-lane cross-section is sufficient to accommodate both the existing ADT and the projected 2032 ADT at an adequate level of service (LOS). LOS describes the operation of a given roadway by establishing a range of “A” to “F.” LOS A represents the best operation of a roadway, and LOS F represents the worst.

Congestion and delay through the study area are controlled by the corridor’s intersections. Consequently, the WVDOH analyzed each intersection to identify any locations where additional through lanes may be needed by 2032. Specifically, the need for future traffic signals was considered and further analysis performed to ensure that each intersection would operate at an adequate level of service.

When the project was originally developed, it was proposed as a five-lane section with two through lanes in each direction separated by a two-way left turn lane. The current ADT for WV 10 is 16,000 north of Highlander Way (CR 10/14) and decreases to 8,500 south of Highlander Way. The 2012 ADT remains 8,500 continuing south until Norwood Road (CR 35 north), where it decreases to 6,400 (WVDOH 2010a).

Utilizing *McTrans Highway Capacity Software* (University of Florida 2010), the WVDOH has determined that a three-lane cross section is sufficient to accommodate both the existing ADT and the projected 2032 ADT at an adequate level of service (HCS 2010). Congestion and delay on this corridor are controlled by the various intersections and, therefore, WVDOH also analyzed the major intersections to determine whether or not additional through lanes will be needed by 2032. Specifically, the need for future traffic signals was considered and further analysis was performed to ensure that the various intersections will operate at an adequate level of service if traffic signals were installed.

At the intersection of WV 10 with Highlander Way (CR 10/14), recurring congestion currently exists during peak hours resulting from school arrival and dismissal at Huntington High School.

The analysis indicates that the congestion is pronounced on WV 10 northbound in the AM peak period. This intersection is currently signalized. Providing an additional through lane at this intersection will improve the level of service and allow the intersection to function properly through 2032.

The intersection of WV 10 with Woodville Drive (CR 46) is currently stop-controlled and is located approximately 500 feet south of Highlander Way. The lane configuration consists of a single lane in each direction with a shared left and right turn lane on Woodville Drive. Currently, the Woodville Drive approach operates at LOS C while traffic on WV 10 travels unimpeded with little delay. A review of the existing turning movement count indicates that a traffic signal is not currently warranted, but that the volumes are approaching the limits of FHWA criteria (FHWA 2009). Therefore, the need for installation of a traffic signal at this location is likely prior to 2032. Based upon the WVDOH analysis and the proximity of this intersection to Highlander Way, it is recommended that the five-lane cross section be extended to a point just south of Woodville Drive so that two through lanes are provided on WV 10 through the intersection. It is also recommended that separate left and right turn lanes be provided on the Woodville Drive approach to WV 10. If all roadway improvements are implemented along with future installation of a traffic signal, the intersection it is expected to operate at LOS C in 2032.

The intersection of WV 10 with Mount Union Road (CR 39) is currently stop-controlled. The lane configuration consists of a single lane in each direction on WV 10 and a shared left and right turn lane on Mount Union Road. Currently, the Mount Union Road approach operates at LOS C while traffic on WV 10 travels unimpeded with minimal delay. A review of the existing turning movement count indicates that a traffic signal is not currently warranted. Further review of 2032 projected volumes indicates that a signal may be needed in the next 20 years. For purposes of analysis, the WVDOH assumed that the intersection would be signalized by 2032. Under this scenario, the intersection operates adequately with a single through lane in each direction in conjunction with the proposed two-way left turn lane. Based upon the analysis, the WVDOH recommended that Mount Union Road be widened to provide separate left and right turn lanes approaching WV 10. A right turn lane would also be beneficial on the WV 10 southbound approach. If the proposed roadway improvements are implemented and a signal is not installed, WV 10 will continue to operate with minimal delay and the Mount Union Road approach will operate at LOS B with current volumes and will maintain LOS C in 2032. If a signal is eventually installed, the overall intersection will continue to operate well with improved



operation on Mount Union Road and increased delay on WV 10, but still be projected to be LOS B or better.

The intersection of WV 10 with James Kilowatt Road (CR 10/15) is stop-controlled and has divided ingress and egress. A total of five cars were recorded leaving the minor approach for the 8-hour turning movement count. The side street approach currently operates at LOS A and will decrease to LOS C by 2032. However, WV 10 will continue to operate with minimal delay at this location.

The intersection of WV 10 with Norwood Road (CR 35 north) is currently stop-controlled. The lane configuration consists of a single lane in each direction on WV 10 and a shared left and right turn lane on Norwood Road. The Norwood approach to WV 10 currently operates at LOS C while WV 10 operates with minimal delay. The proposed alignment of WV 10 will bypass the current intersection of Norwood Avenue and two new intersections will be created. It is assumed that the majority of traffic that is currently turning right from the minor approach will move to the new intersection to the north and the left volume will move to the new intersection to the south. The same assumptions were made for entering traffic from WV 10 as well. All intersections will operate at LOS C or better.

The intersection of WV 10 with Green Valley Road (CR 35 south) is currently stop-controlled. The lane configuration consists of a single lane in each direction on WV 10 and a shared left and right turn lane on Green Valley Road. Hite Saunders Elementary School is located on Green Valley Road just west of WV 10. Being impacted by school arrival and dismissal, short-lived periods of congestion occur on Green Valley Road. Under normal conditions, Green Valley Road operates at LOS C while WV 10 operates with minimal delay. A review of existing intersection volumes shows that a traffic signal is not currently needed. Further review of 2032 projected volumes indicates that a signal may be needed in the next 20 years. For purposes of analysis, the WVDOH assumed that the intersection would be signalized by 2032. Under this scenario, the intersection operates at a good LOS with a single through lane in each direction in conjunction with the proposed two-way left turn lane. Based upon the analysis, WVDOH recommended that Green Valley Road be widened to provide separate left and right turn lanes approaching WV 10. If the proposed roadway improvements are implemented and a signal is not installed, WV 10 will maintain LOS C in 2032. If a signal is eventually installed, the overall

intersection will continue to operate well, with improved operation on Green Valley Road and increased delay on WV 10. It will still operate at LOS B or better, however.

The proposed three-lane widening ends just 500 feet north of CR 44. This intersection's existing configuration is stop-controlled and has a shared right and left turn lane on the minor approach. The existing LOS of this intersection is B. WVDOH recommends that CR 44 be widened to provide separate left and right turn lanes approaching WV 10. With the proposed roadway improvements, this intersection will operate at a high LOS in 2032. This intersection is not likely to be signalized by 2032.

The intersection of WV 10 with WV Alternate 10 (ALT 10) is stop-controlled. This intersection is located within the community of Melissa and is not currently within the proposed limits of the project. It was included in this traffic analysis as an additional control point for potential future upgrades of WV 10. Currently, the ALT 10 approach operates at LOS C and with separate left and right turn lanes. The projected volumes indicate that the ALT 10 approach could deteriorate to a poor level of service by 2032 without a traffic signal.

## **2.7 Public Involvement Activities**

A public scoping meeting for the project was held on October 15, 2013, at the Huntington High School. The meeting was held in a workshop format, allowing members of the public and public officials to discuss the project individually with WVDOH staff. Staff members present at the meeting included personnel from the WVDOH design, environmental, and right-of-way sections, as well as FHWA. A brochure was distributed at the meeting and posted to the WVDOH website both prior to and after the meeting. Also at the meeting, full-scale maps were presented to the public with information on purpose and need and potential environmental impacts. Illustrations of both Alignment C and Modified Alignment C were presented.

Approximately 25 people attended, including local residents, business owners, representatives from the KYOVA Metropolitan Planning Organization, and elected officials. Although the WVDOH provided the opportunity to offer comments at the scoping meeting and following the meeting, no comments were submitted.

When ready for distribution, the EA will be available on the WVDOH web site and placed in various locations throughout the local area for public review. It will also be distributed to state and federal agencies for review and comment.

A second public meeting/workshop or a public hearing will be held to allow local residents, business owners, and public officials an opportunity to comment on the EA. The comment period for the EA will extend for 45 days. Public comments on the EA will be reviewed and addressed by the WVDOH and included in subsequent documentation for the project.

## **2.8 Cost Estimates**

Preliminary construction cost estimates were developed for Alignment C and Modified Alignment C. The construction cost estimates were developed using unit costs from similar type projects, calculated during final design studies. The cost for constructing Alignment C has been estimated at \$16.0 million. The cost for constructing Modified Alignment C has been estimated at \$12.3 million.

## **2.9 Comparison of Alternatives**

Utilizing secondary data provided by local, state, and federal agencies, and recent field reconnaissance, the natural resources and major manmade features of the area were identified. Natural resources inventoried through updated field studies and secondary data included soils and geologic features, land cover/use, wetlands, streams, floodplains, and threatened and endangered species. Manmade features included community facilities, residential units, businesses, and cultural resources. A comparison of the potential impacts of Alignment C and Modified Alignment C is shown in Table 2-2.

**TABLE 2-2  
Preliminary Alternatives Screening**

<b>Resource/Element</b>	<b>No-Build Alternative</b>	<b>Alignment C</b>	<b>Modified Alignment C</b>
Wetlands	Minimal	1.89 acres	1.46 acres
Streams/Water Quality	Minimal	6,740 feet	2,744 feet
Floodplains	Minimal	12.3 acres	4.7 acres
Forested Land	Minimal	8.5 acres	6.9 acres
Agricultural Land	None	5.9 acres	2.6 acres
Parks and Recreation	None	0	0

**TABLE 2-2 (Continued)  
Preliminary Alternatives Screening**

<b>Resource/Element</b>	<b>No-Build Alternative</b>	<b>Alignment C</b>	<b>Modified Alignment C</b>
Rare, Threatened & Endangered (RTE) Species	Unlikely	0	0
Residential Displacements	Limited, if any	4 occupied, 2 vacant	3 occupied, 5 vacant
Other Displacements	None	3 businesses, 1 church, 1 WVDOH park-and-ride lot, sliver takes at Hite-Saunders Elementary School	1 business, 1 church, 1 WVDOH park-and-ride lot, sliver take at Hite-Saunders Elementary School
Community Cohesion	No impact	Minimal	Minimal
Cultural Resources (NRHP-Listed/Eligible)	None	0	0
Land Area	Minimal	0.09 sq. miles	0.05 sq. miles
Length	N/A	2.3 miles	2.3 miles
Cost	N/A	\$ 16.0 million	\$12.3 million

The modified design was able to reduce potential residential displacements by one occupied unit and business displacements from three to one. It would also have fewer impacts to wetlands, streams, floodplains, forested land, and agricultural land. Both alignments would take a church and require a sliver take of property from the Hite-Saunders Elementary School. A complete analysis of the potential project impacts is provided in Chapter 3.0.

## **3.0 ENVIRONMENTAL EFFECTS AND MITIGATION**

### 3.0 ENVIRONMENTAL EFFECTS AND MITIGATION

The information in this chapter provides the analytical basis for comparison of the No-Build Alternative and the two build alternatives (Alignment C and Modified Alignment C). The No-Build Alternative is carried into detailed study as a baseline for establishing the potential resource impacts of any build alternatives under consideration. Each section within this chapter identifies the probable impacts to the resources of the project area and proposed mitigation efforts and strategies to address the potential impacts to the resources, where appropriate.

The Project Resource Checklist (Table 3-1) provides a brief overview of the environmental effects of the build alternatives. The checklist indicates if a specific feature or resource exists within the project area and includes the methods used to identify them.

**TABLE 3-1  
Project Resource Checklist**

<b>Feature or Resource</b>	<b>Not Present</b>	<b>Present</b>	<b>Method of Identification</b>
<b><i>Socioeconomics</i></b>			
Residences, Businesses		X	Field investigation; review of project mapping; and consultation with local officials
Community Facilities		X	Field investigation; review of project mapping; and consultation with local officials
Recreation Facilities		X	Field investigation; review of project mapping; and consultation with local officials
Environmental Justice Populations	X		Field investigation; review of project mapping; U.S. Census data; and consultation with local officials
Major Utilities		X	Field investigation; and review of project mapping
Community Cohesion		X	Field investigation; U.S. Census data; and consultation with local officials
<b><i>Natural Resources</i></b>			
Wetlands		X	Field identification; research; and National Wetland Inventory (NWI) mapping review
Streams, Rivers & Watercourses		X	Field identification; United States Geological Survey (USGS) map review; research; and agency consultation
Wild or Stocked Trout Streams	X		Field investigation; review of West Virginia Division of Natural Resources (WVDNR) background information; and other research
Groundwater Resources (i.e., wells, water supply)	X		Field investigation; consultation with local and state officials; and review of project mapping
Floodplains/Floodways		X	Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map review; review of project mapping; and other research
Navigable Waters	X		Field identification; USGS map review; and other research
Other Surface Waters (lakes, reservoirs, ponds)	X		Field identification; review of project mapping; research; and USGS map review

**TABLE 3-1 (Continued)  
Project Resource Checklist**

<b>Feature or Resource</b>	<b>Not Present</b>	<b>Present</b>	<b>Method of Identification</b>
National/State Scenic Rivers and Streams	X		Review of the National/State Scenic Rivers Inventory
Threatened or Endangered Species	X		Agency consultation
Unique Geological Resources	X		Field identification; USGS map review; and review of state geological data sources
Wildlife & Habitat Sanctuaries/Refuges	X		Agency consultation; field identification; and research
Sanctuaries/Refuges	X		Field identification; WV Atlas & Gazetteer map review; and USGS map review
Farmlands	X		Field identification; United States Department of Agriculture (USDA) soil datamart files; and USGS map review
Land Cover		X	Field investigation; Anderson Land Use/Land Cover review
State Game Lands, Forests, or Parks		X	Field identification; WV Atlas & Gazetteer map review; and USGS map review
Sensitive Air Quality Sites	X		Agency coordination
Sensitive Noise Sites		X	Field review; review of project mapping; and field testing
Potentially Hazardous Waste Sites	X		Field identification; review of project mapping; and research
<b>Cultural Resources</b>			
National Historic Landmarks	X		Field identification and National Park Service (NPS) National Natural Landmarks website review
NRHP-Eligible Sites/Districts	X		Field investigation; review of project mapping; and consultation with the State Historic Preservation Office (SHPO)
Known Archaeological Sites	X		Field investigation; consultation with SHPO; and Phase I archaeological survey
<b>Section 4(f) Resources</b>	X		Field investigation; consultation with SHPO; and consultation with local officials

The information in this chapter represents a summary of descriptive and analytical data. Additional information and other reports are found in the Project Technical Support Files. All of the information found in the project files will be available for public viewing during the comment period.

### **3.1 Socioeconomics**

The study area for the project encompasses a small portion of western Cabell County. The area is suburban in nature with a mixture of well-kept, single-family homes; businesses; a few community facilities; and considerable open space. Residential development is found throughout the project area but at relatively low density. There are about three dozen

businesses adjacent to and along the entire project corridor; some have clustered near the eastern and western project termini and near Norwood Road (WV 35 north). Development patterns within the immediate project area are heavily influenced by the proximity of the City of Huntington and the location of an Interstate highway interchange near the project's northwestern terminus.

### 3.1.1 Demographics

Demographic information examined for the project included population, minority status, income, housing, and employment. With a 2010 census population of 49,138, Huntington is West Virginia's second largest city, following Charleston closely by less than 2,300 (USCB 2010). Besides being the residential and commercial center of the county, Huntington is also the county seat of Cabell County and the location of Marshall University, one of West Virginia's major higher education institutes.

The population of West Virginia during the 2000 U.S. Census was 1,808,344 (USCB 2000). By 2010, the statewide population had grown to 1,852,994 (USCB 2010). The local area is not sharing in this growth, however. According to information from the U.S. Census, the population of Cabell County has dropped slightly from 96,785 in 2000 (USCB 2000) to 96,319 by the year 2010 (USCB 2010). Population in Cabell County peaked in 1960 when it reached 108,202. Population is expected to rebound soon, however. Population projections indicate that population loss will reverse over the next 20-25 years (WVU 2010a). Table 3-2 provides demographic overviews of Huntington and Cabell County as they relate to the entire state.

**TABLE 3-2  
Demographic Overview for the Year 2010**

Area	Population Characteristics					Individuals Below Poverty Level		Housing	
	Total Population	White	African Amer.	Other Minority	Age 65 & Over	Total	Percent	Units	Households
Huntington	49,138	42,701	4,226	2,211	7,469	14,741	30.0	25,146	21,847
Cabell County	96,319	88,228	4,816	3,275	15,411	20,131	20.9	46,169	40,671
West Virginia	1,852,994	1,739,961	63,002	50,031	296,479	329,833	17.8	881,917	746,419

Source: USCB 2010

Population within the immediate study area is more difficult to determine, but by looking further into census tracts and census blocks, estimates were developed. Census tracts are small,



relatively permanent statistical subdivisions of a county comprised of census blocks and block groups. Census blocks are areas bounded on all sides by visible features, such as streets, roads, streams, and railroad tracks, and by invisible boundaries, such as city, town, township, and county limits, property lines, and short, logical extensions of streets and roads. Generally, census blocks are small in cities (e.g., a block bounded by city streets), but census blocks in suburban or rural areas may be quite large and irregular in shape. Block groups are clusters of census blocks within the same census tracts. They usually contain between 600 and 3,000 people. Some data, such as information on poverty levels, are suppressed at the block group level to assure privacy for census respondents.

The study area approximates most of U.S. Census Tract (CT) 101.02 (Cabell County, WV), but more specifically, Block Group (BG) 2, BG 3, BG 4, and BG 5. This area encompasses the WV 10 corridor between the project's termini and much of the surrounding area. The project area's census block groups are shown on Figure 3-1. The total population of these block groups is 4,750.

There are 2,025 housing units within the study area, of which 1,869 are occupied. Approximately 97 percent of the population (4,598) is white, and approximately 15 percent of the population (722) is 65 years of age or older. Table 3-3 provides demographic information on all of the study area's block groups.

**TABLE 3-3  
Demographics of the Study Area**

Area	Population Characteristics					Individuals Below Poverty Level		Housing Units	
	Total Population	White	African Amer.	Other Minority	Age 65 & Over	Total	Percent	Total	Occupied
BG 2	1,749	1,708	6	35	258	233	13.3	736	677
BG 3	865	848	2	15	140	115	13.3	396	360
BG 4	824	805	12	7	118	110	13.3	366	329
BG 5	1,312	1,237	34	41	206	174	13.3	527	503
Total	4,750	4,598	54	98	722	632	13.3	2,025	1,869

Source: USCB 2010

Population in the county is expected to increase in the future, especially if current efforts to stimulate the local economy continue. Projections prepared by West Virginia University (WVU 2010a) show that the population of Cabell County could grow to 97,024 by the year 2035, a 0.7

percent increase. As a comparison, the population of West Virginia is expected to grow by 1.4 percent to 1,878,802 by the year 2035.

Statewide, the number of jobs stood at approximately 709,000 in 2008. Despite the recent economic downturn in the country, statewide employment is expected to grow in the short-term to about 714,000 by 2014 (WVU 2010b). Long-term projections predict employment will reach over 1 million by the year 2040 (West Virginia Development Office [WVDO] 2009).

Employment in Cabell County grew faster than it did statewide. In the year 2000, total employment in Cabell County stood at 63,623 (WVU 2009). By the year 2007, it had reached 66,847, an increase of 5.1 percent. Table 3-4 provides a list of the largest employers in Cabell County.

**TABLE 3-4  
Ten Largest Employers in Cabell County**

<b>Employer</b>	<b>Employees</b>
Alcon Manufacturing	Over 500
Cabell Huntington Hospital	Over 500
GC Services	Over 500
Huntington Alloys Corporation	Over 500
Marshall University	Over 500
PLC, DirectTV Group	Over 500
St. Mary's Hospital	Over 500
Steel of West Virginia, Inc.	Over 500
U.S. Department of Defense	200-499
Wal-Mart	200-499

Source: West Virginia Department of Commerce (WVDC) 2011

Cabell County's unemployment rate is lower than the rest of West Virginia. In October 2013, unemployment in the entire state was 5.6 percent. In Cabell County, unemployment was 5.4 percent (United States Department of Labor [USDOL] 2013).

In terms of per capita personal income, Cabell County ranked 8<sup>th</sup> in the state's 55 counties. Per capita personal income is \$30,646 in Cabell County and \$29,385 in West Virginia. Nationally, per capita personal income is considerably higher, averaging \$38,615. Approximately 21 percent of all people in Cabell County had incomes below the poverty level, but only 17.8 percent of all West Virginians had incomes below the poverty level. Nationwide, 13.2 percent of all Americans had incomes below the poverty level.

**3.1.2 Environmental Justice**

An analysis of potential environmental justice impacts was conducted early in the project. Executive Order 12898 of February 11, 1994, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, requires that the proposed project be assessed to determine whether or not it will have a disproportionately high impact on minority or low-income populations within the area (Office of the President of the United States of America [OPUSA] 1994). There are three fundamental principles at the core of environmental justice:

- 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 transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in, the receipt of benefits by minority and low-income populations.

The analysis utilized information from the U.S. Census for the year 2010: all of Cabell County; Cabell County CT 101.02, BGs 2, 3, 4, and 5; and the City of Huntington. Information on the geographic units used for the environmental justice screening (Cabell County, the City of Huntington, and four block groups) is found in Table 3-5.

**TABLE 3-5  
Demographic Information Used  
for Initial Environmental Justice Screening**

<b>Area</b>	<b>Total Population</b>	<b>White Population</b>	<b>Minority Population</b>	<b>Percent Minority</b>	<b>Individuals with Incomes Below Poverty Level</b>	<b>Percent Below Poverty Level</b>
CT 101.02, BG 2	1749	1708	41	2.3	233	13.3
CT 101.02, BG 3	865	848	17	2.0	115	13.3
CT 101.02, BG 4	824	805	19	2.3	110	13.3
CT 101.02, BG 5	1312	1237	75	5.7	174	13.3
Huntington	49,138	42,723	6,415	13.1	14,840	30.2
Cabell County	96,319	88,194	8,125	8.4	20,709	21.5

Source: USCB 2010

The analytical methodology employs a “quick-technique” comparative screening analysis measuring potentially impacted populations to determine if an environmental justice population would see a disproportionate impact when compared to the non-environmental justice populations. This methodology identifies a threshold for the study area and compares block

group data to that threshold. If block group data exceed the threshold, the potential for disproportionate effects to occur on that block group is judged to be present.

Following the initial screening, the analysis showed that none of the block groups in the study area exceeded the thresholds for minority populations in Cabell County or Huntington. In Cabell County, the threshold is 8.4 percent. In Huntington, it is 13.1 percent. All of the block groups under study have lower percentages than Cabell County or Huntington, indicating that there is unlikely to be an environmental justice impact to minority populations.

The analysis also showed that none of the block groups in the study area exceeded the thresholds for low-income populations in Cabell County or Huntington. In Cabell County, the threshold is 21.5 percent. In Huntington, it is 30.2 percent. All of the block groups under study have lower percentages than Cabell County or Huntington, indicating that there is unlikely to be an environmental justice impact to low-income populations.

It is likely that the type of projects constituting the No-Build Alternative would cause few, if any, residential or business displacements or create changes to existing community travel patterns. Consequently, the No-Build Alternative is expected to have a minimal effect – positive or negative – on environmental justice populations.

Although there will be some impacts to residential and business properties with either of the build alternatives, there will be few changes to existing community travel patterns with either Alignment C or Modified Alignment C. Consequently, based on the screening analysis done for this project, neither of the build alternatives will impact environmental justice populations.

### Mitigation

No mitigation is necessary, but the WVDOH will work to assure that minority populations and low-income individuals have full access to information on the project and understand the potential impacts from construction and operation of an improved highway facility. As the project progresses, positive benefits are expected that could increase family incomes and elevate the local standard of living. These benefits include new employment opportunities, initially from highway construction and related services, but also from future development associated with the improved road. Other benefits may result from improved transportation and

connectivity to other parts of Cabell County and adjacent counties where there are other employment opportunities.

If displacements of minority or low-income individuals occur, they would be mitigated by the following measures:

- Offering all displaced persons relocation advisory assistance and the appropriate monetary relocation benefits provided by law;
- Offering all displaced persons comparable decent, safe, and sanitary housing that is within their financial means and in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*;
- Developing noise mitigation strategies, if they are warranted, feasible, and reasonable; and,
- Maintaining safe pedestrian access during construction.

### **3.1.3 Tax Base**

As a result of the project, taxable land will be converted to transportation right-of-way. Although this loss of taxable land would result in an initial decrease of property tax revenues, additional tax revenues are likely to be generated as land is developed after the improved roadway is constructed. The total assessed value of all taxable land in Cabell County was \$1,285,000,000 in 2010 and approximately \$70,000,000 in real property taxes and personal property taxes was collected (Herald-Dispatch 2011).

With the No-Build Alternative, no properties would be removed from the tax base. Thus, there will be no impact on the county's tax base, positive or negative, with the No-Build Alternative.

With construction of a major roadway facility, a build alternative will relieve transportation and related socioeconomic problems associated with inefficiencies in the existing roadway system of the area. If not corrected, these continuing transportation problems could result in lost economic opportunities and contribute to the future loss of taxable property as businesses close and residents move away from the area. Properties within Alignment C represent 0.03 percent

of the county's tax base. Properties within Modified Alignment C also represent 0.03 percent of the county's tax base. Thus, if property is taken off the tax rolls for the proposed transportation improvement, the county will see a reduction of either \$385,500 or \$257,000 in the assessed value of taxable land for Alignment C or Modified Alignment C, respectively. Based upon the total assessed value that will be lost, the associated property tax losses resulting from construction of either Alignment C or Modified Alignment C would be negligible.

#### Mitigation

No mitigation for lost tax revenues is necessary. Mitigation for the business and residential displacements are discussed in the next two sections.

#### **3.1.4 Business Displacements**

There will be no immediate business displacements or loss of jobs with the No-Build Alternative, but the area could still see future economic losses. Existing downward business trends, currently common in the area, could continue without major transportation improvements or a concerted effort to stimulate the local economy.

There will be three business displacements with Alignment C. The potential business displacements are Taylor Construction, Inc., a small residential construction and renovation company located on WV 10 near James Kilowatt Road; Wooten Machine Shop, a small fabricator near Norwood Road; and Rich Oil Station, a gasoline fueling facility and very small convenience mart located at the corner of WV 10 and Green Valley Road. All businesses located along Alignment C are shown on Figure 3-2.

There will be one business displacement with Modified Alignment C. The potential business displacement is Taylor Construction, Inc. All businesses located along Modified Alignment C are shown on Figure 3-3.

#### Mitigation

Any business locations displaced by the preferred alternative will be offered the relocation benefits provided by the *Uniform Relocation and Real Property Acquisition Policies Act* and

applicable West Virginia laws. Assistance will be provided to the displaced business(es) to re-establish within the vicinity of the project area. It is anticipated that they/it can be relocated in the immediate area with relative ease.

### **3.1.5 Residential Displacements**

There will be no residential displacements as a result of the No-Build Alternative.

With Alignment C, there will be four occupied and two unoccupied or abandoned residential displacements. Figure 3-2 shows the locations of all residential units within and adjacent to this alternative. With Modified Alignment C, there will be three occupied and five unoccupied or abandoned residential displacements. Figure 3-3 shows the locations of all residential units within and adjacent to Modified Alignment C.

#### **Mitigation**

All properties to be acquired will be purchased in accordance with the *Uniform Relocation and Real Property Acquisition Policies Act, Title VI of the Civil Rights Act*, and applicable West Virginia laws. Specifically, the following *Title VI Statement* is offered:

It is the policy of the WVDOH to ensure compliance with the provisions of Title VI of the Civil Rights Act of 1964 and related civil rights laws and regulations which prohibit discrimination on the grounds of race, color, sex, national origin, age, or physical or mental handicap in all of their program projects funded in whole or in part by the FHWA. The WVDOH will not discriminate in highway planning, highway design, highway construction, right-of-way acquisitions, or the provision of relocation advisory assistance. This policy has been incorporated in all levels of the highway planning process to ensure that proper consideration may be given to the social, economic, and environmental effects of all highway projects. Alleged discriminatory actions should be addressed to the Title VI Program Coordinator, EEO Division, 1900 Kanawha Boulevard East, Building 5, Room 948A, Charleston, WV 25305.

Individuals and families displaced by the project will be offered the full extent of benefits and payments provided by these laws. Additionally, provisions will be made to assure that any person with a disability who is displaced is offered replacement housing that has been fitted to meet their special needs.

A review of the multi-list prepared by the local newspaper website, *Homes and Real Estate*, showed 438 properties currently available for sale in the vicinity of the study area (Herald-Dispatch 2013). The availability of those properties is noted in Table 3-6. The local newspaper also showed that there were five houses and 40 apartments for rent in the area.

**TABLE 3-6**  
**Availability of Residential Properties**

<b>Price Range</b>	<b>Number of Houses</b>	<b>Location</b>
\$0 - \$50,000	50	Huntington Area
\$50,001 – \$75,000	60	Huntington Area
\$75,001 – \$100,000	54	Huntington Area
\$100,001 - \$125,000	39	Huntington Area
\$125,001 - \$150,000	49	Huntington Area
Over \$150,000	186	Huntington Area
<b>Total</b>	<b>438</b>	

Source: Herald-Dispatch 2013

While it is likely that the current listings will not be available at the time of acquisition for this project, the information presented represents a cross-section of what is typically available for sale and rent in the area. Therefore, it provides a reasonable basis for projecting the probability of available housing units in the area at the time of property acquisitions. In the event that housing is insufficient for the needs of the persons displaced, *Housing of Last Resort* will be used.

During most transportation projects, there is adequate replacement housing available. However, when a housing shortage does occur, *Housing of Last Resort* elements (FHWA 2001) provide several options to create a suitable replacement property, including:

- Purchasing an existing comparable residential property and making it available to the displaced person in exchange for the displacement property.
- The relocation and rehabilitation (if necessary) of a dwelling purchased from the project area by the Agency and making it available to the displaced person in exchange for the displacement property.
- The purchase, rehabilitation, and/or construction of additions to an existing dwelling to make it comparable to a particular displacement property.



- The purchase of land for the construction of a new replacement dwelling comparable to a particular displacement property when comparables are not available.
- The purchase of an existing dwelling, removal of barriers, and/or rehabilitation of the structure to accommodate a handicapped displaced person when suitable comparable replacement dwellings are not available.
- A replacement housing payment in excess of the maximum \$5,250 or \$22,500 payment limits.
- A direct loan which will enable the displaced person to construct or contract for the construction of a decent, safe, and sanitary replacement dwelling.

### **3.1.6 Community Facilities and Services**

In consultation with local officials, public facilities and emergency services were identified within the study area. Police service in the area is provided by the Cabell County Sheriff's Department, located on Howell's Mill Road in Ona, east of the project area; and, the West Virginia State Police, located in Hamlin, south of the project area and on US 60 just east of Huntington, north of the project area. Fire protection services in the project area are provided by the Green Valley Volunteer Fire Department, located within the immediate study area along WV 10. Other emergency response services are provided by the Cabell County Office of Emergency Services in Huntington and Cabell County Emergency Medical Service with stations nearby in Huntington, Ona, Barboursville, and Milton, but all outside the immediate project area.

Schools located within the study area include Huntington High School and the Hite-Saunders Elementary School. A small playground, walking trail (the Hite-Saunders Nature Trail), and two baseball fields (the Adam Ballard Field and Frank Ray Field) on the Hite-Saunders school property are open to the public. Both of the baseball fields are associated with the Hite-Saunders Little League Association. Churches located with the project area include the Bible Apostolic Church and the Green Valley Baptist Bible Church. Other community facilities located in the project area are a WVDOH maintenance facility, a WVDOH-operated park-and-ride lot, and a family cemetery (the Ray Family Cemetery). All of the community facilities are shown on Figures 3-2 and 3-3.

The No-Build Alternative will not impact any community facility, although transportation deficiencies on existing WV 10 may increase response times for emergency management vehicles.

Alignment C will displace the WVDOH park-and-ride lot and the Green Valley Baptist Church. It will also impact the Hite-Saunders Elementary School's two driveways, requiring two sliver takes to the school's access points with Green Valley Road. The school's access points will not be moved, but they will be widened to offer better sight distance for vehicles exiting school property.

Modified Alignment C will also displace the WVDOH park-and-ride lot and the Green Valley Baptist Church. It will also impact the Hite-Saunders Elementary School, but only require one sliver take at one of the school's two access driveways, not reconstruction of each access point with Green Valley Road.

Positive impacts to emergency services will result from either of the build alternatives. By providing an improved roadway through the area, response times for emergency services will decrease and service will be enhanced with either alternative. Better access to the Hite-Saunders School will also be provided.

### **Mitigation**

The Green Valley Baptist Bible Church will be offered relocation benefits provided by the *Uniform Relocation and Real Property Acquisition Policies Act* and applicable West Virginia laws. Assistance will be provided to re-establish the church within the vicinity of the project area.

Additionally, the WVDOH may construct another park-and-ride lot within highway right-of-way if deemed necessary. Access points on Green Valley Road to Hite-Saunders Elementary School will be widened to offer better sight distance for vehicles exiting school property.

### **3.1.7 Community Cohesion**

A community is part of a larger region, having a special characteristic or group of characteristics that make it different from the surrounding area. In its simplest form, it is a group of individuals having common ties and a common identity. Communities can have clear boundaries delineated by existing municipal or physical limits, or less distinct boundaries defined by

socioeconomic factors, demographic characteristics, or social and psychological attitudes. For the transportation development process, a community is generally assumed to be a geographic area where local residents have made a commitment to both the physical environment where they live or work and the accompanying social system functioning within that environment.

In past environmental studies, community cohesion has been defined as the interaction among individuals, groups, and institutions. Community cohesion manifests itself as the perception of belonging to a group or having a close bond to a particular area. This perception of a strong community bond is commonly referred to as a "sense of place," allowing cohesion to be expressed through the patterns of "daily social interaction, the use of local facilities, participation in local organizations, and involvement in activities that satisfy the population's economic and social needs" (FHWA 1996). Although no direct measurement of community cohesion is possible, any impacts potentially caused by a transportation project could interfere with the accessibility of facilities and services. Impacts that cause the displacement of residents and businesses could also result in disruption to community cohesion.

To determine if the project will impact community cohesion, several activities were undertaken, including an analysis of U.S. Census reports, potential residential and commercial displacements analyses, windshield surveys, examination of aerial photography for the study area, identification of community facilities, local official interviews, and a comprehensive plan review. All of this information was consolidated to identify potential disruptions to the local community, including the disruption of existing transportation patterns and the creation of physical barriers.

The No-Build Alternative is not expected to displace any homes or change existing community travel patterns. Although there will be some residential displacements with the build alternatives, there will be no impact to community cohesion with either Alignment C or Modified Alignment C. Residents of the area rely heavily on vehicular transportation for access to work, school, recreational opportunities, church, and other community or personal activities. Transportation patterns will not be disrupted nor will spatial relationships be modified negatively. Access points to other roads will be maintained and pedestrian patterns will be similar to what they are today. Common characteristics, interests, and economic activities are likely to remain unchanged.

### **3.2 Farmlands**

The federal *Farmland Protection Policy Act of 1981* (FPPA) requires an analysis of farmlands for any project receiving federal funding. The purpose of the FPPA is to “minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural use.” FPPA farmland is determined by the USDA, Natural Resources Conservation Service (NRCS) based upon the underlying soil types as represented in each county’s soil survey. The USDA, NRCS defines FPPA farmland as the soil types determined to be prime farmland, unique farmland, statewide important farmland, or locally important farmland. The definitions of these categories are as follows:

- Prime Farmland – Land which has the best physical and chemical characteristics for the cultivation of agricultural products with a minimum of labor, fertilizer, and pesticides. It does not include land in urban development or land used for water storage.
- Unique Farmland – Land other than prime farmland that is used for the production of a specific high-value food or fiber crop.
- Farmland of Statewide Importance – Land other than prime or unique farmland, which has been designated as being of importance for the production of agricultural crops.
- Farmland of Local Importance – Land other than prime, unique, or of statewide importance, which has been designated by local agencies as containing the best characteristics for the production of agricultural crops.

If FPPA soils are determined to be impacted by a federally funded project, the Farmland Conversion Impact Rating Form (NRCS Form CPA-106) is to be completed in order to comply with the FPPA. Coordination with the NRCS was conducted in 2000, and at that time it was determined that no further action was necessary regarding farmland soils. The soil structure in the area has not changed since then. Thus, the Farmland Conversion Rating Form need not be updated for this EA.

In West Virginia, the *Voluntary Farmland Protection Act* was passed in 2000. The act authorized the creation of county farmland protection boards and detailed the criteria for the acquisition of conservation easements. In 2002, the act was modified to allow each county with a farmland protection board to provide funding to the farmland protection program through a real estate transfer tax. To date, Cabell County has not established a county board.

The No-Build Alternative may have minimal impacts to farmlands. Although land cover investigations conducted in 2011 did not identify any active farmland in the immediate project area, statewide datasets identified the potential for Alignment C to impact 5.9 acres of farmlands and Modified Alignment C to impact 2.6 acres of farmlands. If still being actively farmed, these areas are likely being used as limited pasture lands.

### Mitigation

Any property to be acquired that may contain farmland will be purchased in accordance with the *Uniform Relocation and Real Property Acquisition Policies Act, Title VI of the Civil Rights Act*, and applicable West Virginia laws. Individuals, families, and businesses displaced by the project will be offered the full extent of benefits and payments provided by these laws.

### **3.3 Parks and Recreation**

The project area was examined for existing parks, recreation areas, and wildlife refuges through site investigations and by reviewing the USGS Huntington WV-OH and Barboursville WV-OH 7.5 minute quadrangles (USGS 2011 and 1985, respectively), and the *West Virginia Atlas & Gazetteer* (DeLorme 1997). Local officials were also contacted to obtain an inventory of parks and recreation facilities in the area.

There are no public parks in the study area. The only recreational facilities located in the study area are associated with the Hite-Saunders Elementary School. They include a small playground, the Hite-Saunders Nature Trail, the Adam Ballard Baseball Field, and the Frank Ray Baseball Field. These facilities are owned by the Cabell County School District and are open to the public. School officials estimate that about 500 people use these facilities each year. The No-Build Alternative is unlikely to have an impact on these facilities. Neither of the build alternatives will impact these facilities.

### **3.4 Land Cover**

The land cover types found within the study area were identified by reviewing the USGS Huntington WV-OH and Barboursville WV-OH 7.5 minute quadrangles (USGS 2011, 1985), the *West Virginia Atlas & Gazetteer* (DeLorme 1997), and through field investigations. Field

investigations were performed during August 2011. Upland habitat and land cover types were classified to Level II in accordance with the *Anderson Land Use/Land Cover Classification System* (Anderson, et al. 1976). Wetland types were classified in accordance with the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, et al. 1979). Field observations of wildlife included observations and evidence indicating the presence of deer, various small mammals, and many species of birds.

The predominant land cover is overwhelmingly developed land, indicative of the area's suburban nature. Only minimal impacts are expected to land cover with the No-Build Alternative. Vegetation and wildlife habitat could be impacted during the development of any future project to improve the transportation network in the area.

Impacts on land cover with Alignment C include 43.6 acres of developed land (75.2 percent), 8.5 acres of forested land (14.7 percent), and 5.9 acres of agricultural land (10.1 percent). Impacts on land cover with Modified Alignment C include 22.5 acres of developed land (70.3 percent), 6.9 acres of forested land (21.6 percent), and 2.6 acres of agricultural land (8.1 percent). Impacts to land cover with the build alternatives are shown in Table 3-7. Impacts to aquatic habitat are discussed elsewhere in this EA.

**TABLE 3-7  
Land Cover Impacts**

<b>Land Cover Type</b>	<b>Alignment C</b>		<b>Modified Alignment C</b>	
	<b>Acres</b>	<b>Percent</b>	<b>Acres</b>	<b>Percent</b>
Developed Land	43.6	75.2	22.5	70.3
Forested Land	8.5	14.7	6.9	21.6
Agricultural Land	5.9	10.1	2.6	8.1
<b>Total</b>	<b>58.0</b>	<b>100</b>	<b>32.0</b>	<b>100</b>

Mitigation

Mitigation for impacts to land cover will include the placement of temporary protective fence around sensitive areas to protect these areas during construction. An approved Erosion and Sedimentation Control Plan will be implemented to minimize impacts to the water quality and habitat of the project area streams. All disturbed areas will be revegetated (utilizing a native seed mixture) and landscaped upon completion of construction.

### **3.5 Rare, Threatened, and Endangered Species**

Threatened and endangered wildlife and plant species are protected under *Section 7* of the federal *Endangered Species Act of 1973* (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*). In West Virginia, there is no state threatened and endangered species legislation. Therefore, the species listed as either threatened or endangered in West Virginia are those listed by the United States Fish and Wildlife Service (USFWS) as federally threatened and endangered species.

In a letter dated December 20, 2011, the USFWS made a “no-effect” determination, meaning that the project will not affect federally-listed endangered species and that no further Section 7 consultation is required. In a letter dated December 22, 2011, the WVDNR indicated that there are no known occurrences of rare, threatened, and endangered (RTE) species within the study area. Copies of both letters are found in the appendix of this EA.

On October 2, 2013, the USFWS proposed to add the northern long-eared bat (NLEB) to the list of species protected by the *Endangered Species Act* (ESA). While the species has not been formally added to the list of species protected by the ESA, it is likely to be listed later this year. In an email to WVDOH on March 5, 2014, however, the USFWS determined that the project would have no effect on the NLEB. A copy of that email is found in the appendix of this EA.

### **3.6 Streams/Water Quality**

West Virginia *Title 47 Legislative Rule, Environmental Quality Board, Requirements Governing Water Quality Standards (47 Code of State Regulations [CSR] 2)* were reviewed concerning potential impacts to West Virginia waters (West Virginia Secretary of State [WVSOS] 2011). Delineations of streams were performed by field personnel in August 2011. The entire study area lies within the Four Pole Creek watershed. Grapevine Creek is the only named tributary of Four Pole Creek within the potential area of impacts. Grapevine Creek also has several smaller, unnamed tributaries branching from it. Four Pole Creek is listed as a high quality stream by the WVDNR and designated by the West Virginia Department of Environmental Protection (WVDEP) as water contact recreation. Grapevine Branch is designated by the WVDEP as small, non-fishable, and wildlife use.

The surface water investigation consisted of reviewing existing information and field investigations. Existing information utilized for this study included the: USGS, Cabell County mosaic, W.VA., 7.5 minute topographical quadrangle; West Virginia *Title 47 Legislative Rule, Environmental Quality Board, Requirements Governing Water Quality Standards (47 CSR 2)*; and WVDNR *West Virginia Trout Stocking Schedule*. *West Virginia Title 47* was referenced in the determination of designated water use categories.

The following are the definitions for the types of streams, as defined in *Title 47 and the West Virginia Surface Mining Rules*:

- *Perennial Streams* – Streams or portions of a stream that flow(s) continuously.
- *Intermittent Streams* – Streams which have no flow during sustained periods of no precipitation and which do not support aquatic life whose life history requires residence in flowing waters for a continuous period of at least six months.
- *Ephemeral (or Wet Weather) Streams* – Streams that flow only in direct response to precipitation or whose channels are at all times above the water table.

The project area streams were analyzed through visual observation of physical characteristics. A cursory investigation of the macroinvertebrate population was conducted by physically overturning and examining substrate, woody debris, and detritus within each of the surveyed streams. Macroinvertebrate taxonomic classification, abundance, and diversity were recorded onto the surface water hydrology survey data form for each stream surveyed. The taxonomic classification was completed to the Order level (where possible), and the abundance and diversity of each Order were recorded.

Finfish sampling was not conducted for this investigation, but if finfish were observed within a stream it was noted. Macroinvertebrates were observed in each of the project area's perennial streams (S3, S4, S5, S9, and S10) and one of its intermittent streams (S11). Macroinvertebrates found in the streams include *decapoda*, *diptera*, *ephemeroptera*, *gastropoda*, *odonata*, *planaria*, and *trichoptera*. Benthic macroinvertebrates are aquatic species that live on the bottoms of water bodies. Macroinvertebrates, together with many other physical variables, can reflect the level of water quality found in streams. Generally, the collection of macroinvertebrates found in the project area's streams is indicative of average water quality – there are neither obvious pollutants, nor pristine conditions. Unidentified finfish were observed in Grapevine Branch but not in any of the other project area streams. The project area streams



Grapevine Branch (S3) originates south of the project area and flows in a northerly direction to the point where the stream enters the project area. At this point it flows in a northwesterly direction to its confluence with Fourpole Creek, which is beyond the project area. Streams S1, S2, S4, S5, S6, S7, S8, and S9 flow directly into Grapevine Branch. Streams S10, S11, S12, S13, S14, S15, and S16 are all tributaries to S9. Stream gradients throughout the project area vary from moderate to high, with the high gradient streams providing primarily ephemeral flows and the moderate gradient streams providing intermittent or perennial flows.

Only minimal impacts are expected to streams with the No-Build Alternative.

The locations of project area streams are shown on Figures 3-4 and 3-5 for Alignment C and Modified Alignment C, respectively. Approximately 6,740 feet of streams will be impacted with Alignment C and 2,744 feet of streams will be impacted with Modified Alignment C. Table 3-8 summarizes stream impacts for each of the build alternatives.

**TABLE 3-8  
Stream Impacts**

Stream		Alignment C			Modified Alignment C		
I.D.	Name	Perennial (feet)	Intermittent (feet)	Ephemeral (feet)	Perennial (feet)	Intermittent (feet)	Ephemeral (feet)
S1 <sup>1</sup>	UNT/Grapevine Branch			28			
S2 <sup>1</sup>	UNT/Grapevine Branch			70			70
S3	Grapevine Branch	5,077			814		
S4	UNT/Grapevine Branch	118			212		
S5	UNT/Grapevine Branch	202			403		
S6 <sup>1</sup>	UNT/Grapevine Branch					203	
S7	UNT/Grapevine Branch		46			98	
S8	UNT/Grapevine Branch			238			300
S9	UNT/Grapevine Branch	377					
S10	UNT/Grapevine Branch	83					108
S11	UNT/Grapevine Branch		82			82	
S12	UNT/Grapevine Branch		88			88	
S13 <sup>1</sup>	UNT/Grapevine Branch			88			88

**TABLE 3-8 (Continued)  
Stream Impacts**

Stream		Alignment C			Modified Alignment C		
I.D.	Name	Perennial (feet)	Intermittent (feet)	Ephemeral (feet)	Perennial (feet)	Intermittent (feet)	Ephemeral (feet)
S14 <sup>†</sup>	UNT/Grapevine Branch			95			125
S15 <sup>†</sup>	UNT/Grapevine Branch			65			70
S16 <sup>†</sup>	UNT/Grapevine Branch			83			83
<b>Total</b>	All Streams	5,857	216	667	1,429	471	844
<b>Total</b>	Excluding Non-Jurisdictional Streams	5,857	216	238	1,429	268	408

<sup>†</sup> Non-jurisdictional streams

Many of the project area streams share similar land use and watershed characteristics. Land uses associated with the project study area streams include forested land, residential land, and transportation. Watershed characteristics common to each of these streams include mountainous terrain that is wooded. Flat and open terrain is also a common watershed characteristic shared by many, but not all, of the project area streams.

Of the potential impacts for Alignment C, 5,857 feet will be to perennial streams, 216 feet to intermittent streams, and 667 feet to ephemeral streams. Of the potential impacts for Modified Alignment C, 1,429 feet will be to perennial streams, 471 feet to intermittent streams, and 844 feet to ephemeral streams. All impacts will be permanent and be limited to culverting existing streams where the relocated roadway crosses them.

During a jurisdictional determination by the USACE on May 21, 2012, however, the following streams were considered non-jurisdictional: S1, S2, S6, S13, S14, S15, and S16. By excluding the non-jurisdictional streams, the impact to intermittent streams from Modified Alignment C will be 268 feet and to 408 feet to ephemeral streams. Also by excluding the non-jurisdictional streams, impacts to ephemeral streams will be 238 feet. These impacts are also shown on Table 3-8.

**Mitigation**

A compensatory mitigation plan will be developed that is consistent with the *2008 Final Rule on*

*Compensatory Mitigation for Losses of Aquatic Resources.* The compensatory mitigation plan will be submitted to the USACE with the project's *Clean Water Act Section 404/401* permit application.

In order to avoid and/or minimize potential impacts to water quality/streams, the following best management practices (BMPs) and recommendations will be considered and undertaken, where appropriate, during final design and construction:

- Reduce the amount of aquatic habitat (and riparian vegetation) that would be disturbed by minimizing the linear distance of stream being impacted.
- Design and construct culvert structures that promote the re-establishment of benthic habitat within the culvert.
- Design and implement an approved Erosion and Sedimentation Control Plan to prevent sediment deposition to aquatic habitats.
- Promptly revegetate all disturbed areas to prevent accelerated erosion.
- Construct all cofferdams, causeways, and temporary crossings with large, clean, rock fill material and filter fabric on the downstream side to trap sediments.
- Minimize the need for in-stream work by heavy equipment.
- Develop project sequencing to facilitate in-stream work during periods of seasonal low flow.
- Designate any equipment fueling and service areas away from aquatic habitats to minimize the potential for accidental spillage of petrochemicals.
- Designate and construct all stormwater management facilities to prevent or minimize runoff resulting in erosion and sedimentation.
- Minimize the amount of vegetative clearing and impervious surface within the right-of-way to reduce volume and thermal increases.
- Consider the use of vegetated stormwater management basins and wide, flat drainage ditches to reduce sediment and toxicant loading in highway runoff.
- Minimize the diversion of surface water flow within the cleared portion of the right-of-way to reduce thermal increase.
- Develop bridge demolition sequencing that avoids and/or minimizes impacts to stream resources prior to any bridge demolition activities.
- Coordinate stream mitigation activities with the natural resource agencies.

### **3.7 Floodplains**

This floodplain analysis was conducted in accordance with the requirements of Executive Order 11988, *Floodplain Management*, FHPM 6-7-3-2, *Location and Hydraulic Design of Encroachments on Floodplains* (FHWA 1978), and United States Department of Transportation 5650.2, *Floodplain Management and Protection* (1979). Federal guidelines require the use of available National Flood Insurance Program maps to determine and evaluate the effect the proposed action may have on 100-year floodplains and the risk of flooding. Upon review of the *Digital Flood Insurance Rate Map for Cabell County* (FEMA 2011), it was determined that the project area is located within the 100-year floodplain of Grapevine Branch. The floodplains are shown on Figures 3-4 and 3-5.

The No-Build Alternative will have minimal impacts on floodplains.

Alignment C will impact 12.3 acres of Grapevine Branch floodplain and Modified Alignment C will impact 4.7 acres of Grapevine Branch floodplain.

#### **Mitigation**

Any construction within floodplains will be in compliance with Executive Order 11988, *Floodplain Management*; FEMA regulations; and all federal, state, and local regulations. Coordination with and approval of the Cabell County Floodplain Administrator will also be required.

The floodplains within the project area perform flood flow alteration and improve water quality. Maintaining or improving the natural and beneficial floodplain values will be an important consideration during final design. During final design, encroachments on the 100-year floodplains will be minimized to the extent possible. For any encroachment that must occur, all efforts will be taken to reduce the risk of flooding and the effects on human health, safety, and welfare. Additionally, an Erosion and Sedimentation Control Plan will be prepared and implemented during construction. Roadway embankments and any disturbed areas within the floodplains will be seeded with native seed mixtures to protect the floodplains from erosion and to enhance the natural and beneficial floodplain values.

During final design, a detailed hydraulic analysis will be performed to ensure that the floodplain encroachment will not increase the 100-year floodplain elevation and that any potential increase in backwater is minimized. The hydraulic analysis will include an analysis to determine the risk associated with any additional flooding. If it is determined that existing hydraulic conditions cannot be maintained, WVDOH will notify FEMA in accordance with Executive Order 11988, *Floodplain Management*. Should an increase in water surface elevation for the 100-year flood occur, a conditional letter of map revision from the Cabell County Floodplain Administrator would be required by FEMA.

### **3.8 Wetlands**

The wetlands investigation was conducted in accordance with the USACE *Wetlands Delineation Manual* (Technical Report Y-87-1) (1987); the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (ERDC/EL TR-10-9) (2010); and Section 404 of the *Clean Water Act*. The sources for the information used in the wetlands investigation included the USDA *Soil Datamart* (2011) and the USFWS *National Wetland Inventory* mapping (USFWS 2011; WV GIS Technical Center 2011). Field investigations also were conducted during August 2011. Potential wetland habitats were identified based on visual changes in vegetation and signs of hydrology. All potential wetlands within the study area were classified in accordance with the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, et al. 1979).

Project area wetlands are shown on Figures 3-4 and 3-5. There are 21 wetlands within the project area; all of the wetlands are classified as palustrine emergent (PEM), except for two, identified as W3 and W4. Palustrine wetlands include all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens. Although W3 and W4 are primarily PEM in nature, they also show some characteristics of palustrine scrub-shrub (PSS) and palustrine forested (PFO) wetlands.

All of the project area wetlands fall within the Fourpole Creek watershed. The delineated wetlands are primarily groundwater driven systems, with roadway runoff and stream overflow as additional hydrology sources. Many of the wetlands are floodplain-type wetlands which receive roadway runoff due to the proximity of existing roadways. Common functions displayed by a majority of the project area wetlands include sediment/toxicant retention and nutrient removal.

Functions of groundwater recharge/discharge, production export, wildlife habitat, floodflow alteration, and sediment/shoreline stabilization were also displayed by several of the project area wetlands.

The No-Build Alternative could have a minimal impact on wetlands, depending on the actual design of current and future programmed projects. Increased travel on existing roads could result in a variety of transportation and development problems leading to the need to increase highway capacity. Future projects aimed at addressing these needs could impact wetlands in the area.

Alignment C will impact 19 wetlands, totaling approximately 1.89 acres. The wetlands impacted by Alignment C range in size from approximately 0.01 acre to just slightly less than 1.0 acre. Modified Alignment C will impact 20 wetlands, totaling approximately 1.46 acres. Of these, 1.11 acres are PEM/PSS/PFO and 0.78 acres are PEM. The wetlands impacted by Modified Alignment C range in size from approximately 0.01 acre to approximately two-thirds of an acre. Of these, 0.75 acres are PEM/PSS/PFO and 0.71 acres are PEM. The impacts to the wetlands are shown in Table 3-9.

**TABLE 3-9  
Wetland Impacts**

<b>Wetland (all in Fourpole Creek watershed)</b>	<b>Type</b>	<b>Alignment C (acres)</b>	<b>Modified Alignment C (acres)</b>
W3	PEM/PSS/PFO	0.92	0.68
W4	PEM/PSS/PFO	0.19	0.07
W5	PEM	0.03	0.03
W6	PEM	0.01	0.01
W7	PEM	0.02	0.02
W8	PEM	0.03	0.01
W9	PEM	0.03	0.02
W10	PEM	--	0.04
W11	PEM	0.01	0.01
W12	PEM	0.09	0.06
W13	PEM	0.33	0.33
W14	PEM	0.02	0.02
W15	PEM	0.05	0.02
W16	PEM	--	0.02
W17	PEM	0.04	--
W18	PEM	0.02	0.02
W19	PEM	0.01	0.01
W20	PEM	0.01	0.01
W21	PEM	0.03	0.03

TABLE 3-9 (Continued)  
Wetland Impacts

Wetland (all in Fourpole Creek watershed)	Type	Alignment C (acres)	Modified Alignment C (acres)
W22	PEM	0.01	0.01
W23	PEM	0.04	0.04
<b>Total</b>	All Wetlands	<b>1.89</b>	<b>1.46</b>
<b>Total</b>	PEM/PSS/PFO Only	<b>1.11</b>	<b>0.75</b>
<b>Total</b>	PEM Only	<b>0.78</b>	<b>0.71</b>

Mitigation

A compensatory mitigation plan will be developed that is consistent with the 2008 Final Rule on Compensatory Mitigation for Losses of Aquatic Resources. The compensatory mitigation plan will be submitted to the USACE with the project’s Clean Water Act Section 404/401 permit application. During final design, measures will be identified that will minimize any temporary and permanent impacts to wetland resources due to the construction of either build alternative.

**3.9 Groundwater**

Groundwater resources were assessed through the use of Internet data and project area mapping. Aquifers are at sufficient depth to be protected from any proposed construction activities. Additionally, no groundwater users were identified within the project area. Public water service in the area is provided by West Virginia American Water. There will no impact to groundwater as a result of the No-Build Alternative or either of the build alternatives.

**3.10 Air Quality**

Transportation air quality evaluation requirements, as stipulated in the *National Environmental Policy Act* of 1969 and the federal *Clean Air Act* (CAA) of 1990, involve micro-scale computer modeling on the project level to determine localized air quality impacts related to the National Ambient Air Quality Standards (NAAQS), as well as regional modeling to determine conformity. The Huntington area was designated as a nonattainment area for 1997 PM2.5 standards and a maintenance area for 8-hour ozone NAAQS. Since then, the United States Environmental Protection Agency (USEPA) has determined that the Huntington area has attained the 8-hour

ozone NAAQS based upon three years of complete, quality-assured ambient air quality ozone monitoring data for 2003-2005. Subsequently, the KYOVA Interstate Planning Commission developed a supplemental Air Quality Conformity Analysis, in accordance with federal requirements, for the 2040 Long Range Transportation Plan (LRTP) (KYOVA 2013b) and the TIP (KYOVA 2013a) for the Huntington-Ironton Metropolitan Area pursuant to the CAA and SAFETEA-LU. The TIP and LRTP include priority projects and programs for which implementation is anticipated. The Melissa-Huntington Road Project was included in both the TIP and LRTP. The models, methodology, and procedures for the conformity analysis were determined through an interagency consultation process that involved representatives from the KYOVA Interstate Planning Commission, WVDOH, West Virginia Division of Air Quality, FHWA, USEPA, and Ohio Department of Transportation (KYOVA 2013a).

The maintenance plan established mobile source emission budgets (tons per summer day) for volatile organic compounds (VOC) and nitrogen oxides (NOx) for future years. NOx and VOC emissions are the precursors, or ingredients, for the formation of ozone. On June 15, 2004, a new 8-hour ozone standard became effective. The 8-hour mobile source State Implementation Plan (SIP) emissions maintenance budgets were released in July 2006. The motor vehicle emissions budgets for year 2009 are 4.6 tons/day of VOC and 8.7 tons/day of NOx. For year 2018, the motor vehicle emissions budgets are 3.0 tons/day of VOC and 4.1 tons/day of NOx.

The final rule for PM<sub>2.5</sub> and PM<sub>10</sub> by the USEPA, effective April 5, 2006 (as amended at 71 FR 4441, Jan. 24, 2008) and published in 40 CFR Part 93, defines PM<sub>2.5</sub> and PM<sub>10</sub> as particles with an aerodynamic diameter less than or equal to a nominal 2.5 and 10 micrometers, respectively. The USEPA specifies in Sec. 93.123(b)(1) that projects of air quality concern are:

- (i) 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;
- (ii) Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
- (iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
- (iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and



- (v) Projects in or affecting locations, areas, or categories of sites which are identified in the PM<sub>10</sub> or PM<sub>2.5</sub> applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Overall, WV 10 is generally operating at LOS C currently. This project is expected to maintain the same level of service with construction of either Alignment C or Modified Alignment C. Although traffic is expected to grow over the next 20 years, the percentage of diesel vehicles using the network (approximately 4 percent) is not expected to change appreciably. Additionally, new or expanded bus and rail terminals and transfer points are not associated with this project. Therefore, based on the consistent level of diesel traffic and levels of service, this project is presumed to meet *Clean Air Act* and 40 CFR 93.116 requirements without any explicit hot-spot analysis.

This project has been determined to generate minimal air quality impacts for *Clean Air Act* criteria pollutants and has not been linked with any special Mobile Source Air Toxics (MSAT) concerns. This project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the no-build alternative. Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 100 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

#### Mitigation

No mitigation is required.

### **3.11 Noise**

Noise sensitive receptors are located throughout the project area. The sensitive receptors identified within the project study are considered activity categories B, C, F, and G as defined by the FHWA traffic noise regulations (23 CFR Part 772). Activity category B includes all residential units. Activity category C includes 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. Activity category F includes 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. Activity category G includes undeveloped land. The receptors found within the project area include residences, churches, schools, and a cemetery.

Consequently, a noise analysis was undertaken to identify and evaluate the potential noise impacts resulting from the proposed project (Skelly and Loy, Inc. 2011). This analysis identifies the fundamentals of noise, noise-sensitive areas within the project area, noise impact criteria prescribed by federal and state regulations, and WVDOH analysis procedures. In addition, the analysis used quantitative modeling utilizing the FHWA Traffic Noise Model (TNM) 2.5 to analyze traffic sound levels under the existing and design year (2030) for the No-Build Alternative and the build alternatives and examine areas which exceed the prescribed noise abatement criteria (NAC). Sound level predictions based on future traffic and roadway improvements were compared with the NAC to delineate noise-impacted land uses. Noise abatement consideration was given to all impacted locations.

According to FHWA guidance, a project is defined as having a traffic noise impact if either of the following conditions occurs:

- Predicted noise levels approach or exceed the FHWA NAC. Approach levels are considered to be 1 dB(A) less than the noise abatement criteria. The 1 dB(A) level was interpreted from the FHWA directive of December 1993 in an effort to standardize the approach criteria. For Category B receptors, FHWA has established the absolute NAC at 67 dB(A), and the approach level has been set at 66 dB(A).
- A substantial increase in predicted noise levels over the existing noise levels occurs even though the NAC has not been reached. In West Virginia, WVDOH has defined the substantial increase to be 16 dB(A) or greater over the existing level.

Noise monitoring was conducted at 11 representative locations in the study area on August 2, 2011, using several Metrosonics dB3080 Sound Level Analyzers during the A.M. and P.M. peak traffic/noise periods. The analyzers were pre- and post-calibrated using a Metrosonics CI-304 calibrator. Additionally, all analyzers undergo yearly laboratory calibration.

The A.M. peak conditions were slightly louder than the P.M. and were, thus, used for the validation. All model validation results were within 3 dBA of the measurement for the A.M. peak; therefore, the model is considered valid according to WVDOH and FHWA protocols.

The locations of the noise receptors are shown on Figure 3-6. Sixty-five sites (54 monitored and 11 modeled) were analyzed in the project area. These receptors included residences, churches, schools, and a cemetery. The business locations are not considered noise sensitive due to the lack of outdoor activities.

The No-Build Alternative would impact 10 noise receptors.

Three residences are predicted to have exterior noise levels approaching or exceeding 66 dBA under the build alternatives. The three potentially impacted homes are M1, M9, and M33. The reduction in noise impacts with the build alternatives is primarily due to the diversion of traffic from the existing road where these receptors are located directly adjacent to the road. The build alternatives pull traffic away from these areas and reduce the overall noise impact in the project area.

### Mitigation

WVDOH *Highway Traffic Noise Policy* (WVDOH 2011b) was used to provide impact thresholds and mitigation considerations for the project. When the predicted design year sound levels approach or exceed the NAC, noise abatement considerations are warranted for the identified impacted areas. The goal of a noise barrier is to eliminate impacts or to substantially reduce noise levels at affected receptors. Mitigation consideration of noise barriers consists of two components: feasibility and reasonableness.

Feasibility deals primarily with engineering and acoustical considerations. Engineering considerations include restrictions to vehicular or pedestrian traffic (including driveways), safety concerns (such as sight distances or recovery zones), barrier constructability and maintainability, impacts to utilities and drainage, and overall adverse social, economic, and environmental effects. Acoustical considerations include a minimum insertion loss (IL) of 5 dB(A) for the majority of noise receptors behind the barrier with a 7 dB(A) reduction at least at one location.

Reasonableness determinations are based on noise abatement benefits, desires of the affected community, comparison of existing to future build and no-build noise levels, development trends and land use controls, and mitigation cost per impacted and/or benefited receptor. The cost per benefited receptor should not exceed the state limit of \$15,000 per benefited land use to be considered reasonable. A receptor is considered eligible to be included in the reasonable cost analysis for the proposed mitigation if it would receive a minimum IL of 5 dB(A).

Trees provide a visual shield and some psychological benefit, but are not nearly as effective at reducing noise levels as a solid barrier. A 200-foot width of dense vegetation can reduce noise by 10 decibels, which cuts traffic noise in half. However, it is often impractical to plant enough vegetation along a road to achieve such a reduction.

Noise mitigation consideration was given to the three impacted locations identified for the “Build” condition for the year 2030. FHWA and WVDOH methodologies specify several mitigation measures such as traffic management measures, changes in horizontal and vertical alignments, acquisition of property for buffer zones, insulation and/or air conditioning of buildings to meet interior noise standards listed in Activity Category D, and construction of noise barriers which should be considered.

A preliminary mitigation analysis was conducted for the three isolated receptors impacted under a design year build alternative. There are no practical abatement measures that will eliminate or reduce the traffic noise impact at these receptors under WVDOH noise abatement policy (WVDOH 2011b). These locations are residential and require direct access from the proposed roadway. The minimum reduction in noise (5 dBA) cannot be achieved at these locations because a barrier would need a break for the driveway access. In addition, these locations would require a wall extremely close to the roadway structure (25 feet) and access, and potentially could affect the line-of-sight for ingress and egress.

### **3.12 Potentially Hazardous Waste Sites**

A preliminary assessment of potentially hazardous wastes sites was completed in the study area on June 16, 2011. An Environmental Data Resources, Inc. (EDR) report was obtained to assist in identifying potential hazardous waste sites within the study area. These are existing sites containing potentially hazardous materials, not new sites resulting from the proposed

roadway construction. The EDR report identified three potential hazardous waste sites. They consisted of Speedway #3923, Rich Oil Station #3923, and Engines Inc. After further review, Speedway #3923 and Rich Oil Station #3923 were determined to be the same site and Engines Inc. was determined to be located outside of the study area. The sites falling within the project area are shown on Figures 3-2 and 3-3.

The EDR report also listed 20 sites in the orphan summary. The orphan summary is a list of sites that could not be mapped due to inadequate information. Through additional research, these 20 sites were determined not to be located in the study area.

USEPA and WVDEP databases were also reviewed and a windshield reconnaissance of the study area was conducted in June 2011. The purpose of the field survey was to identify potentially contaminated sites with recognized environmental conditions (REC). It is important to note that some sites with REC may exist on private property that was inaccessible to the investigator, however.

Sites with REC were identified and categorized into one of the three following levels of concern:

- Level 1 REC – These sites are classified as low risk. These sites include, but are not limited to, automotive and truck repair facilities, small quantity *Resource Conservation and Recovery Act* (RCRA) generator facilities, facilities with aboveground storage tanks (ASTs) containing less than 10,000 gallons of product with no visible signs of contamination, electric power substations, and automobile sales and service facilities.
- Level 2 REC – These sites are classified as moderate risk and have potential to become high risk based on more detailed examination. These sites include, but are not limited to, facilities with ASTs containing greater than 10,000 gallons of product or ASTs with visible contamination, gasoline fueling facilities, potential former gasoline fueling facilities, metal fabrication facilities, facilities with underground storage tanks (USTs), facilities with used (junk) automotive and truck parts storage, and storage trailers with unknown contents.
- Level 3 REC – These sites are classified as high risk, with the likelihood of soil and/or groundwater contamination. These sites include, but are not limited to, bulk petroleum storage facilities, properties with groundwater monitoring wells, properties with visible soil staining, industrial properties, surface mining facilities, landfills, and salvage yards.

There are eight sites located within the project area that exhibit some level of REC. They are described in Table 3-10. Six of the sites are also shown in Figures 3-2 and 3-3. Sites HZ-7 and HZ-8 are not shown on the figures because they are outside the immediate impact area.

**TABLE 3-10  
Potentially Hazardous Waste Sites in the Project Vicinity**

<b>Site</b>	<b>REC Level</b>	<b>Description</b>
HZ-1	2	<b>WVDOH Maintenance Facility</b> – Concerns with this property include the presence of a large (approximately 10,000 gallon) AST that most likely contains emulsion oil. A USEPA database search identified the site to be a RCRA – Conditionally Exempt Small Quantity Generator (CESQG). Other concerns with this property include the presence of environmentally sensitive materials such as diesel, gasoline, oils, lubricants, and other solvents typically associated with a highway maintenance facility.
HZ-2	2	<b>Howard Barbour Garage</b> – Concerns with this property are its former use as an automotive repair facility and the possibility of it being a former gasoline fueling station. The site most likely at one time generated waste oils and other environmentally sensitive materials.
HZ-3	1	<b>T &amp; T Transmission Service</b> – Concern with this property is its use as an automotive repair facility. The site generates waste oil and other environmentally sensitive materials associated with automobile repair.
HZ-4	2	<b>Wooten Machine Shop</b> – Concerns with this property are its use as a metal fabrication facility. A USEPA database search identified the site to be a RCRA-CESQG. Environmentally sensitive materials contained on site most likely consist of gasoline, diesel, oils, lubricants, solvents, welding gasses, and metal wastes. Wooten Machine Shop also has a smaller location outside of the project area on Green Valley Road.
HZ-5	3	<b>Rich Oil Station</b> – Concerns associated with this site are its former and current use as a gasoline fueling station. The EDR Report lists this facility as a UST facility, Leaking Underground Storage Tank (LUST) facility, a RCRA-CESQG, and a Facility Index System/Facility Registry System (FINDS) facility. Two USTs were removed from this property in June of 1995.
HZ-6	2	<b>Cameron Industrial Machine and Fabrication</b> – Concern with this property is its use as a metal fabrication facility. A USEPA database search identified the site to be a RCRA-CESQG. Environmentally sensitive materials contained on site most likely consist of gasoline, diesel, oils, lubricants, solvents, welding gasses, and metal wastes.
HZ-7	1	<b>S &amp; S Tire</b> – Concerns with this property are the potential presence of environmentally sensitive materials. Environmentally sensitive materials contained on site most likely consist of gasoline, diesel, oils, lubricants, solvents, welding gasses, and metal wastes.
HZ-8	3	<b>Machinery Storage Facility</b> – Concerns with this property are the presence of several ASTs, large equipment, scrap metal, and storage of miscellaneous materials. Only a small portion of this property could be viewed from the industrial facility’s parking lot.

The No-Build Alternative will have minimal impact on any potentially contaminated sites. Any future minor improvements along WV 10 may potentially impact these sites, but they are likely to be avoided.

Alignment C will impact two properties with REC, the Wooten Machine Shop and the Rich Oil Station. Both properties would be total takes and likely require some type of remediation before highway construction could begin.

Modified Alignment C will have a “sliver-type” impact on property of the Rich Oil Station. The Rich Oil Station, however, received remediation in 1995 and the impact to this property is located away from the gasoline storage areas. Most likely, the highway project will not encounter any contaminated materials at this location.

### Mitigation

Mitigation measures for transportation projects typically include development of a waste management plan and/or waste-management related provisions for incorporation into construction bid documents. The proposed project will utilize a similar document to address potential contamination at the impacted REC properties or subsequently identified waste sites. Additional analysis and testing may need to be conducted as engineering design is advanced.

## **3.13 Cultural Resources**

Cultural resources include pre-contact and historic period archaeological sites and above-ground historic structures and locations. Potential above-ground historic resources are considered to be any standing structure, object, or above-ground cultural feature that is 50 years of age or older. In May 2000, a final Phase I cultural resource survey report (GAI Consultants, Inc. [GAI] 1999) was submitted to the WVDOH in partial fulfillment of the requirements for federal undertakings under Section 106 of the *National Historic Preservation Act of 1966*, as amended, its implementing regulations, 36 CFR 800, and Section 4(f) of the *United States Department of Transportation Act of 1966*.

### **3.13.1 Historic Resources**

The Area of Potential Effect (APE) utilized for the historic structures survey was defined as extending 1,000 feet beyond the right-of-way limits for the project. The architectural survey, which was conducted in September 1999, identified 38 structures and one cemetery within the APE. The report recommended that none of the 38 structures or the cemetery were eligible for listing in the *National Register of Historic Places* (NRHP). In a letter dated June 16, 2000, the West Virginia State Historic Preservation Officer (WVSHPO) concurred that none of the resources in the APE were eligible.



In order to update the historic structures findings for 2011, the limits of the APE were confirmed; the WVSHPO files were reviewed; and a field reconnaissance of the APE was conducted. The 1999-2000 APE for the project is still valid as it accounts for effects that could directly or indirectly cause changes in the character or use of historic properties, if such properties exist, with respect to the scale and nature of the undertaking. The files of the WVSHPO were reviewed for any additional historic structures that may have been identified within the APE (through the online West Virginia Geological Information Service [WVGIS] and through confirmation emails with WVSHPO staff), and no additional historic resources have been identified. On May 25, 2011 a field view of the APE was conducted by a Skelly and Loy architectural historian whose qualifications exceed the Secretary of Interior's Standards and Guidelines for architectural historian under 36 CFR 61. The intent of the field view was twofold: to ensure that no potentially eligible historic resources were overlooked in the 1999-2000 study and to look for potentially eligible resources that had become at least fifty years old in the last eleven years.

No newly potentially eligible historic resources were identified during the field view.

### **3.13.2 Archaeological Resources**

No previously recorded archaeological sites exist within the project area. Fieldwork completed in the early stages of the project identified two historic archaeological sites (the Keller Sites 1 and 2 – 46b184 and 46Cb185) and the Ray Cemetery (GAI 1999). The fieldwork was part of a Phase I archaeology analysis that used the proposed right-of-way for Alignment C as its APE. In a letter dated June 16, 2000, the WVSHPO concurred that neither of the resources were eligible for the NRHP and it was subsequently determined that no further investigation was required. The WVSHPO did, however, request that a 100-foot buffer zone be established around the Ray Cemetery during construction. The Ray Cemetery is a family cemetery (Figures 3-2 and 3-3).

#### **Mitigation**

Coordination with the SHPO will continue. Prior to construction, the Phase I archeology analysis will be extended to the limits of all necessary right-of-way. A one hundred-foot buffer will also be established around the Ray Cemetery.



### **3.14 Utilities**

Utilities found in the project area include electric, water, sanitary sewer, communications, and natural gas lines. There will be no impacts to utilities with the No-Build Alternative, but the build alternatives will impact service lines owned by Mountaineer Gas Company, American Electric Power Company, Verizon West Virginia Inc., and Columbia Gas Transmission.

#### Mitigation

Coordination with the utility operators will be required throughout final design and construction of this project. Coordination meetings will be held to discuss the need for additional right-of-way, expansion, or relocation easements; impacts to schedules; construction requirements; and any other special issues. Utility relocations are typically required on most transportation projects and the WVDOH has detailed procedures for coordinating with impacted utilities. The relocation of affected utilities will be completed prior to the start of construction with limited inconvenience to the public.

### **3.15 Secondary and Cumulative Impacts**

Guidelines prepared by the Council on Environmental Quality (CEQ) for carrying out NEPA requirements broadly define secondary impacts as those that are caused by an action and are later in time or further removed in distance, but are still foreseeable (CEQ 1978). Secondary impacts can be associated with development that may result from the construction of a facility, such as a transportation improvement project, but differ from impacts directly associated with the construction and operation of the facility itself. Generally, these impacts are stimulated by an initial action and comprise a wide variety of indirect effects, such as changes in land use, development patterns, economic activity, population density, and related impacts on air, water, and other natural systems, including ecosystems. Indirect impacts may result in increased development pressure on open space, farmlands, and other natural resources.

Cumulative impacts, on the other hand, result from the incremental consequences of an action when added to other past, present, and reasonably foreseeable future actions (CEQ 1997), regardless of what agency, person, or organization undertakes such actions. Cumulative impacts result from past, present, and future actions. When considered as a whole and in

concert with other foreseeable developments and projects, they can result in a combined effect greater than considering separate elements independently.

### **3.15.1 Secondary Impacts**

Secondary impacts are those normally associated with development that may result from the construction of a facility, such as a transportation improvement project, but differ from those impacts directly associated with the construction and operation of the facility itself. Secondary impacts are commonly referred to as induced development. Generally, these impacts are stimulated by an initial action and comprise a wide variety of secondary effects, such as changes in land use, development patterns, economic activity, utility service capacity, and population density. Although secondary impacts may result in increased development pressure on open space and other natural resources, the rural character of the project area limits secondary impacts primarily to areas with some infrastructure in place.

Factors that typically induce secondary, or indirect, development are new access to potential development areas, increased roadway capacity, existing development plans, suitable terrain, and economic incentives. The potential for indirect development to occur in any particular area is determined in great part by individual municipal planning objectives.

Two factors were considered in the identification of potential indirect impacts. First, known development trends and redevelopment efforts in the study area were examined. Specifically, the current availability of land and public infrastructure in Cabell County indicates that secondary development is most likely to occur near the interchange of I-64/WV 10 rather than elsewhere within the study area. Second, it was assumed that areas that have been developing or are subject to redevelopment are more likely to experience induced effects as a result of the improved access provided by the project.

This qualitative assessment included field views; interviews with planning and development officials; and a review of other secondary sources. Development officials were contacted to discuss the project and gather information on other projects or trends in the area. Specific questions directed to these individuals during the interviews included the status of comprehensive plans, consistency of the project with county plans and programs for economic growth, the extent of public water and sewer systems, proposed development in the area, and

other relevant planning and economic development information. In addition, information was gathered on other major projects in the area.

As determined from existing trends and current plans, commercial or industrial growth is most likely to occur around the WV 10/I-64 interchange and along WV 10, but residential growth will occur almost anywhere. Development, however, is often constrained by topography and the limits of existing public water and sewer systems.

Over the past several years, officials in Huntington and Cabell County have targeted the area around the I-64/WV 10 interchange for growth. This is most apparent at Kinetic Park, a 95-acre industrial/commercial park fronting WV 10 on the north side of the I-64 interchange. The business park was created during the early 2000s and saw little growth initially, but there has been considerable construction activity there recently. It is now home to approximately 800 jobs, including an Amazon.com customer center, a new car dealership, two hotels, a family-style restaurant, and several professional offices. The business park will continue to be marketed and will eventually be built-out. When that occurs, there will be additional pressure on surrounding land and throughout the corridor.

In addition to Kinetic Park, the immediate area has seen construction activity and there is another large cluster of businesses nearby along Woodville Drive (WV 46) and Warehouse Road (WV 46/2). With completion of an improved WV 10, it is likely that the area between Kinetic Park and Woodville Drive/Warehouse Road will experience in-filling, further concentrating commercial and industrial development around the interstate interchange while allowing smaller parcels further away to be developed for residential use. Although future development sites are limited, the area is served by public water and sewer lines, making it attractive for new businesses or homes to be constructed there. Of course, there are some businesses already located along WV 10 further away from the interchange, and with an improved roadway some residential properties there may shift to commercial use.

Secondary growth will occur outside the interchange area, too. Suitable land, the availability of public water, the availability of public sewer service, and suitable transportation are typically used as appropriate development features that can be used to predict growth (Kulkarni 1976). The opportunity for induced development is strongest when all four elements are in place and almost nonexistent when none of them are. Growth along the improved highway corridor,

however, will be regulated to a degree by highway-access controls. Thus, sprawl will be limited. Additionally, Cabell County is currently preparing a comprehensive plan and growth management strategies or land use controls are expected to be addressed within that plan.

Economic pressures on the local community, coupled with national trends, are also likely to induce some additional development in the region. As a result of providing safer and more efficient highway access, either of the build alternatives will also result in secondary development, but growth in the corridor is limited by the finite availability of land and infrastructure. Development is expected to be limited to where it is currently occurring and remain lower in other areas. This, in turn, is likely to allow population densities and economic activity to remain relatively constant with the present. Thus, the likelihood of indirect impacts will remain minimal.

### **Mitigation**

Induced development from the project can be accommodated in an orderly manner. Overall, secondary development would be an economic benefit to the community and supports the project's needs. Avoidance and minimization of the adverse impacts related to induced development will be accomplished through comprehensive planning and implementation of highway-access controls. Although strict land use controls are not currently present in the area, future developmental controls could include access management, transfer of development rights, growth management regulations, resource management, resource preservation, conservation easements, and the provision of incentives for infill development. The current work on a comprehensive plan is also an indicator that the creation of land use controls in the study area is possible in the future.

### **3.15.2 Cumulative Impacts**

Taken individually, the impacts from an action may have little effect on the environment. When viewed as a sequence of events, however, different actions may add up to, or cause, additional effects over time. Thus, the cumulative impact may be of more consequence than isolated, individual impacts.

Past projects since the year 2000 and planned actions through the year 2034 were reviewed to complete a qualitative assessment of cumulative impacts. The geographic scope for the analysis centered around WV 10 from the City of Huntington corporate limits to the project's eastern terminus and the nearby I-64 corridor. Primary data sources included a review of comprehensive plans and related programming documents (including the Huntington CDBG *Consolidated Plan 2010-2014*, *Future Land Use Map*, *KYOVA Long-range Transportation Plan* and *Transportation Improvement Program*, Huntington Area Development Council *Community Profile* and annual updates, and Region II comprehensive economic development strategies), interviews with local planners and economic development officials, study area field views, and secondary data sources. Consequently, a qualitative analysis rather than a quantitative trends analysis emerged.

As already noted, direct impacts are caused by an action and occur at the same time and place as that action. Indirect impacts are induced by the action and generally occur later in time or are farther removed in distance. Cumulative impacts, or effects, however, are a result of the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions (RFFAs). Thus, the analysis of RFFAs is crucial in determining cumulative effects. Cumulative effects can be difficult to understand because they are not clear cut. They can accrue from similar impacts, from multiple actions, or be the product of unrelated impacts from a variety of actions. In addition, some actions may offset the effects of other actions, lessening the overall impact. Cumulative effects can also arise from actions which may only be connected by their common impacts on similar resources, ecosystems, or human communities.

The identification and analysis of RFFAs present many challenges. Proponents of future actions may be reluctant to reveal information for a number of reasons. Plans may be uncertain and project sponsors, both private and public, may not see a benefit in disclosing them. Furthermore, project sponsors may not completely understand the importance of their plans on other projects, or understand the potential impact inherent in those plans on others. Detailed design and operational information is generally not available for proposed projects. At the preliminary stage of project development, locations may not be set. Project size and magnitude may not have been determined. Usage estimates or projections may not be sufficiently rigorous. Many factors also affect the timing, location, and design of future actions. If programming and funding requirements have not been finalized, future actions may be delayed, downsized, or modified significantly over time. If definitions of future actions are too liberal,

future impacts may be predicted as being too high. If definitions are too conservative, future impacts may be underestimated.

There will likely be a cumulative impact to the area as a result of the project because the project will improve local transportation and provide better access to a desirable area of Cabell County. This, in turn, could stimulate growth and result in future impacts. Other actions that have contributed to cumulative effects are shown in Table 3-11.

**TABLE 3-11  
Major Actions in the Study Area**

<b>Activity</b>	<b>Location</b>	<b>Environmental Issues that are Cumulative</b>
Construction of new housing	Throughout Cabell County, but specifically along WV 10 and the surrounding area	Land use, terrestrial habitat, water quality, wetlands, traffic, air quality
Additional WV 10 widening or relocation improvements	City of Huntington, other parts of Cabell County	Land use, water quality, wetlands, traffic, noise, air quality, cultural resources
Kinetic Park (industrial park) build-out	WV 10/I-64 interchange area	Terrestrial habitat, water quality, noise, air quality, traffic, cultural resources
Commercial development	Area surrounding WV 10/I-64 interchange; along WV 10; around other I-64 interchanges; downtown Huntington	Terrestrial habitat, water quality, wetlands, noise, air quality, traffic, cultural resources

Once RFFAs were identified, a matrix of probability and potential impact was developed. The matrix connects RFFAs and their anticipated effects on resources so that judgments can be made on the likelihood they will occur. This method was originally developed by the USACE for projects along the Ohio River, but serves as a valid method for analyzing any linear project. The use of matrices to analyze cumulative effect is one of the recognized techniques identified by the CEQ for measuring cumulative impacts (CEQ 1997). Matrices provide two-dimensional checklists that quantify interactions between human activities and resources and assess both magnitude and importance.

RFFAs for this project were divided into three categories: community development; transportation improvements; and regulatory environment. Resources analyzed included water quality, wetlands, terrestrial habitat, RTE species, air quality, recreation resources, socioeconomics, and cultural resources. Two time periods were used, including within 10 years, and between 10 and 20 years from now. Three rankings were used for occurrence

probability, including high, medium, and low. Three rankings were used, including positive, negative, and mixed effects (whereby both positive and negative effects could occur). The results of the analysis are shown in Table 3-12.

**TABLE 3-12  
Potential Impact of RFFAs on Resources**

<b>RFFA</b>	<b>Time Period</b>	<b>Importance</b>	<b>Occurrence Probability</b>	<b>Water Quality</b>	<b>Wetlands</b>	<b>Terrestrial Habitat</b>	<b>RTE Species</b>	<b>Air Quality</b>	<b>Recreation Resources</b>	<b>Socioeconomics</b>	<b>Cultural Resources</b>
<b>Community Development</b>											
Construction of new housing	1	M	H	+/-	+/	-	+/-	+/-	+	+	+/-
Kinetic Park (industrial park) build-out	1,2	H	M	+/-	+/	-	+/-	+/-	+	+	+/-
Commercial development	1,2	M	M	+/-	+/	-	+/-	+/-	+	+	+/-
<b>Transportation Improvements</b>											
Additional WV 10 improvements	1,2	H	H	+/-	+/-	+/-	+/-	+	+	+	+/-
<b>Regulatory Environment</b>											
Federal	1	H	+	+	+	+	+	+	+	+	+
State	1	M	+	+	+	+	+	+	+	+	+
Local	1,2	H	+	+	+	+	+	+	+	+	+
Time period: 1 = within 10 years, 2 = between 10 and 20 years from now Importance/Occurrence probability: H = high, M = medium, L = low. Impacts: + = positive. - = negative, +/- = mixed effects, 0 = none.											

Community development projects would have mixed impacts to most resources. Properly functioning water and waste water treatment systems, regardless of type, can encourage economic growth. When public water is available and a community has adequate sewer facilities in place, public health improves and the community becomes more attractive as a place to live or work. When such systems are not in place, however, or not functioning properly, pollution can result. If not replaced or improved, older systems may not be able to accommodate growth and can result in negative impacts to environmental resources.

Development also can affect wetlands, terrestrial habitat, and RTE species by consuming land and infringing on natural ecosystems. Properly designed development can offset negative impacts, however, and assist in preserving valued elements of the landscape.

Additional development could also increase traffic and subsequently cause air quality problems or require future transportation improvements. The potential effects could be mitigated by the design of future developments and the regulatory environment. Positive effects to recreation

and socioeconomic resources would be expected, primarily through improved facilities or better access.

Because many actions associated with community development are performed by the private sector, the potential for negative effects on cultural resources exists. Most actions likely to occur, however, will have some public sector involvement and consideration of cultural resources will be an integral part of those projects.

Increased safety, efficiency, and congestion management are the principal reasons for surface transportation projects. Short-term local income and revenues would increase as a result of future transportation projects, including bridge renovations, highway rehabilitations and upgrades, and new roadways. Significant changes to population, property values, local taxes, and existing land use patterns could occur, however, if roadway locations are changed or shifted.

There could be mixed impacts to water quality, wetlands, terrestrial habitat, and RTE species as a result of converting land to highway use. Effects would be mitigated in various ways, including avoidance, minimization, and replacement.

Effects to air quality, recreation resources, and socioeconomics would be expected to be generally positive. Additionally, although the affects of transportation projects on cultural resources are mixed, these projects are tied to federal funding or permitting and, therefore, are subject to Section 106 and Section 4(f) compliance. These regulatory processes ensure that the significance of individual cultural resources is considered during project development.

Long-term positive impacts would be associated with improved environmental conditions guaranteed through the regulatory environment. These regulations are especially important where there are numerous development opportunities and the potential for threats to the natural environment occur. All three levels of government (federal, state, and local) have created laws or programs to address negative effects.

A concerted effort by government and the private sector has also occurred over the past 20 to 30 years to bring about economic redevelopment in the area. Several initiatives have contributed in this effort to revitalize the area, including improvements to the transportation



system, extensions of public water and sewer systems, construction of new commercial centers, enhancement of recreational facilities, and new residential development. In total, these efforts have enhanced the quality of life for the area's citizens and businesses without imposing an inordinate cumulative impact on the natural, cultural, or socioeconomic environment. While these improvements, when taken as a whole, have had a cumulative effect on the area in the past and present, with plans in place and the implementation of new development controls, future cumulative effects are expected to benefit the community rather than harm it.

### **3.16 Temporary Construction Impacts**

Construction of either build alternative will have short-term impacts to and benefits on the project area. Short-term impacts associated with construction include, but are not limited to, inconvenient traffic conditions, increased noise and particulate air pollution, erosion, and health and safety-related construction issues. Short-term benefits consist of increased construction employment. These temporary conditions will disappear soon after construction is completed.

Construction activities could also result in disruptions to local residents and the traveling public. These disruptions will be temporary, localized, and of short duration, only occurring during the construction period.

Construction activities may also result in increased noise levels during construction of the proposed project. This project will require the use of stationary material-handling and earth-moving equipment. The equipment used will emit peak noise levels greater than normal traffic noise levels. These increased noise levels will be temporary and of short duration.

During construction, the project will have two major effects on air quality: an increase in emissions by heavy construction equipment and an increase in dust. Dust and exhaust particulate emissions from heavy equipment operations will temporarily degrade air quality in the immediate construction zone.

#### **Mitigation**

Construction operations will be scheduled to minimize traffic delays. Access to residences and businesses will be maintained during construction although temporary disruptions may occur.

Coordination with all major utility companies prior to and during construction will be initiated to locate and minimize disturbance to utility services.

Traffic control signage and devices will be in accordance with the *Manual of Uniform Traffic Control Devices* (FHWA 1988). Flag persons and warning devices, such as signs, barricades, channelizing devices, reflection markers, and hazard warning lights, will be provided as necessary for maintenance of traffic and public safety. Design phase partnering will be conducted during final design and construction in order to coordinate project activities and schedules with emergency service providers, local schools, the U.S. Postal Service, and local/state highway maintenance offices.

Every effort will be taken to minimize the noise levels, including the mandatory use of construction equipment with operable mufflers. If blasting is required, it will be controlled so that no property or structural damage occurs. Measures that may be taken include, but are not limited to, timing of work and laying blast mats. The increase in air pollution particulates will be minimized by the performance of the work in compliance with WVDOH specifications, manuals, and guidelines, and the requirements of the *Air Pollution Control Act* (Act 245-1972, as amended).

An approved Erosion and Sedimentation Control Plan will minimize erosion potential. Appropriate erosion and sedimentation control measures will be implemented in compliance with WVDOH's specifications, manuals, and guidelines. Some of these controls may include, but not be limited to:

- Divert stormwater originating off-site away from the construction area;
- Channel construction during low-flow months;
- Use of proper materials for temporary stream crossings and causeways;
- Temporary and permanent seeding and mulching;
- Construction of temporary sedimentation ponds; and,
- Use of silt barrier fence and/or hay bales.

In addition, the maximum length of time and amount of unprotected soil that can be exposed will be limited within the contract documents. Rock construction entrances will also be located at all site entrances that exit onto paved roads.

Construction will be performed to comply with all applicable federal, state, and local laws regarding safety, health, and sanitation. All contractors are required to adhere to Occupational Safety and Health Administration guidelines to protect the lives and health of employees, the safety of the public, and the integrity of adjacent properties.

### **3.17 Energy**

Highway design and traffic conditions are directly associated with vehicular energy efficiency. Features that affect energy efficiency include profile, alignment, pavement surface, roadway width, traffic density, access points, at-grade intersections, and length. There would also be an energy expenditure to construct a new roadway. There would be a decrease in energy usage, however, with the roadway improvement project, because the improved roadway would relieve existing traffic congestion and reduce travel delays. This would allow for free-flowing traffic conditions and subsequently reduce energy consumption.

### **3.18 Section 4(f) Resources**

In accordance with Section 4(f) of the *United States Department of Transportation Act of 1966* (49 U.S. Code [U.S.C], Section 303) and the *Federal Aid Highway Act of 1968* (23 U.S.C., Section 138), the Secretary of Transportation may not approve the use of land from any publicly owned park, recreation area, or wildlife and waterfowl refuge, or any historic site unless a determination is made that there is no feasible and prudent alternative to the use of land from the property and the action includes all possible planning to minimize harm to the property resulting from such use.

The No-Build Alternative will not impact any Section 4(f) resources, nor will any Section 4(f) be impacted by either Alignment C or Modified Alignment C.

### **3.19 Identification of a Preferred Alternative**

This EA evaluated the proposed Melissa-Huntington Road Project. In addition to the No-Build Alternative, two build alternatives, Alignment C and Modified Alignment C, were evaluated. The

potential effects of the alternatives are summarized in Table 3-13. Not all impacts could be quantified in the table below; in some cases qualitative information is provided.

**TABLE 3-13  
Summary of Impacts**

<b>Resource/Element</b>	<b>No-Build Alternative</b>	<b>Alignment C</b>	<b>Modified Alignment C</b>
Environmental Justice	Minimal	None	None
Tax Base	None	Negligible	Negligible
Business Displacements	0	3	1
Residential Displacements	0	4 occupied, 2 vacant	3 occupied, 5 vacant
Community Facilities and Services	0	1 church, 1 park-and-ride lot, 2 sliver takes at a school	1 church, 1 park-and-ride lot, 1 sliver take at a school
Community Cohesion	Unlikely	None	None
Farmlands	Minimal	5.9 acres	2.6 acres
Parks and Recreation	Unlikely	0	0
Forested Land	Minimal	8.5 acres	6.9 acres
Developed Land	Minimal	43.6 acres	22.5 acres
Rare, Threatened, and Endangered Species	Unlikely	0	0
Jurisdictional Streams	Minimal	6,301 feet	2,105 feet
Floodplains	Minimal	12.3 acres	4.7 acres
Wetlands	Minimal	1.89 acres	1.46 acres
Groundwater	None	None	None
Air Quality	Consistent with <i>Clean Air Act</i> standards	Consistent with <i>Clean Air Act</i> standards	Consistent with <i>Clean Air Act</i> standards
Noise	10 residences	3 residences	3 residences
Potentially Hazardous Waste Sites	Minimal	2	1 sliver take
Cultural Resources (NRHP-Listed/Eligible)	0	0	0
Utilities	0	Minimal	Minimal
Secondary Impacts	Minimal	Minimal, likely to be positive	Minimal, likely to be positive
Cumulative Impacts	Likely to be mostly positive	Likely to be mostly positive	Likely to be mostly positive
Temporary Construction Impacts	Yes	Yes	Yes
Energy	Most likely positive	Positive	Positive
Section 4(f) Resources	0	0	0
Cost	Project Dependent	\$16.0 million	\$12.3 million

In summary, there will be fewer impacts with the construction of Modified Alignment C rather than Alignment C. Additionally, Modified Alignment C will cost less to build. Consequently, Modified Alignment C is being identified as the preferred alternative for the project.

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Email: FRANK.J.JEZIORO@WV.GOV

**West Virginia Division of Natural  
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Email: DANNY.A.BENNETT@WV.GOV

**West Virginia Division of Natural  
Resources**  
Mr. Roger Anderson  
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Elkins, WV 26241  
Email: Rojer.J.Anderson@wv.gov

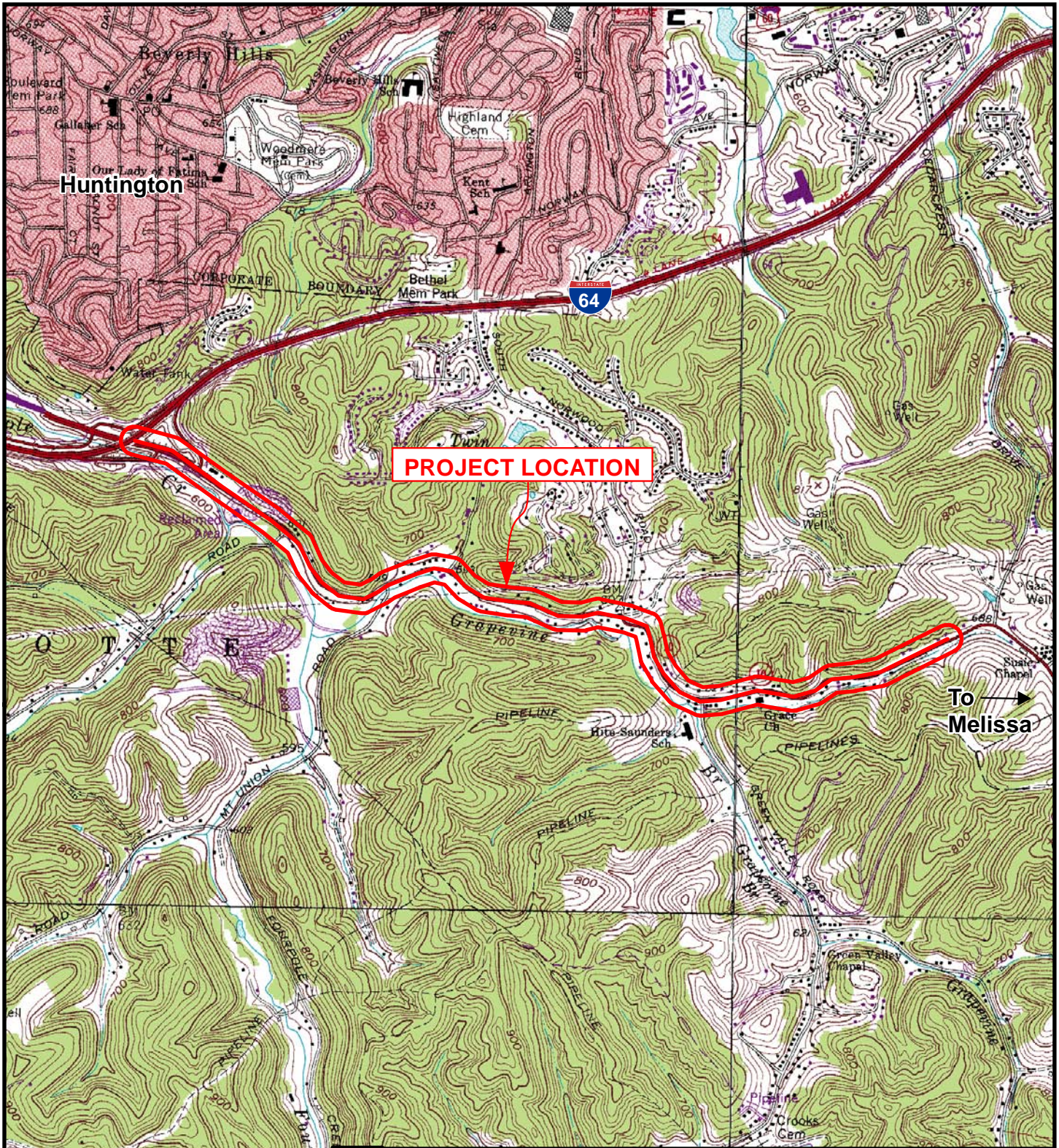
*Local Agencies*

**Cabell County Commission**  
Ms. Nancy Cartmill, President  
750 Fifth Avenue  
Huntington, WV 25701  
Email: ncartmill@cabellcounty.org

**KYOVA Interstate Planning Commission  
Region II Planning and Development  
Council of West Virginia**  
Ms. Michele P. Craig, Executive Director  
720 Fourth Avenue  
Huntington, WV 25701  
Email: mcraig@ntelos.net

## **FIGURES**

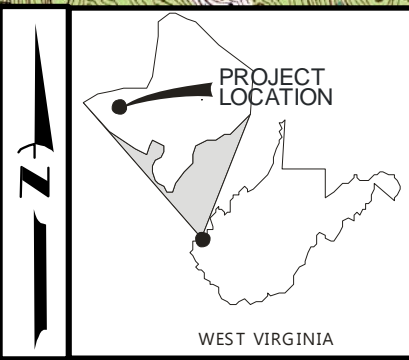
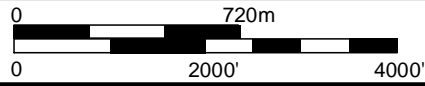




**PROJECT LOCATION**

To →  
**Melissa**

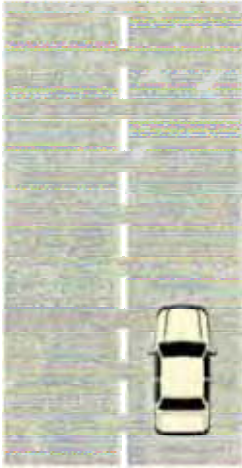
SOURCES: USGS QUAD. SHEETS - BARBOURSVILLE AND HUNTINGTON, WV-OH (1985, 2011); LAVALETTE AND WINSLOW, WV (1994A, 1994B)



WEST VIRGINIA DIVISION OF HIGHWAYS	
MELISSA-HUNTINGTON ROAD PROJECT WV 10 CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>PROJECT LOCATION</b>	
FIGURE - 1-1	SKELLY and LOY Inc. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING



LOS "A"



LOS "A" is defined as free flowing. Individual users are virtually unaffected by the presence of others in the traffic stream.

LOS "B"



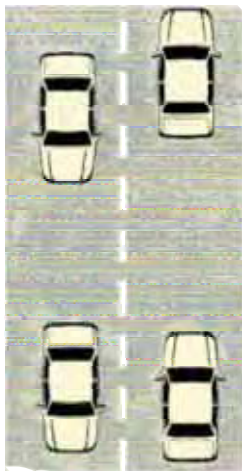
LOS "B" is in the range of stable flow, but the presence of others in the traffic stream begins to be noticeable.

LOS "C"



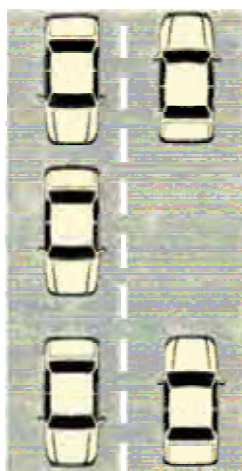
LOS "C" is in the range of stable flow, but marks the beginning of the range of flow in which the operations of individual users becomes significantly affected by the interactions of others in the traffic stream.

LOS "D"



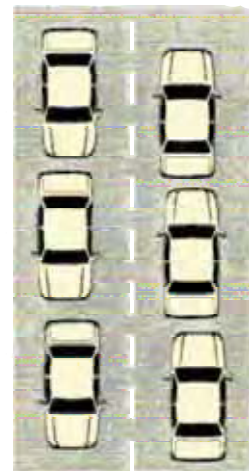
LOS "D" represents high density but stable flow. Speed and freedom to maneuver are severely restricted and the driver experiences a poor level of comfort and convenience.

LOS "E"



LOS "E" represents operating conditions at or near capacity level. Comfort and convenience levels are extremely poor and driver frustration is generally high.

LOS "F"



LOS "F" is used to define forced or breakdown flow. This condition exists whenever the amount of traffic approaching a point exceeds the amount which can travel through a point.

WEST VIRGINIA DIVISION OF HIGHWAYS

MELISSA-HUNTINGTON ROAD PROJECT

WV 10

CABELL COUNTY

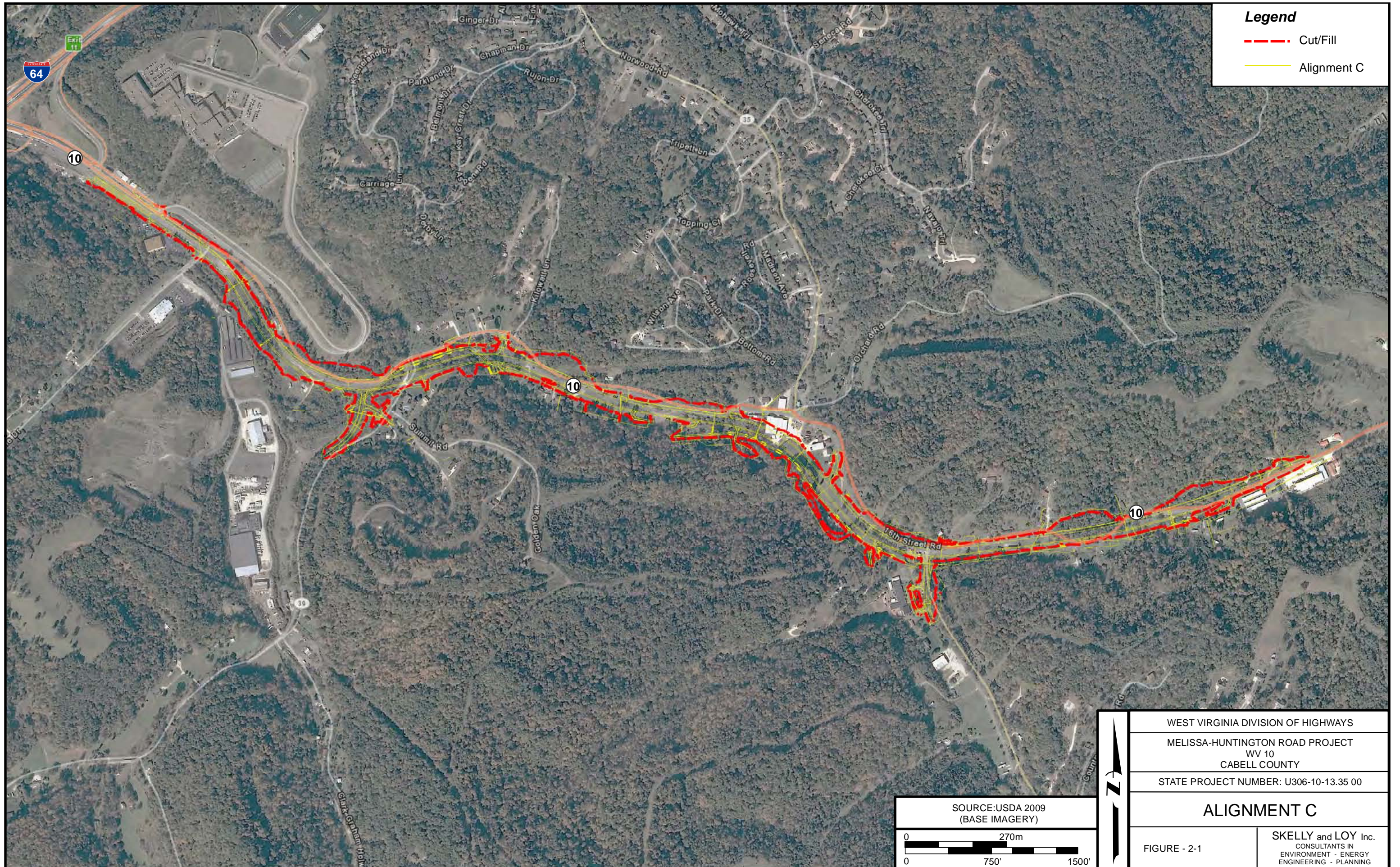
STATE PROJECT NUMBER: U306-10-13.35 00

LEVEL OF SERVICE

FIGURE - 1-2

SKELLY and LOY Inc.  
CONSULTANTS IN  
ENVIRONMENT - ENERGY  
ENGINEERING - PLANNING





**Legend**

- - - Cut/Fill
- Alignment C

WEST VIRGINIA DIVISION OF HIGHWAYS	
MELISSA-HUNTINGTON ROAD PROJECT	
WV 10	
CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>ALIGNMENT C</b>	
FIGURE - 2-1	<b>SKELLY and LOY Inc.</b> CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING

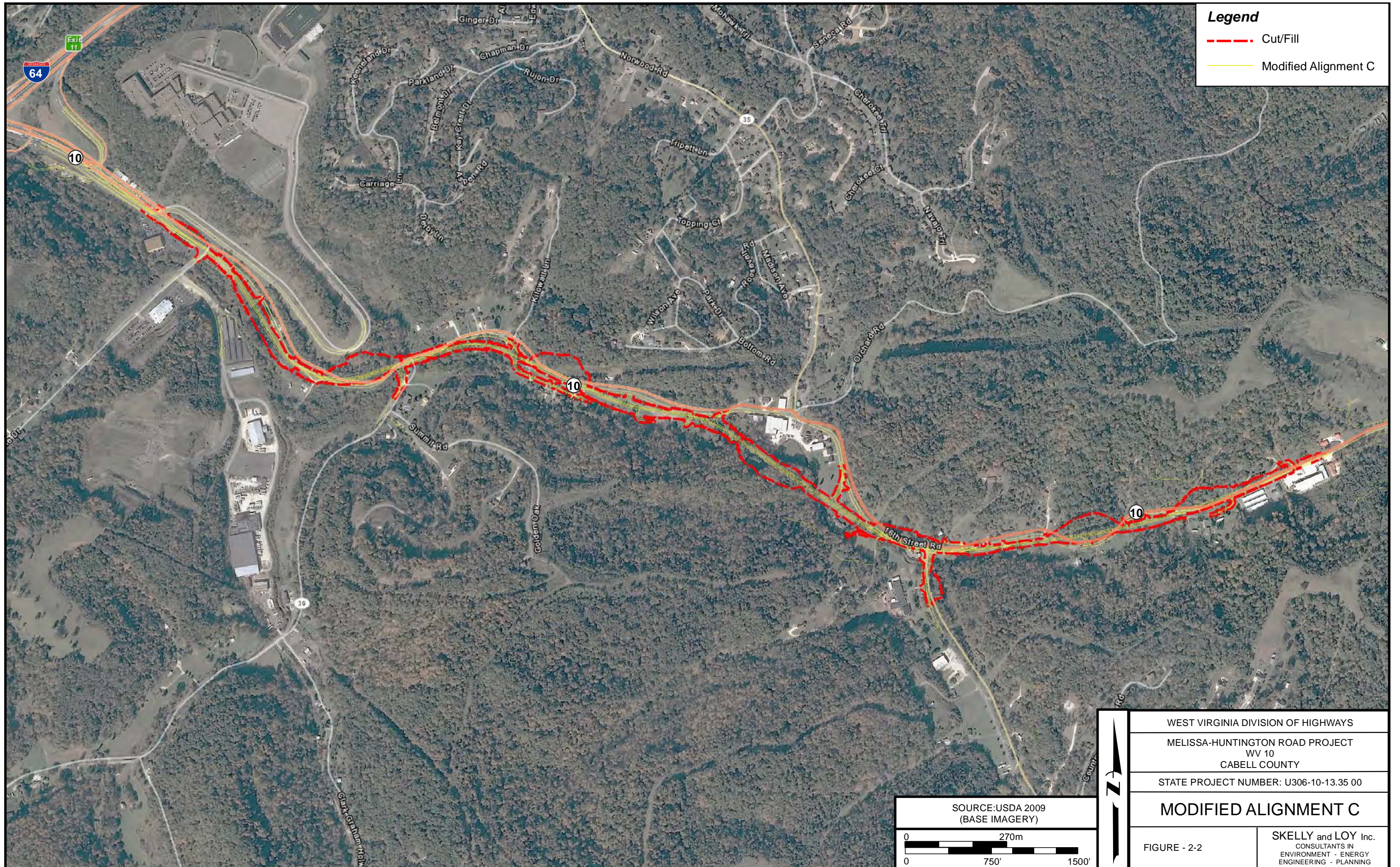
SOURCE: USDA 2009  
(BASE IMAGERY)

270m

750'1500'







**Legend**

- - - Cut/Fill
- Modified Alignment C



WEST VIRGINIA DIVISION OF HIGHWAYS  
 MELISSA-HUNTINGTON ROAD PROJECT  
 WV 10  
 CABELL COUNTY  
 STATE PROJECT NUMBER: U306-10-13.35 00

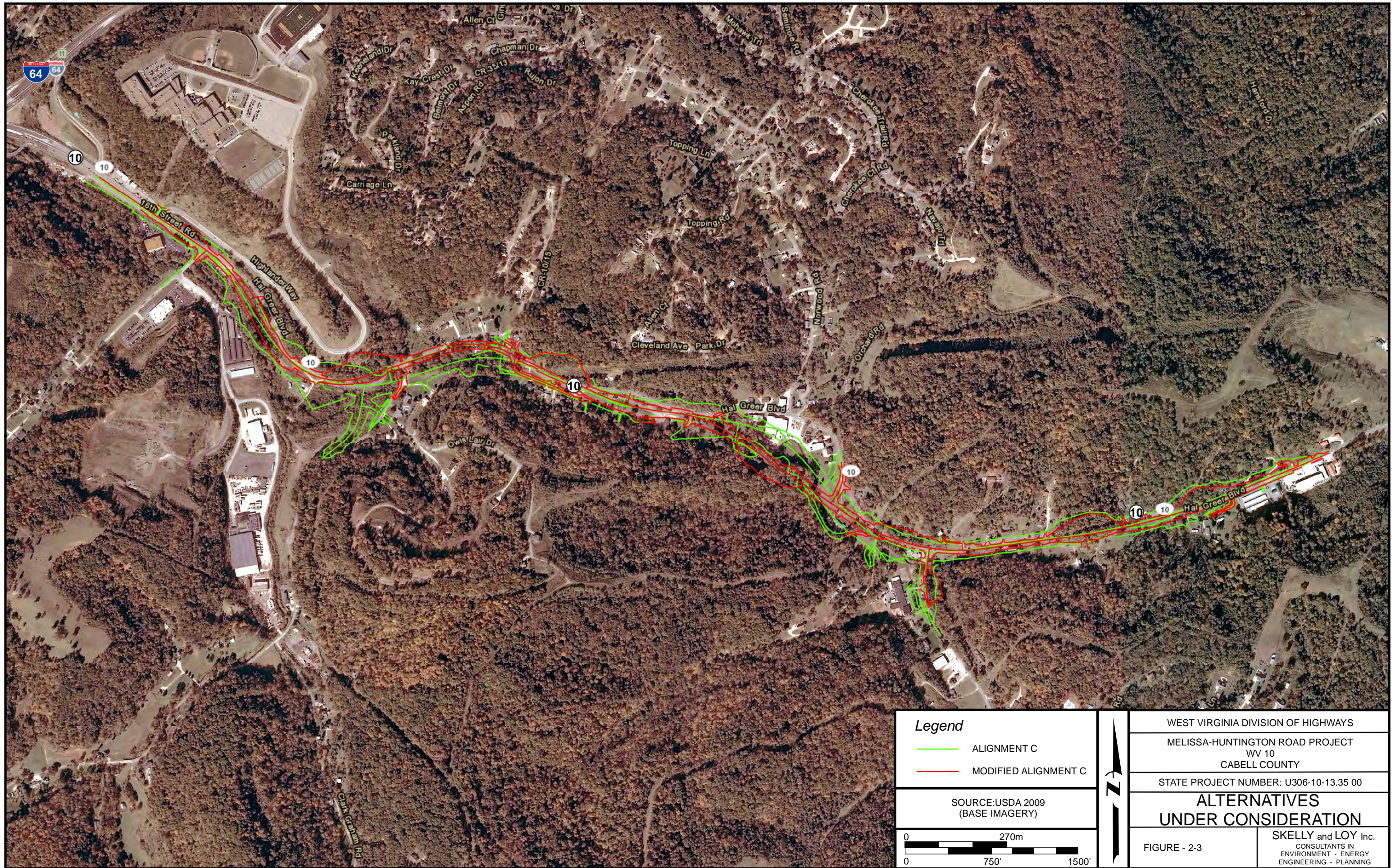
**MODIFIED ALIGNMENT C**

FIGURE - 2-2

SKELLY and LOY Inc.  
 CONSULTANTS IN  
 ENVIRONMENT - ENERGY  
 ENGINEERING - PLANNING

SOURCE: USDA 2009  
 (BASE IMAGERY)





64 64

10

16th Street Rd

Highlander Way

Hal Greer Blvd

10

10

Hal Greer Blvd

10

10

10

Hal Greer Blvd

Clark Graham Rd

**Legend**

- ALIGNMENT C
- MODIFIED ALIGNMENT C

SOURCE: USDA 2009  
(BASE IMAGERY)

0 270m  
0 750' 1500'



WEST VIRGINIA DIVISION OF HIGHWAYS

MELISSA-HUNTINGTON ROAD PROJECT  
WV 10  
CABELL COUNTY

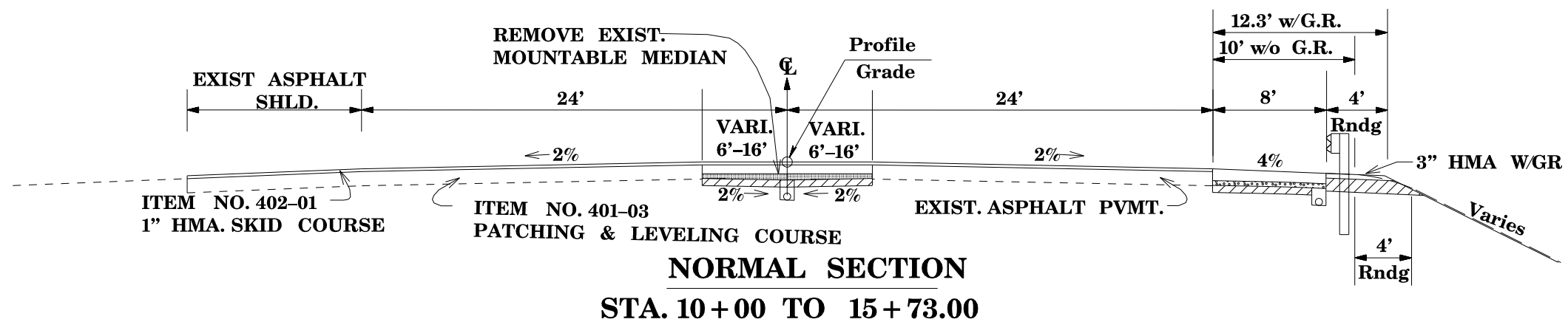
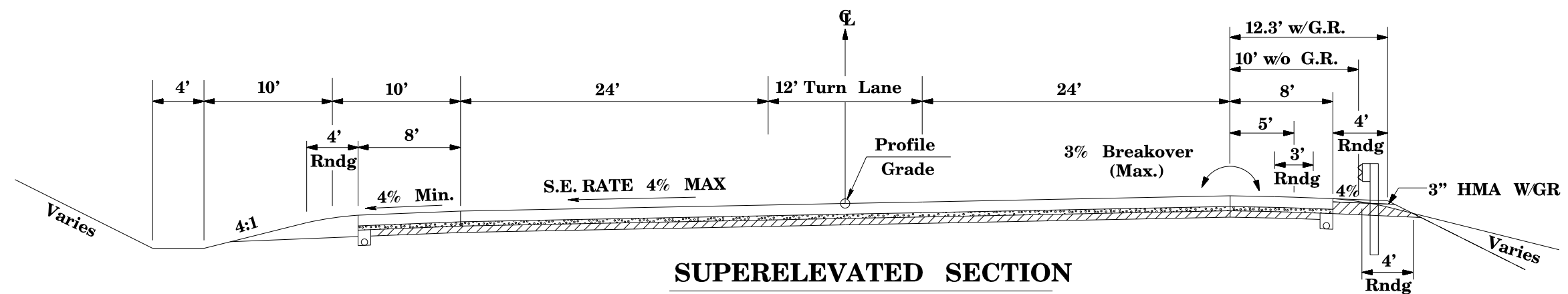
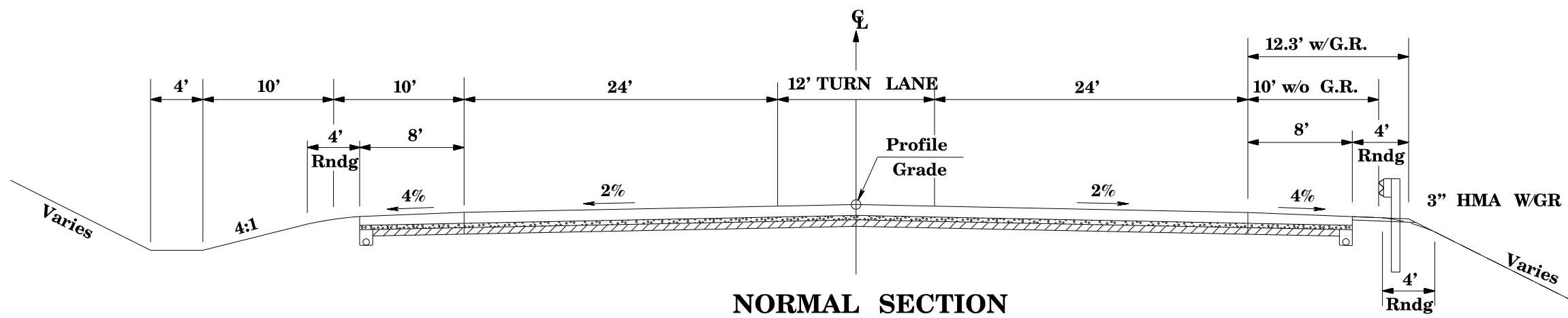
STATE PROJECT NUMBER: U306-10-13.35 00

**ALTERNATIVES  
UNDER CONSIDERATION**

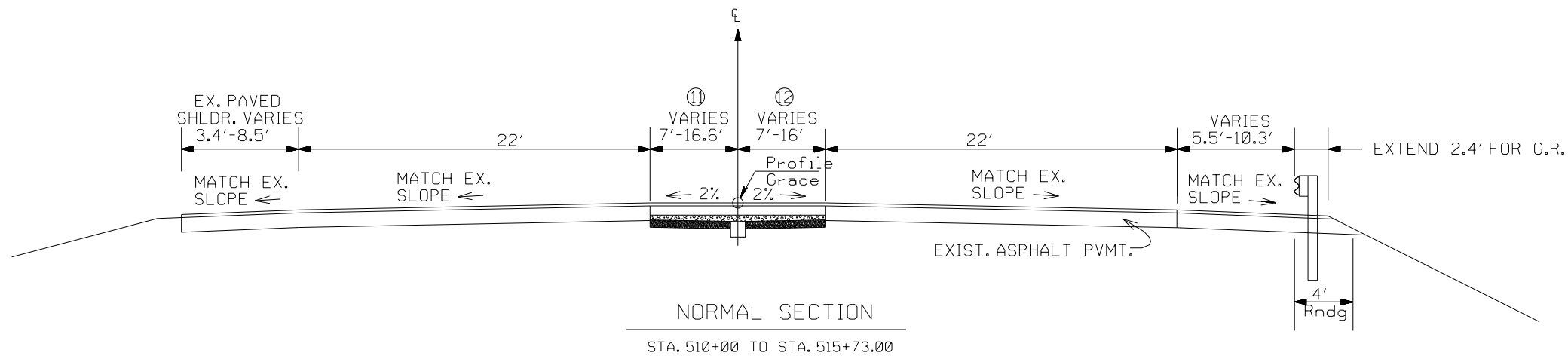
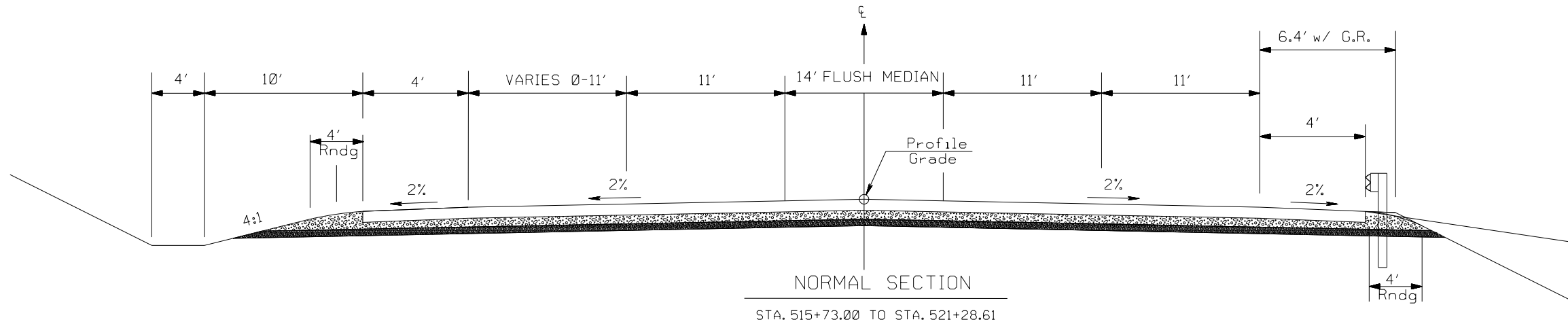
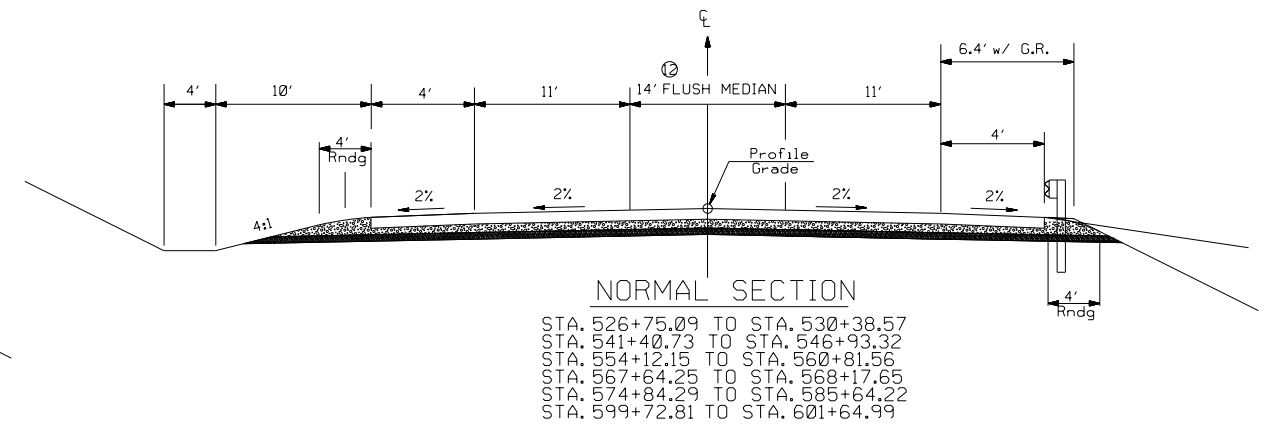
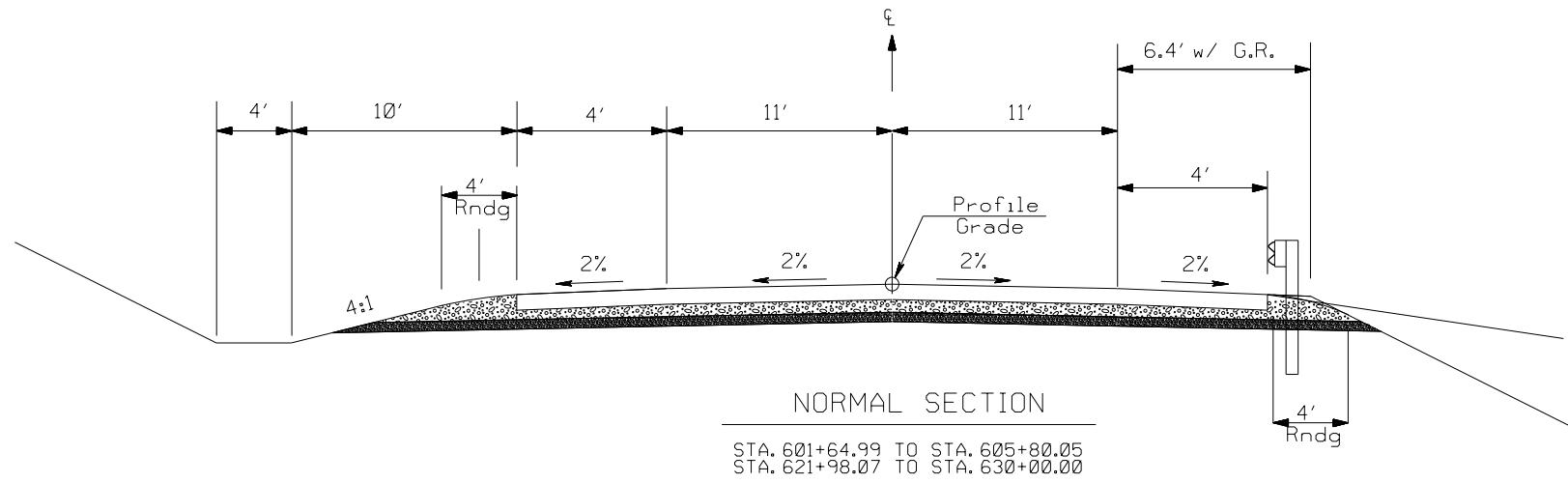
FIGURE - 2-3

SKELLY and LOY Inc.  
CONSULTANTS IN  
ENVIRONMENT - ENERGY  
ENGINEERING - PLANNING



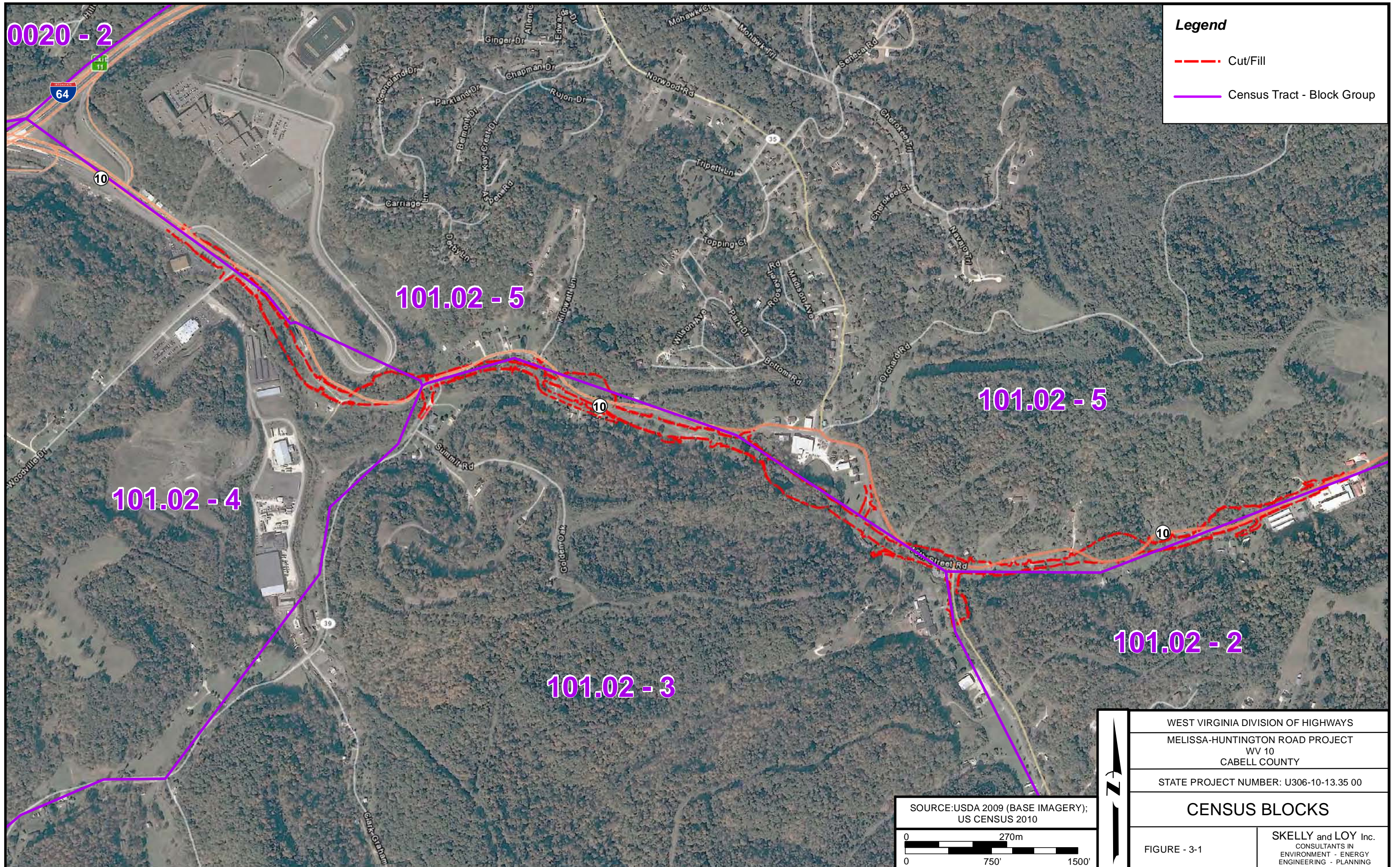


WEST VIRGINIA DIVISION OF HIGHWAYS	
MELISSA-HUNTINGTON ROAD PROJECT WV 10 CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>TYPICAL HIGHWAY SECTIONS ALIGNMENT C</b>	
FIGURE - 2-4	SKELLY and LOY, Inc. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING



WEST VIRGINIA DIVISION OF HIGHWAYS	
MELISSA-HUNTINGTON ROAD PROJECT	
WV 10 CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>TYPICAL HIGHWAY SECTIONS MODIFIED ALIGNMENT C</b>	
FIGURE - 2-5	SKELLY and LOY, Inc. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING





**Legend**

- - - Cut/Fill
- Census Tract - Block Group

WEST VIRGINIA DIVISION OF HIGHWAYS MELISSA-HUNTINGTON ROAD PROJECT WV 10 CABELL COUNTY
STATE PROJECT NUMBER: U306-10-13.35 00
CENSUS BLOCKS
SKELLY and LOY Inc. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING

SOURCE: USDA 2009 (BASE IMAGERY);  
US CENSUS 2010

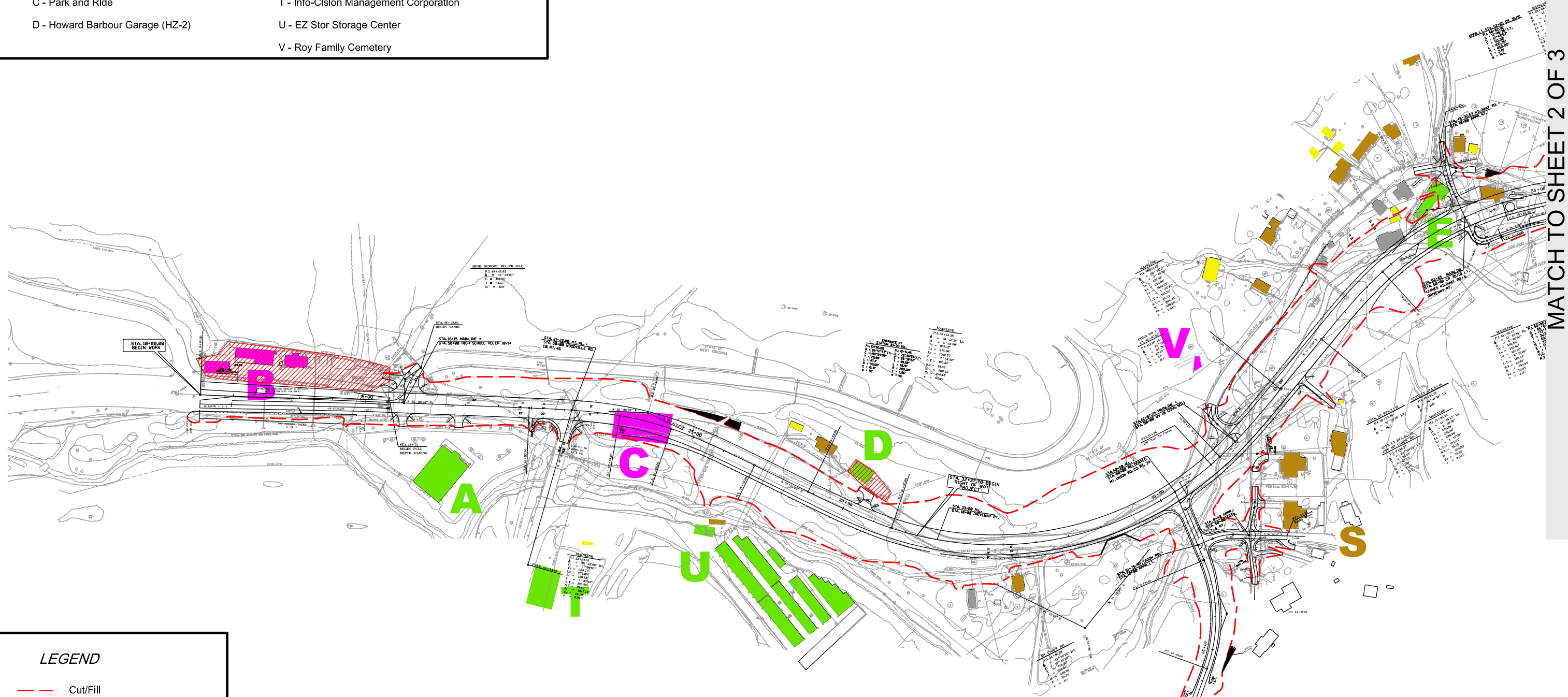


FIGURE - 3-1



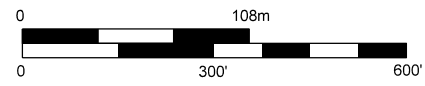
**FEATURES KEY**

- |  |  |
|--|--|
| A - Cabell Gateway Professional Building | E - Taylor Construction                        |
| B - WVDOH Maintenance Facility (HZ-1)    | S - Summit Ridge Housing Development (planned) |
| C - Park and Ride                        | T - Info-Cision Management Corporation         |
| D - Howard Barbour Garage (HZ-2)         | U - EZ Stor Storage Center                     |
|  | V - Roy Family Cemetery                        |



**LEGEND**

- Cut/Fill
- Abandoned / Vacant
- Business
- Community Facility
- Outbuilding
- Residential
- Potential Hazardous Waste Site



WEST VIRGINIA DIVISION OF HIGHWAYS MELISSA-HUNTINGTON ROAD PROJECT WV 10 CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>SOCIOECONOMIC FEATURES ALIGNMENT C</b>	
FIGURE - 3-2 SHEET 1 OF 3	SKELLY and LOY, Inc. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING

MATCH TO SHEET 2 OF 3

**FEATURES KEY**

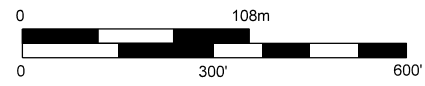
- F - Bible Apostolic Church
- G - T&T Transmission Service (HZ-3)
- H - Green Valley Volunteer Fire Department
- I - Wooten Machine Shop (HZ-4)
- J - Rich Oil Station (HZ-5)
- K - Green Valley Baptist Bible Church
- L - Hite-Saunders Elementary School



MATCH TO SHEET 3 OF 3

**LEGEND**

- Business
- Community Facility
- Outbuilding
- Residential
- Cut/Fill
- Potential Hazardous Waste Site



WEST VIRGINIA DIVISION OF HIGHWAYS MELISSA-HUNTINGTON ROAD PROJECT WV 10 CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>SOCIOECONOMIC FEATURES ALIGNMENT C</b>	
FIGURE - 3-2 SHEET 2 OF 3	SKELLY and LOY, Inc. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING

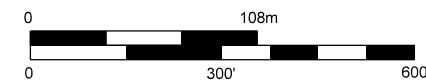
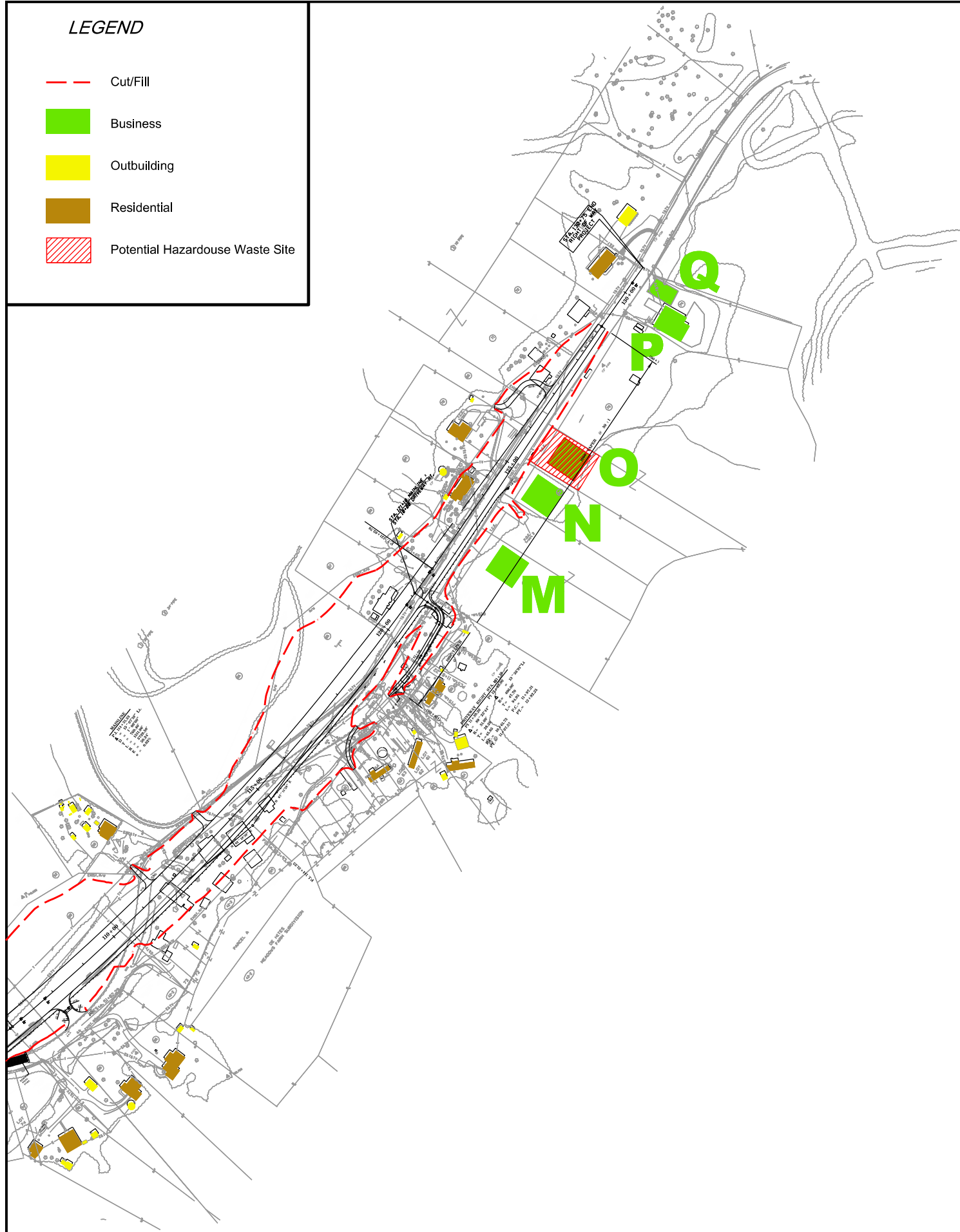


**LEGEND**

-  Cut/Fill
-  Business
-  Outbuilding
-  Residential
-  Potential Hazardouse Waste Site

**FEATURES KEY**

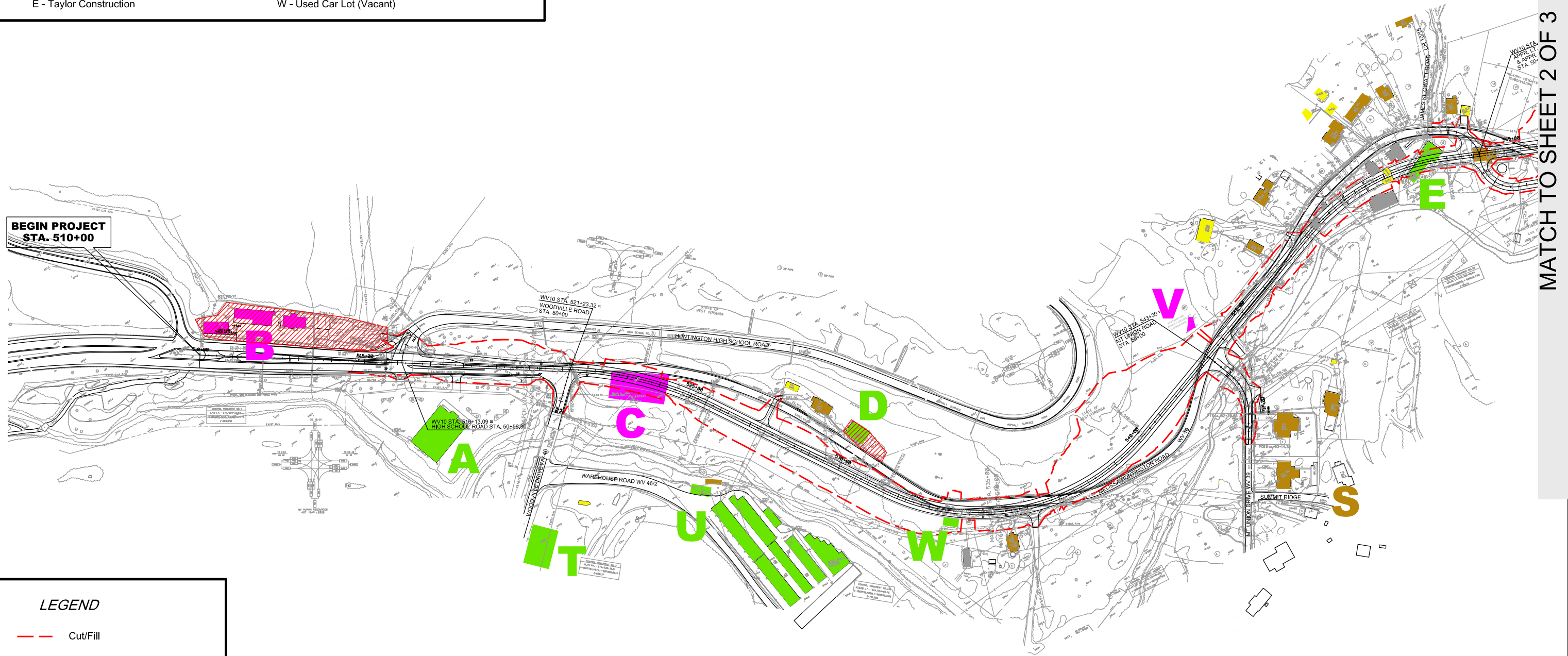
- M - Nelson's Storage
- N - Nelson's Car Wash
- O - Cameron Industrial Machine and Fabrication (HZ-6)
- P - Raynor Garage Door Products /  
Huntington Garage Door Company
- Q - M.A.R.S. Interior Woodwork



WEST VIRGINIA DIVISION OF HIGHWAYS	
MELISSA-HUNTINGTON ROAD PROJECT	
WV 10	
CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>SOCIOECONOMIC FEATURES ALIGNMENT C</b>	
FIGURE - 3-2 SHEET 3 OF 3	<b>SKELLY and LOY, Inc.</b> CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING

**FEATURES KEY**

- |  |  |
|--|--|
| A - Cabell Gateway Professional Building | S - Summit Ridge Housing Development (Planned) |
| B - WVDOH Maintenance Facility (HZ-1)    | T - Info-Cision Management Corporation         |
| C - Park and Ride                        | U - EZ Stor Storage Center                     |
| D - Howard Barbour Garage (HZ-2)         | V - Roy Family Cemetery                        |
| E - Taylor Construction                  | W - Used Car Lot (Vacant)                      |



**BEGIN PROJECT  
STA. 510+00**

**MATCH TO SHEET 2 OF 3**

**LEGEND**

- Cut/Fill
- Abandoned / Vacant
- Business
- Community Facility
- Outbuilding
- Residential
- Potential Hazardous Waste Site

WEST VIRGINIA DIVISION OF HIGHWAYS MELISSA-HUNTINGTON ROAD PROJECT WV 10 CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>SOCIOECONOMIC FEATURES MODIFIED ALIGNMENT C</b>	
FIGURE - 3-3 SHEET 1 OF 3	SKELLY and LOY, Inc. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING




**FEATURES KEY**

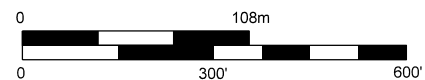
- |  |                                       |
|--|---------------------------------------|
| F - Bible Apostolic Church                 | J - Rich Oil Station (HZ-5)           |
| G - T&T Transmission Service (HZ-3)        | K - Green Valley Baptist Bible Church |
| H - Green Valley Volunteer Fire Department | L - Hite-Saunders Elementary School   |
| I - Wooten Machine Shop (HZ-4)             |                                       |



MATCH TO SHEET 3 OF 3

**LEGEND**

- |   |                    |   |                                |
|---|--------------------|---|--------------------------------|
|  | Business           |  | Cut/Fill                       |
|  | Community Facility |  | Potential Hazardous Waste Site |
|  | Outbuilding        |   |                                |
|  | Residential        |   |                                |



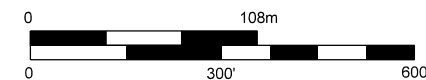
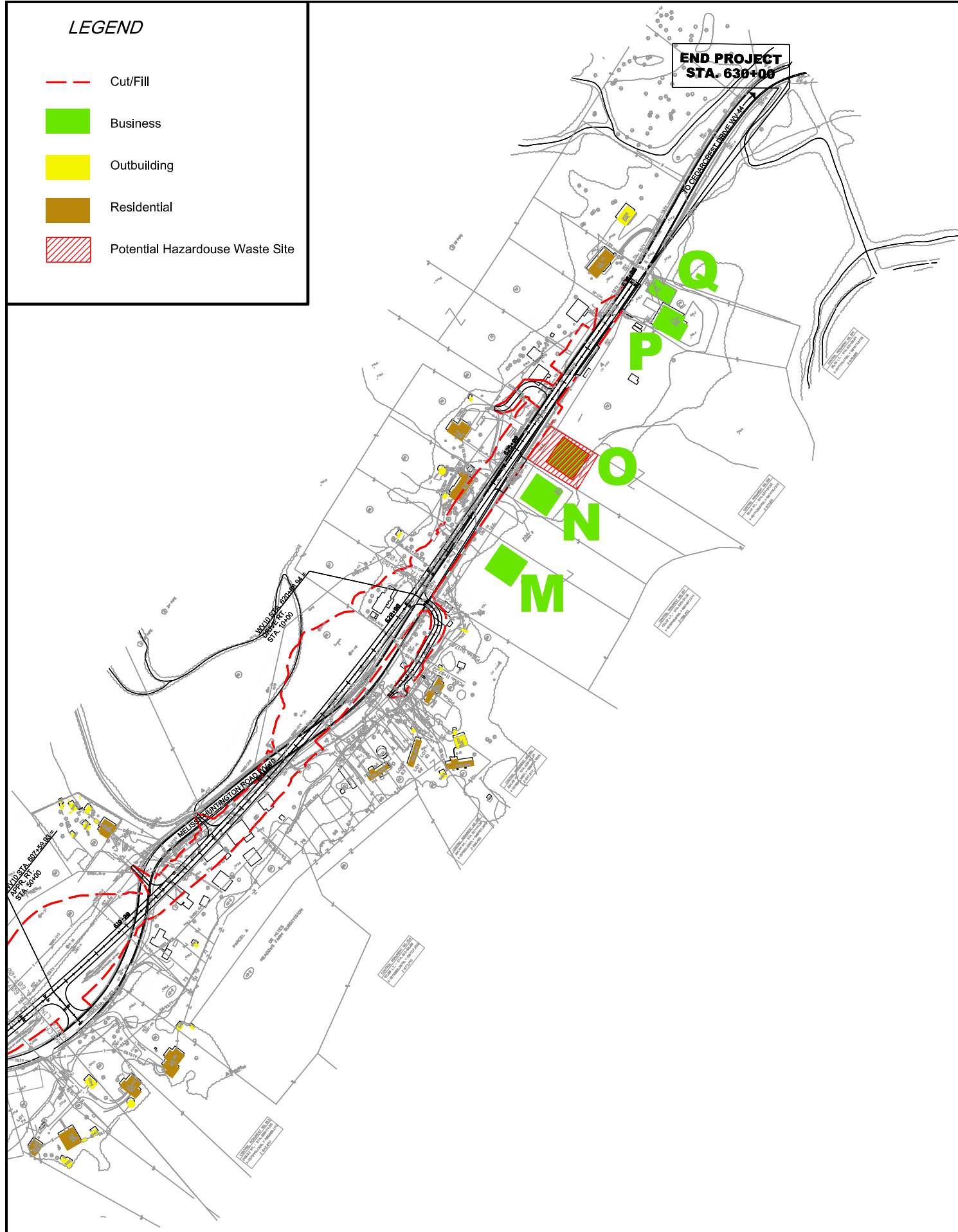
WEST VIRGINIA DIVISION OF HIGHWAYS MELISSA-HUNTINGTON ROAD PROJECT WV 10 CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>SOCIOECONOMIC FEATURES MODIFIED ALIGNMENT C</b>	
FIGURE - 3-3 SHEET 2 OF 3	SKELLY and LOY, Inc. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING

**LEGEND**

-  Cut/Fill
-  Business
-  Outbuilding
-  Residential
-  Potential Hazardouse Waste Site

**FEATURES KEY**

- M - Nelson's Storage
- N - R10 Pit Stop (Gas & Mini-mart)
- O - Cameron Industrial Machine and Fabrication (HZ-6)
- P - Raynor Garage Door Products /  
Huntington Garage Door Company
- Q - M.A.R.S. Interior Woodwork (Vacant)



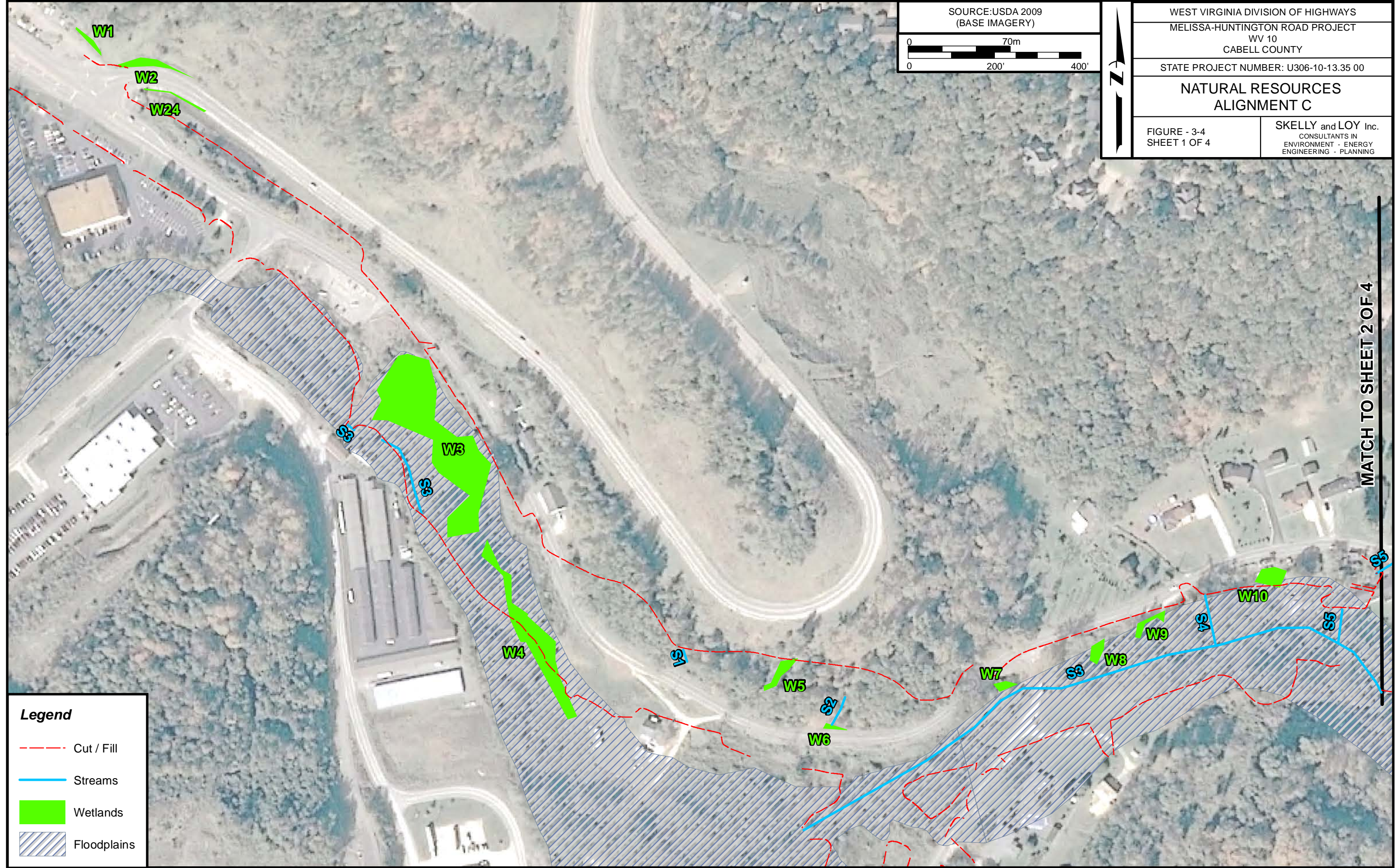
WEST VIRGINIA DIVISION OF HIGHWAYS	
MELISSA-HUNTINGTON ROAD PROJECT	
WV 10	
CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>SOCIOECONOMIC FEATURES MODIFIED ALIGNMENT C</b>	
FIGURE - 3-3 SHEET 3 OF 3	<b>SKELLY and LOY, Inc.</b> CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING



SOURCE:USDA 2009  
(BASE IMAGERY)



WEST VIRGINIA DIVISION OF HIGHWAYS	
MELISSA-HUNTINGTON ROAD PROJECT	
WV 10 CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>NATURAL RESOURCES ALIGNMENT C</b>	
FIGURE - 3-4 SHEET 1 OF 4	SKELLY and LOY Inc. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING



**Legend**

- Cut / Fill
- Streams
- Wetlands
- Floodplains

MATCH TO SHEET 2 OF 4



SOURCE: USDA 2009  
(BASE IMAGERY)



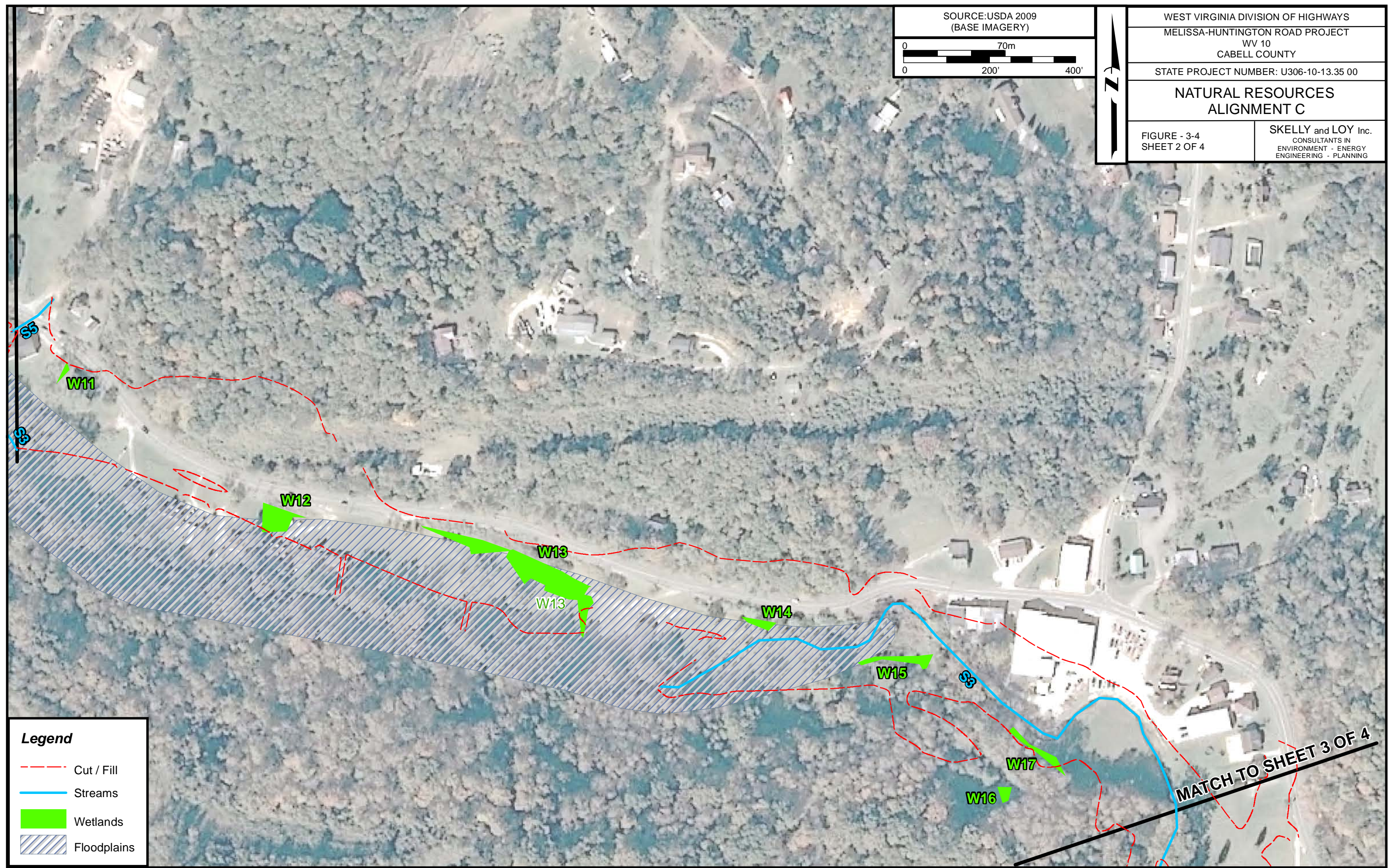
WEST VIRGINIA DIVISION OF HIGHWAYS  
MELISSA-HUNTINGTON ROAD PROJECT  
WV 10  
CABELL COUNTY

STATE PROJECT NUMBER: U306-10-13.35 00

### NATURAL RESOURCES ALIGNMENT C

FIGURE - 3-4  
SHEET 2 OF 4

SKELLY and LOY Inc.  
CONSULTANTS IN  
ENVIRONMENT - ENERGY  
ENGINEERING - PLANNING



#### Legend

- - - Cut / Fill
- Streams
- Wetlands
- Floodplains

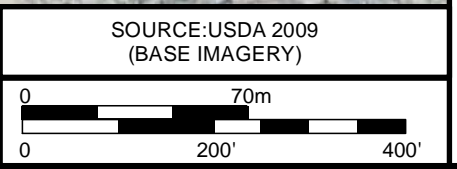
MATCH TO SHEET 3 OF 4





**Legend**

- - - Cut / Fill
- Streams
- Wetlands



	WEST VIRGINIA DIVISION OF HIGHWAYS MELISSA-HUNTINGTON ROAD PROJECT WV 10 CABELL COUNTY
	STATE PROJECT NUMBER: U306-10-13.35 00
	<b>NATURAL RESOURCES ALIGNMENT C</b>
FIGURE - 3-4 SHEET 3 OF 4	SKELLY and LOY Inc. CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING





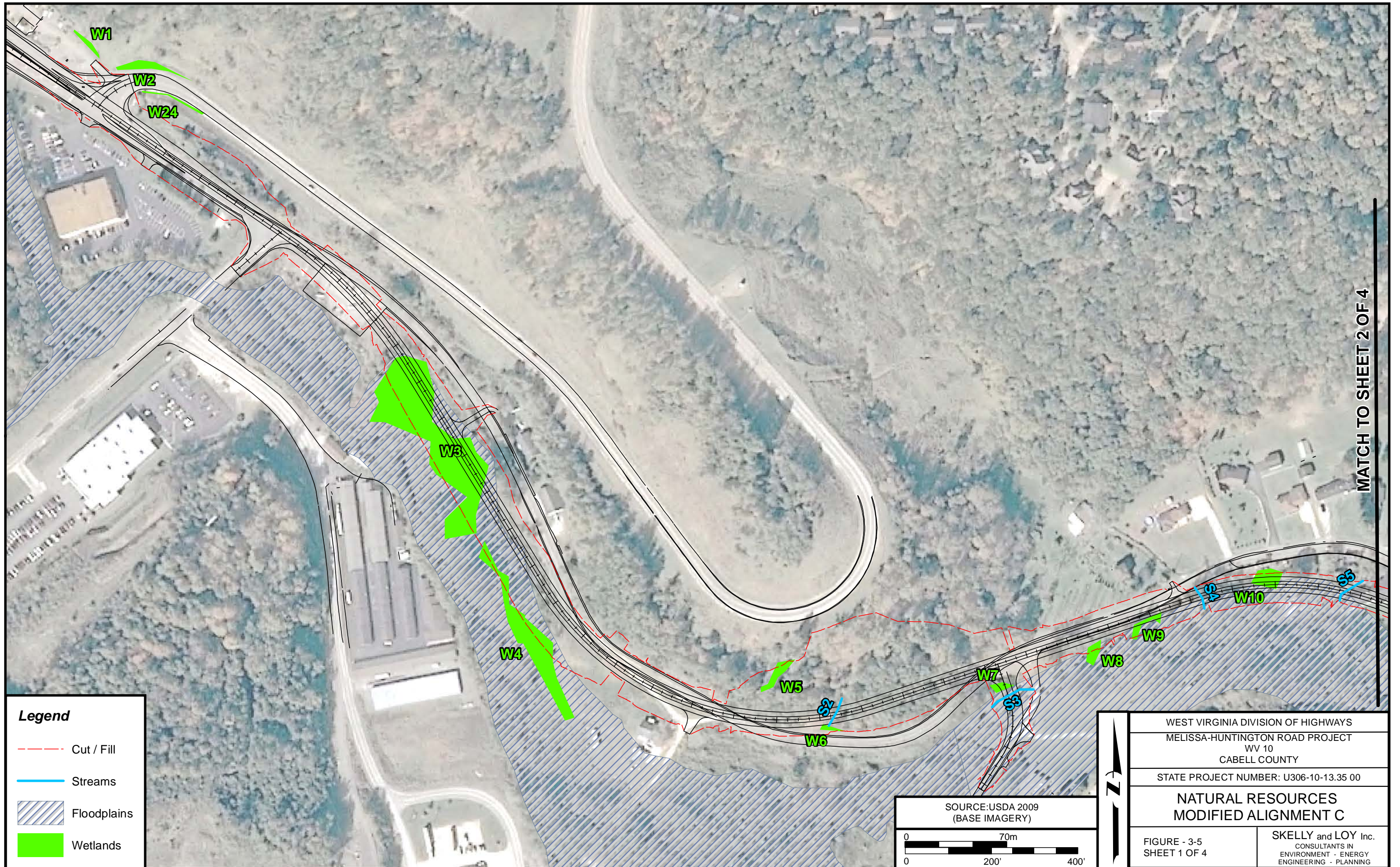
**Legend**

- - - Cut / Fill
- Streams
- Wetlands

SOURCE: USDA 2009  
(BASE IMAGERY)

WEST VIRGINIA DIVISION OF HIGHWAYS	
MELISSA-HUNTINGTON ROAD PROJECT	
WV 10	
CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>NATURAL RESOURCES ALIGNMENT C</b>	
FIGURE - 3-4 SHEET 4 OF 4	<b>SKELLY and LOY Inc.</b> CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING





**Legend**

- Cut / Fill
- Streams
- Floodplains
- Wetlands

SOURCE: USDA 2009  
(BASE IMAGERY)



WEST VIRGINIA DIVISION OF HIGHWAYS  
MELISSA-HUNTINGTON ROAD PROJECT  
WV 10  
CABELL COUNTY

STATE PROJECT NUMBER: U306-10-13.35 00

**NATURAL RESOURCES  
MODIFIED ALIGNMENT C**

FIGURE - 3-5  
SHEET 1 OF 4

SKELLY and LOY Inc.  
CONSULTANTS IN  
ENVIRONMENT - ENERGY  
ENGINEERING - PLANNING

MATCH TO SHEET 2 OF 4



SOURCE: USDA 2009  
(BASE IMAGERY)



WEST VIRGINIA DIVISION OF HIGHWAYS  
MELISSA-HUNTINGTON ROAD PROJECT  
WV 10  
CABELL COUNTY

STATE PROJECT NUMBER: U306-10-13.35 00

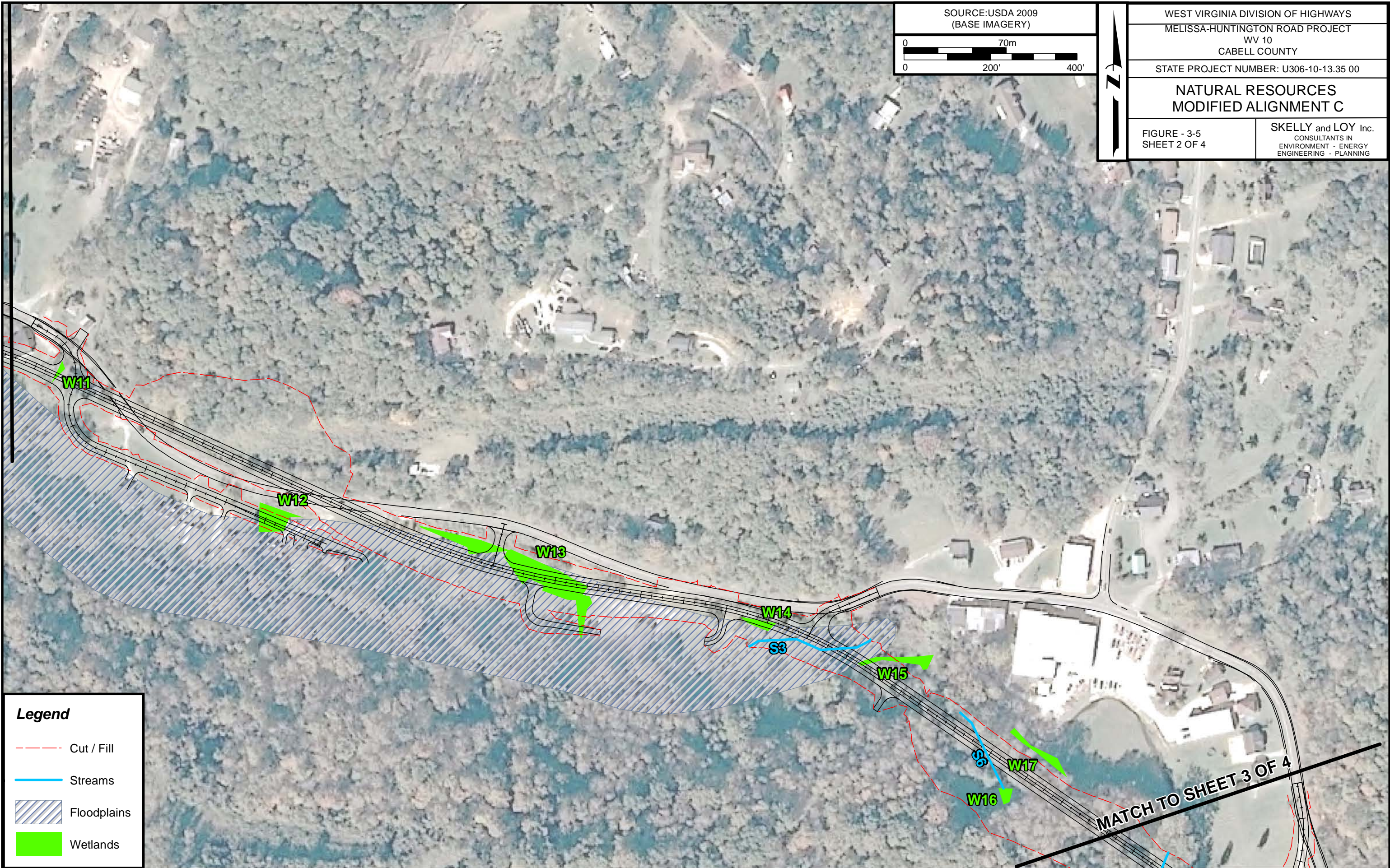
**NATURAL RESOURCES  
MODIFIED ALIGNMENT C**

FIGURE - 3-5  
SHEET 2 OF 4

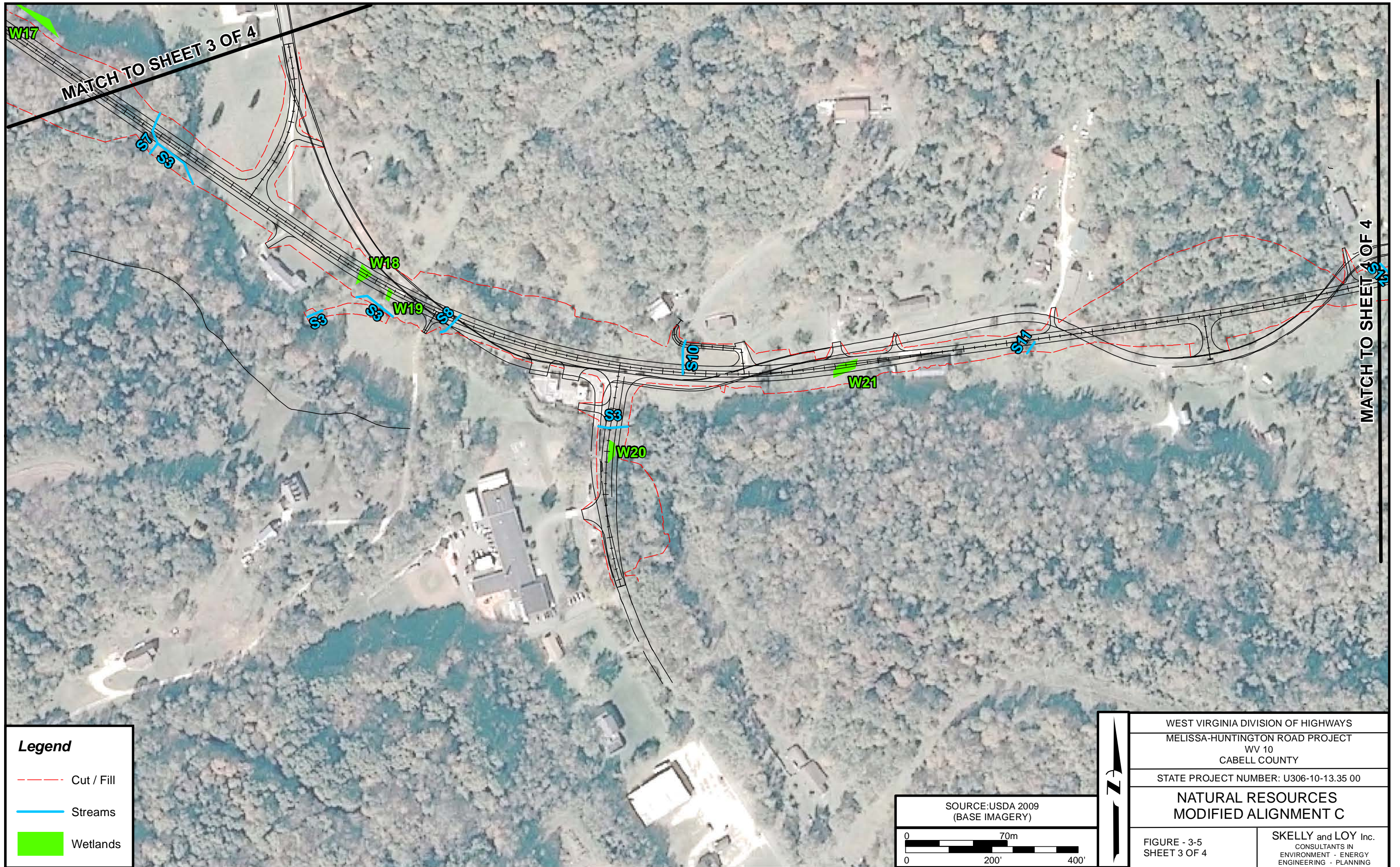
**SKELLY and LOY Inc.**  
CONSULTANTS IN  
ENVIRONMENT - ENERGY  
ENGINEERING - PLANNING

**Legend**

- - - Cut / Fill
- Streams
- ▨ Floodplains
- Wetlands



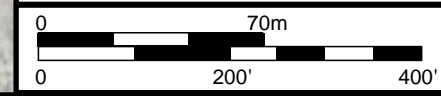




**Legend**

- - - Cut / Fill
- Streams
- Wetlands

SOURCE: USDA 2009  
(BASE IMAGERY)



WEST VIRGINIA DIVISION OF HIGHWAYS  
MELISSA-HUNTINGTON ROAD PROJECT  
WV 10  
CABELL COUNTY

STATE PROJECT NUMBER: U306-10-13.35 00

**NATURAL RESOURCES  
MODIFIED ALIGNMENT C**

FIGURE - 3-5  
SHEET 3 OF 4

SKELLY and LOY Inc.  
CONSULTANTS IN  
ENVIRONMENT - ENERGY  
ENGINEERING - PLANNING

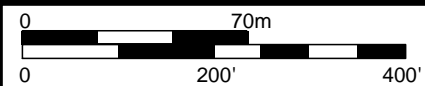




**Legend**

- - - Cut / Fill
- Streams
- Wetlands

SOURCE: USDA 2009  
(BASE IMAGERY)



WEST VIRGINIA DIVISION OF HIGHWAYS  
MELISSA-HUNTINGTON ROAD PROJECT  
WV 10  
CABELL COUNTY

STATE PROJECT NUMBER: U306-10-13.35 00

**NATURAL RESOURCES  
MODIFIED ALIGNMENT C**

FIGURE - 3-5  
SHEET 4 OF 4

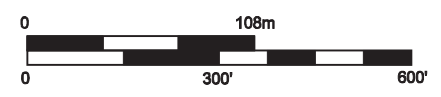
SKELLY and LOY Inc.  
CONSULTANTS IN  
ENVIRONMENT - ENERGY  
ENGINEERING - PLANNING



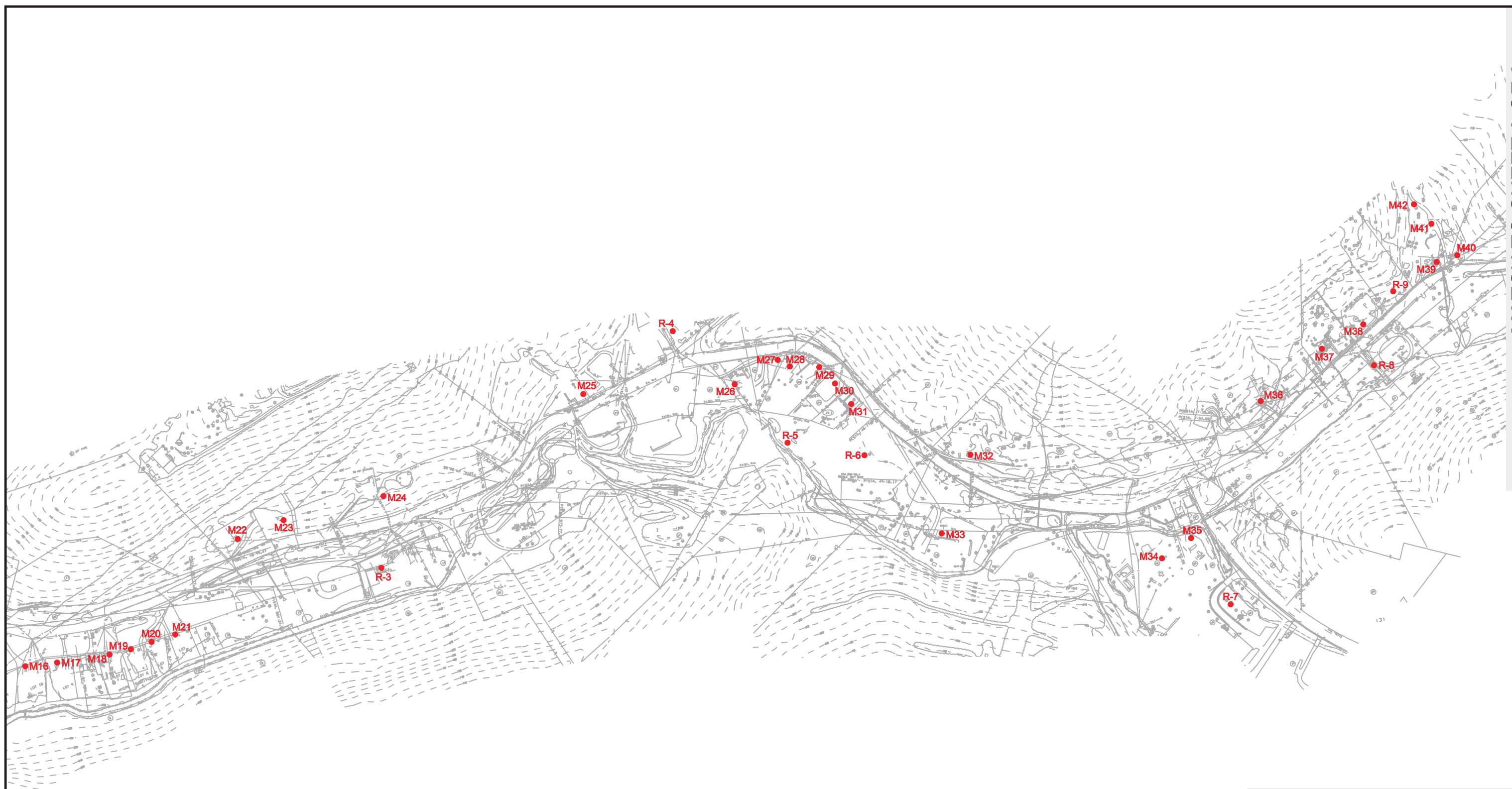


**LEGEND**

- M54 Monitoring Site
- R-11 Modeling Site

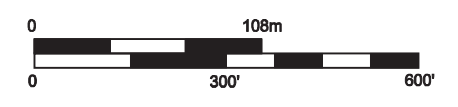


WEST VIRGINIA DIVISION OF HIGHWAYS	
MELISSA-HUNTINGTON ROAD PROJECT WV 10 CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>NOISE RECEPTORS</b>	
FIGURE - 3-6 SHEET 1 OF 3	<b>SKELLY and LOY, Inc.</b> CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING



**LEGEND**

- M54 Monitoring Site
- R-11 Modeling Site



WEST VIRGINIA DIVISION OF HIGHWAYS  
MELISSA-HUNTINGTON ROAD PROJECT  
WV 10  
CABELL COUNTY

STATE PROJECT NUMBER: U306-10-13.35 00

**NOISE RECEPTORS**

FIGURE - 3-6  
SHEET 2 OF 3

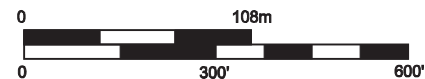
**SKELLY and LOY, Inc.**  
CONSULTANTS IN  
ENVIRONMENT - ENERGY  
ENGINEERING - PLANNING





**LEGEND**

- M54 Monitoring Site
- R-11 Modeling Site



WEST VIRGINIA DIVISION OF HIGHWAYS	
MELISSA-HUNTINGTON ROAD PROJECT WV 10 CABELL COUNTY	
STATE PROJECT NUMBER: U306-10-13.35 00	
<b>NOISE RECEPTORS</b>	
FIGURE - 3-6 SHEET 3 OF 3	<b>SKELLY and LOY, Inc.</b> CONSULTANTS IN ENVIRONMENT - ENERGY ENGINEERING - PLANNING

## **APPENDIX**

-----Original Message-----

From: Stout, Elizabeth [[mailto:elizabeth\\_stout@fws.gov](mailto:elizabeth_stout@fws.gov)]

Sent: Wed 3/5/2014 4:28 PM

To: Cummings, Traci L

Subject: Re: Northern Long Eared Bat- Melissa to Huntington WV 10

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

On Tue, Mar 4, 2014 at 1:30 PM, Cummings, Traci L <[Traci.L.Cummings@wv.gov](mailto:Traci.L.Cummings@wv.gov)> wrote:

Liz,

We received a "no effect" response on December 20, 2011 for the Melissa to Huntington Road Project in Cabell County. We are wanting to clarify that this "no effect" still stands even with the proposed listing of the Northern Long Eared Bat. We want to make sure our Environmental Assessment is up to date with the latest species, and clearance.

I've attached a location map, the original FWS clearance of December 20, 2011, and the original letter that was submitted on December 14, 2011.

If you have any questions please let me know.

Thanks,

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>



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

RECEIVED

DEC 16 2011

WVFO

December 14, 2011

Ms. Deborah Carter  
US Fish and Wildlife Service  
694 Beverly Pike  
Elkins, West Virginia 26241

Dear Ms. Carter:

State Project U306-10-13.35  
Federal Project  
Melissa-Huntington Road Project  
Cabell County

We are submitting this project to the Service for individual project review because it is not covered under our current Blanket Letter Agreement because it will require an Environmental Assessment document to be produced. The project has been run through our GIS layers and no endangered species were flagged.

The project is developing transportation improvement along WV 10 in Cabell County from CR 46 to CR 44. The project is approximately 2.27 miles. The preferred alternative would consist of a three-lane roadway with two 11-foot travel lanes in each direction and a center turning lane. The roadway would also feature paved shoulders on both sides of the road varying from 4 to 8 feet. The proposed roadway improvement will



United States Department of the Interior

FISH AND WILDLIFE SERVICE



West Virginia Field Office  
694 Beverly Pike  
Elkins, West Virginia 26241

In response to your letter above, we have made a "no effect" determination that the project will not affect federally-listed endangered or threatened species. Therefore no biological assessment or further section 7 consultation under the Endangered Species Act is required with the Fish and Wildlife Service. Should project plans change, or if additional information on listed and proposed species becomes available, this determination may be reconsidered.

Definitive determinations of the presence of waters of the United States, including wetlands, in the project area and the need for permits, if any, are made by the U.S. Army Corps of Engineers. They may be contacted at: Huntington District, Regulatory Branch, 502 Eighth Street, Huntington, West Virginia 25701, telephone (304) 399-5710.

*[Signature]* 12-20-11  
Reviewer's signature and date

*[Signature]* 12/21/11  
Field Supervisor's signature and date



**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

December 22, 2011

Mr. Gregory L. Bailey  
Division of Highways  
1900 Kanawha Boulevard, East  
Building Five, Room 110  
Charleston, WV 25305-0430

Dear Mr. Bailey:

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:

JG, TC  
Joe R

State Project U306-10-13.35 Federal Project STP-0010(095)EQ Melissa-Huntington Road Project Cabell County	Our records indicate no known occurrences of RTE species or natural trout streams at this site.
State Project S344-119-20.84 Federal Project BR-0119(213)D Whiting Electric Arch Roane County	Our records indicate no known occurrences of RTE species or natural trout streams at this site. Mussel surveys are required.
State Project S344-119-19.49 & S344-119-19.59 Federal Project BR-0119(219)D & BR-0119(216)D Lowe Arch Bridge & Daves Auto Arch Bridge Roane County	Our records indicate no known occurrences of RTE species or natural trout streams at this site. Mussel surveys are required.
State Project S332-23/3-0.17 Cook Fort Bridge Monroe County	Our records indicate no known occurrences of RTE species or natural trout streams at this site. Mussel surveys are required. In addition, an Indiana bat hibernaculum s located approximately 0.5mi from the site.

TC

TC

TC



12.22-11

72

State Project CR 50 MP 7.69  
Henry Fork LWC Repair  
Roane County

Our records indicate no known occurrences of RTE species or natural trout streams at this site. Mussel surveys are required.

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