

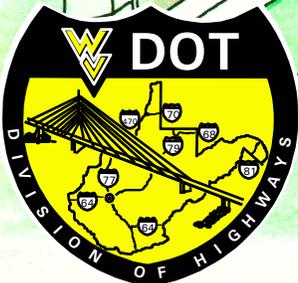
**US 340  
IMPROVEMENT  
STUDY**

Jefferson County, West Virginia  
State Project: U219-340-0.00(02)  
Federal Project: NH-0340(030)

**340**

**DRAFT ENVIRONMENTAL  
IMPACT STATEMENT**

September 2001



Federal Project NH-0340(030)  
State Project U219-340-0.00(02)

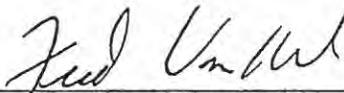
US 340 IMPROVEMENT STUDY  
Jefferson County, West Virginia

DRAFT ENVIRONMENTAL IMPACT STATEMENT  
DRAFT SECTION 4(F) EVALUATION

Submitted Pursuant to 42 USC 4332(2)(c) and 49 USC 303  
by the U.S. Department of Transportation  
Federal Highway Administration  
and  
West Virginia Department of Transportation  
Division of Highways

9/24/01

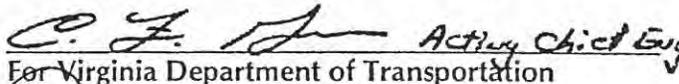
Date of Approval



For West Virginia Division of Highways

9-20-01

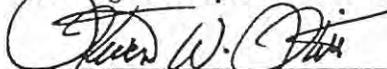
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For Virginia Department of Transportation

11/9/01

Date of Approval



For Federal Highway Administration

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This Draft Environmental Impact Study evaluates the engineering aspects and social, economic, and environmental impacts associated with Alternatives for an improved US 340 transportation corridor in Jefferson County. The Build Alternatives include improvements along US 340 and new location corridors east and west of existing US 340.

Comments on this Draft Environmental Impact Statement are due by \_\_\_\_\_  
and should be sent to:

FEB 08 2002

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## **SUMMARY**

### **A. Proposed Action**

The proposed project improves the existing two-lane section of US 340 from the existing four-lane section in Clarke County, Virginia to the existing four-lane section of the Charles Town Bypass in Jefferson County, West Virginia.

Improvements to US 340 are needed to address capacity and safety deficiencies along the existing facility. Currently, sections of US 340 operate at capacity, with an unacceptable Level of Service E, during daily peak travel periods. By the design year of 2020, the entire two-lane facility would operate over capacity during peak travel periods with a Level of Service F. Existing roadway deficiencies also create undesirable driving conditions along these sections of US 340. These deficiencies include variable shoulder widths, narrow travel lanes, limited passing zones, steep side slopes, and unprotected fixed objects such as culvert headwalls and trees.

The proposed facility is approximately 4.5 miles (7.2 kilometers) in length and would be a four-lane divided highway. The facility is designed in accordance with the American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets. Design elements include a 60 mile per hour (102 kilometer per hour) design speed with a 40-foot (12.2-meter) depressed median throughout the length of the project.

### **B. Other Transportation Actions**

Other related transportation actions in the vicinity of the project include:

- WV 9 (Martinsburg to Baker Heights) widen to four lanes.
- WV 9 (Martinsburg to Charles Town Bypass) widen to four lanes.
- WV 9 (Charles Town Bypass to the Virginia State line) widen to four lanes.
- US 522 (West Virginia/Virginia State line to the West Virginia/Maryland State line) widening to four lanes with a bypass of Berkeley Springs.

## **C. Alternatives Considered**

Four broad alternatives were established for consideration to address the capacity and safety issues along US 340. These alternatives include the Transportation Systems Management (TSM) Alternative, the Mass Transit Alternative, the No-Build Alternative, and the Build Alternative. The Transportation Systems Management and Mass Transit Alternatives would not meet the needs of the project and were eliminated from further consideration. The No-Build Alternative also would not meet the needs of the project but has been retained for comparison purposes.

Under the Build Alternative, eight build alternates were developed for study and analysis. The typical section of each alternate includes four travel lanes divided by a 40-foot (12.2-meter) depressed median. Through evaluation and analysis two of the eight build alternates were eliminated from further consideration during the preliminary review process. Alternate 2 was eliminated because of right of way damages through the community of Rippon, insufficient access control, and maintenance of traffic difficulties during construction. Alternate 7 was eliminated because of poor alignment and extensive construction limits at the intersection with Jefferson County 19. A detailed analysis was prepared for the remaining six alternates. These six alternates require between 107 and 132 acres (43.3 to 53.4 hectares) of right of way. These six alternates have an estimated construction cost between \$21,212,000 and \$35,407,000. Exhibit S-1 shows the alternate locations and the impacted resources.

## **D. Environmental Impacts**

Details of the specific impacts associated with the six build alternates and the No-Build Alternative are included in Section IV. Table S-1 contains a comparative summary of the quantifiable impacts of the No-Build and Build Alternatives.

According to the Jefferson County Comprehensive Plan, lack of road improvements has been a restraint on the economic growth of Jefferson County. Improvements to roadways, such as US 340, could advance the economic development of the county. Because of its geographic location, Jefferson County

**TABLE S-1  
COMPARATIVE SUMMARY**

Category	Units	No-Build	Build Alternate <sup>1</sup>					
			1	3	4	5	6	8
Roadway Length	miles (kilometers)	0	4.5 (7.2)	4.5 (7.2)	4.5 (7.2)	4.6 (7.3)	4.5 (7.2)	5.0 (8.0)
Residential Relocations	total	0	7	6	2	1	6	6
	minority	0	0	0	0	0	0	0
Business Relocations	total	0	5	5	4	2	4	2
	minority	0	0	0	0	0	0	0
Non-Profit Relocations	total	0	0	0	0	0	0	0
Right of Way	parcels	0	33	34	29	21	19	21
Right of Way	acres (hectares)	0 (0)	112 (45.3)	107 (43.3)	108 (43.7)	112 (45.3)	115 (46.6)	132 (53.0)
Potential Hazardous Material Sites	each	0	4	4	3	2	2	2
Historic Architectural Resources	sites	0	4	5	5	6	4	2
	acres (hectares)	0	81.4 (33.0)	55.4 (22.4)	94.9 (38.4)	121.0 (49.0)	50.4 (20.4)	6.1 (2.5)
Archaeological Resources	sites	0	1	0	0	0	1	0
Public Recreation Areas	sites	0	0	0	0	0	0	0
Wetlands	acres (hectares)	0 (0)	1.1 (0.5)	1.7 (0.7)	2.0 (0.8)	2.0 (0.8)	0.7 (0.3)	0 (0)
Floodplains	acres (hectares)	0 (0)	7.6 (3.1)	5.5 (2.2)	5.3 (2.2)	5.4 (2.2)	7.7 (3.1)	9.1 (3.7)
Streams	number	2	2	2	2	2	2	2
	feet (meters)	0 (0)	985 (301)	1010 (308)	1120 (341)	1090 (332)	870 (265)	625 (190)
Farmland Soil Types <sup>2</sup>	acres (hectares)	0 (0)	72.4 (29.3)	79.2 (32.1)	82.3 (33.3)	91.3 (37.0)	51.5 (20.9)	120 (48.2)
Noise Without Sound Barriers	impacted properties	4	5	5	4	3	10	11
Air Quality 1-Hour <sup>3</sup>	carbon monoxide (ppm) <sup>3</sup>	4.2	2.3	2.3	2.3	2.3	2.3	2.3
Air Quality 8-Hour <sup>3</sup>	carbon monoxide (ppm) <sup>3</sup>	2.6	1.4	1.4	1.4	1.4	1.4	1.4
Right of Way & Utility Cost	dollars	0	3,500,000	3,800,000	3,100,000	2,475,000	2,775,000	3,800,000
Construction Cost	dollars	0	21,954,000	21,418,000	21,212,000	21,678,000	24,249,000	35,407,000
Total Cost	dollars	0	25,454,000	25,218,000	24,312,000	24,153,000	27,024,000	39,207,000

<sup>1</sup> Alternates 2 and 7 were eliminated from consideration during the preliminary evaluation and Alternates 1, 3, 4, and 5 were eliminated after detailed study. Alternates 6 and 8 are the Build Alternates remaining.

<sup>2</sup> Soil types designated by the U.S. Department of Agriculture, Natural Resources Conservation Service as “Prime and Unique Farmland” or “Statewide or Locally Important Farmland.”

<sup>3</sup> National Ambient Air Quality Standards: 35 ppm (1-hour) and 9 ppm (8-hour) for carbon monoxide (ppm = parts per million).

has the potential to become a point of distribution for several metropolitan areas located within a 300-mile radius. Better access via interstate highways and other four-lane roadway facilities would make Jefferson County even more attractive to prospective businesses and industries. Improving US 340 could provide opportunities for industrial development to occur, thereby providing economic gain for the county.

The Comprehensive Plan of Jefferson County recognizes that increased travel and tourism throughout the county have resulted in substantial sources of income. History, culture, and the rural nature of the county attract residents from the nearby metropolitan areas. Major attractions within the county include the Charles Town Races, Harper's Ferry National Historical Park, Jefferson County Mountain Heritage Arts and Crafts Festival, the National Fisheries Center, Summit Point Raceway, and other recreational activities such as hiking and whitewater rafting. All of these activities can be accessed via US 340 and the connecting roadways. As a result of improving US 340 and providing better access to these facilities, tourism could become even more important to the local economy.

Impacts associated with the six build alternates include relocating one to seven residences and two to five businesses. Noise impacts effect between three and ten residential properties. Farmland impacts are between 51.5 acres (20.9 hectares) and 120.0 acres (48.7 hectares). Wetland impacts within the conceptual right of way range from zero to 2.0 acres (0.8 hectares). Between 5.3 acres (2.2 hectares) and 9.1 acres (3.7 hectares) of floodplains are crossed by the alternates under consideration. All six build alternates impact Section 4(f) properties which are on or eligible for the National Register of Historic Places. Between one and four hazardous material sites are located within or near the alternates. The estimated right of way and construction costs vary from \$24,153,000 for Alternate 5 to \$39,207,000 for Alternate 8.

Impacts to biotic resources including natural communities and wildlife by any of the alternates are minimal due to the historical conversion of the majority of the area to agricultural uses. Physical resources within the project area include three streams, three springs, three ponds, one floodplain, and soils which are associated

with Prime, Unique, and Statewide important farmlands. The three streams are Bullsken Run and two unnamed tributaries of Long Marsh Run. The springs include Lippett spring, Henry Baker Farm spring, and Joseph Bell Farm spring. Two of the three ponds are located along Jefferson County 21 (Meyerstown Road). The third pond is located east of the railroad, south of Access Road. The single floodplain impacted is associated with Bullsken Run. Additional topics of concern include wetlands and protected species. The streams in the project vicinity have associated wetland systems. Two of the three will be affected by five of the six build alternates. There are no known occurrences of federally protected species within the project area, including the federally endangered Indiana bat.

## **E. Build Alternates Eliminated**

Following the detailed analysis of the build alternates, Alternates 1, 3, 4, and 5 were eliminated from consideration because these alternates had greater impacts to the historic resources in the project area. These alternates would impact more property from the historic resources in the project area than Alternates 6 or 8. A total of between 55.4 acres (22.4 hectares) to 121.0 acres (49.0 hectares) of property from four to five historic architectural resources would be impacted by Alternates 1, 3, 4, and 5 in comparison to 6.1 acres (2.5 hectares) or 50.4 acres (20.4 hectares) impacted by either Alternate 8 or Alternate 6, respectfully.

## **F. Build Alternates Remaining**

Alternates 6 and 8 are the remaining build alternates selected for possible implementation for the project. The selection of a Preferred Alternative will be made after comments are received from the Draft Environmental Impact Statement review and the Public Hearing.

## **G. Areas of Controversy**

Coordination with various governmental agencies, property owners, and local groups identified impacts to historical properties as an area of controversy. As shown on Exhibit S-1, there are numerous historic resources in the project area. These resources include the Long Marsh Run Rural Historic District, Ripon Lodge, and the William Grubb Farm, which are listed on the National Register of Historic

Places. In addition, two historic districts and six individual properties are eligible for listing on the National Register. These include Kabletown Rural Historic District, Village of Rippon Historic District, Balclutha, Olive Boy Farm, Glenwood, Wayside Farm, Byrdland and Straithmore.

In addition to being individually eligible for the National Register, the Village of Rippon and the remaining properties listed above, excluding Balclutha, are contributing elements to the Kabletown Rural Historic District. The Kabletown Rural Historic District encompasses approximately 18 square miles (4,500 hectares). This area surrounds and includes over half of the project study area. The boundaries for this district are shown on Exhibit S-2.

## **H. Other Government Actions Required**

A Section 404 Dredge and Fill Permit will be required from the U.S. Army Corps of Engineers for construction of the proposed facility. A Section 401 Water Quality Certification permit and National Pollutant Discharge Elimination System (NPDES) permit will be required from the West Virginia Department of Environment and Natural Resources (DENR).

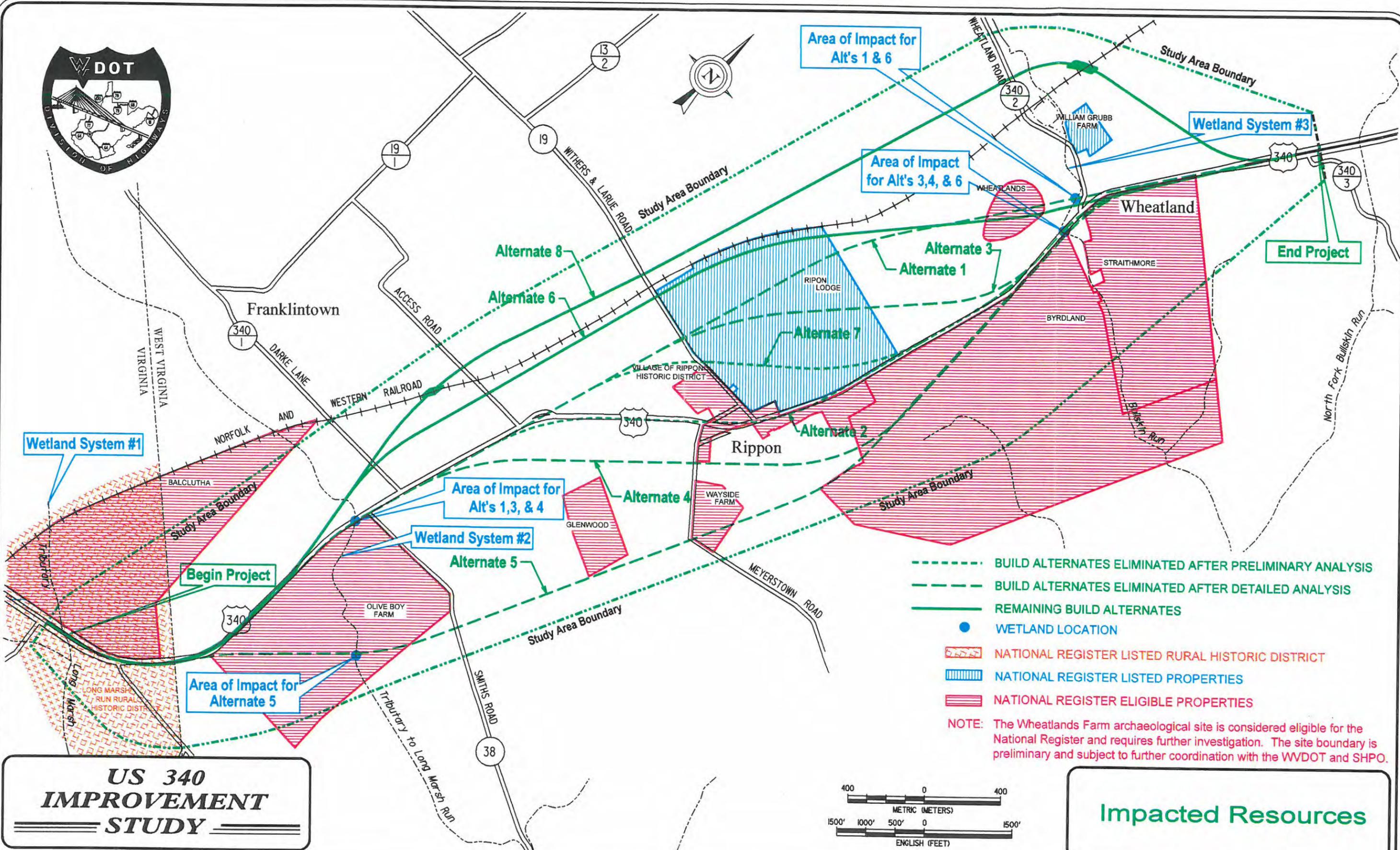
If a historic property or district included on or eligible for the National Register of Historic Places is adversely effected by the selected Preferred Alternative, the Advisory Council on Historic Preservation may become a consulting party for the project in accordance with Section 106 of the Historic Preservation Act. Measures to mitigate the adverse effects will be identified and set forth in a Memorandum of Agreement (MOA). This MOA will be signed by the State Historic Preservation Office, the Federal Highway Administration, the West Virginia Department of Transportation, other invited signatories, and, if participating, the Advisory Council on Historic Preservation.

## **I. Environmental Commitments**

The West Virginia Department of Transportation will make every effort to minimize impacts on the natural environment. Impact minimization will be

accomplished by adhering to strict guidelines and specifications adopted by the State of West Virginia.

1. Wetland avoidance is considered during all phases of the project. If wetlands cannot be avoided, every effort will be made to minimize the impacts through the location and design of the roadway facility within the selected corridor. Mitigation of unavoidable wetland impacts will be coordinated through the appropriate state and federal agencies.
2. Sound barriers will be investigated in more detail after a Preferred Alternative is selected and during the design of the project.
3. For floodway encroachments, the West Virginia Department of Transportation will coordinate with the community and with the Federal Emergency Management Agency during the design phase of the project.
4. When the proposed centerline is established and the right of way limits determined, a hazardous materials site assessment will be performed to the degree necessary to determine levels of contamination at any potential hazardous materials sites along the Preferred Alternative. The assessment will be made prior to right of way acquisition. Resolution of problems associated with contamination will be coordinated with appropriate agencies.
5. Measures to minimize visual impacts will be taken into consideration during design of the roadway. Overall, visual impacts may be mitigated through a variety of actions such as alignment modifications during design, landscaping, screening, embankments, and selective clearing of natural materials.
6. If a build alternate is selected as the Preferred Alternative, a detailed archaeological survey of the Preferred Alternative will be conducted. This survey will be coordinated with the State Historic Preservation Office. A programmatic agreement will be established for archaeological surveys on the project.



Wetland System #1

Area of Impact for Alt's 1 & 6

Area of Impact for Alt's 3,4, & 6

Wetland System #3

End Project

Begin Project

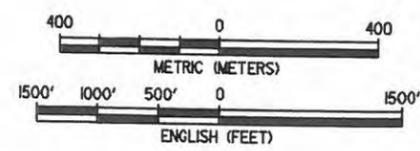
Area of Impact for Alt's 1,3, & 4

Wetland System #2

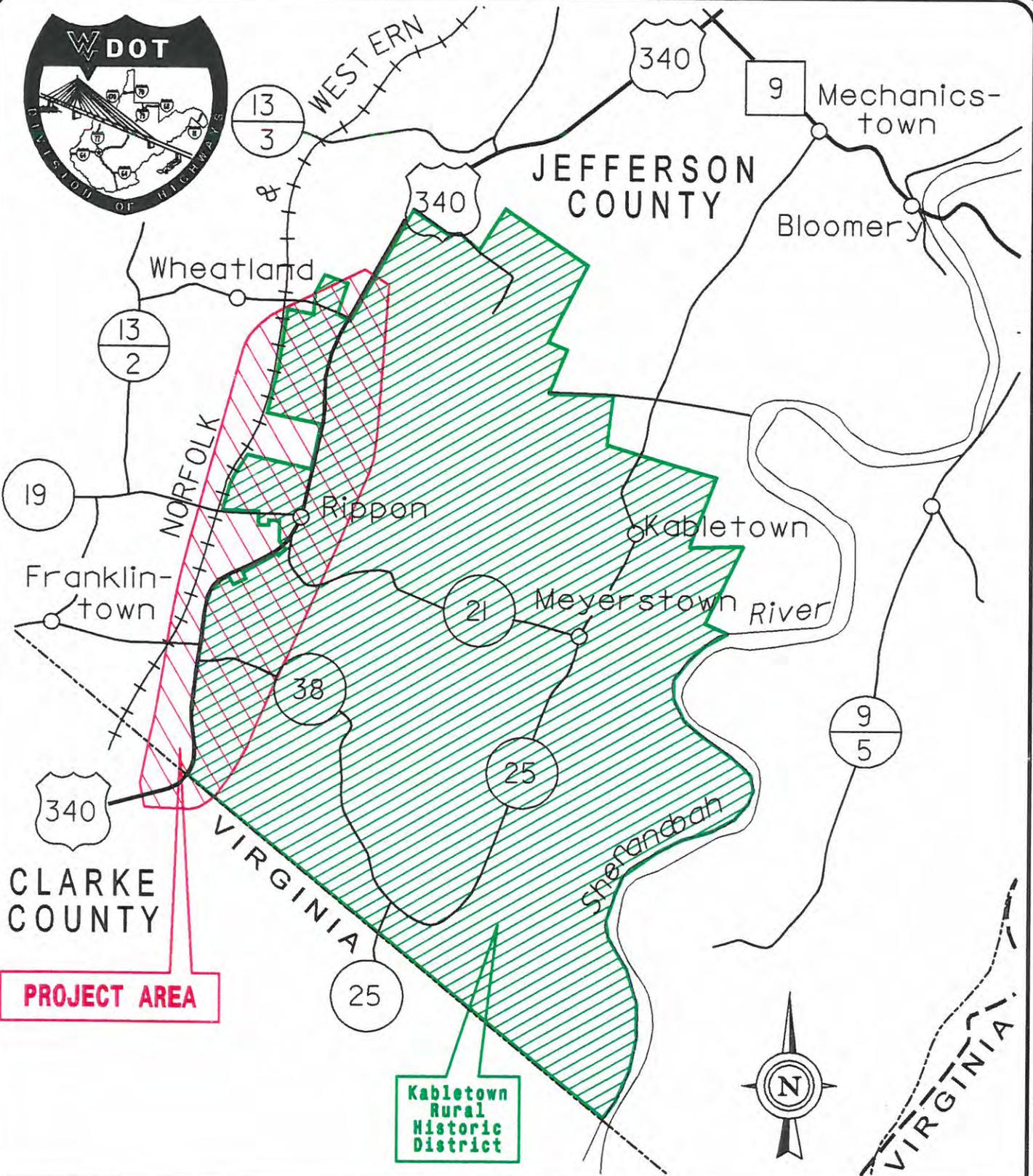
Area of Impact for Alternate 5

- BUILD ALTERNATES ELIMINATED AFTER PRELIMINARY ANALYSIS
  - BUILD ALTERNATES ELIMINATED AFTER DETAILED ANALYSIS
  - REMAINING BUILD ALTERNATES
  - WETLAND LOCATION
  - ▨ NATIONAL REGISTER LISTED RURAL HISTORIC DISTRICT
  - ▨ NATIONAL REGISTER LISTED PROPERTIES
  - ▨ NATIONAL REGISTER ELIGIBLE PROPERTIES
- NOTE: The Wheatlands Farm archaeological site is considered eligible for the National Register and requires further investigation. The site boundary is preliminary and subject to further coordination with the WVDOT and SHPO.

**US 340  
IMPROVEMENT  
STUDY**



**Impacted Resources**



**PROJECT AREA**

**Kabletown Rural Historic District**



**VIRGINIA**

**US 340  
IMPROVEMENT  
STUDY**

**Kabletown Rural  
Historic District  
Boundaries**

**Exhibit S-2**

## **I. PROJECT PURPOSE AND NEED**

The West Virginia Department of Transportation, in conjunction with the Federal Highway Administration, is proposing to improve US 340 from the four-lane section in Clarke County, Virginia to the existing four-lane section of the Charles Town Bypass, approximately 2.0 miles (3.2 kilometers) north of the community of Rippon in Jefferson County, West Virginia. The total project length is approximately 4.5 miles (7.2 kilometers). Exhibit I-1 shows the location of the proposed project and the limits of the improvement study.

The existing facility within the project area is a two-lane rural arterial highway with numerous access points from both residential and commercial properties. The adjoining segments of US 340 north and south of the project area are four-lane divided highways. Roadway deficiencies, such as limited sight distance, narrow travel lane and shoulder widths, steep side slopes, and unprotected fixed objects, can make driving the existing two-lane section of US 340 hazardous. The proposed project is needed to improve traffic operations, increase capacity, eliminate deficiencies, and improve safety.

The project area is composed of gentle to low-lying hills and ridges. Two tributaries to Long Marsh Run and Bullskin Creek are crossed by the existing roadway. Open fields, row crops, orchards, and livestock grazing areas border US 340 within the project study area. Exhibit I-2 shows the project study area and the general study area boundary.

The area is rural with sporadic development concentrated around the communities of Rippon and Wheatland. Development consists mainly of residential properties and farm complexes. Commercial properties consisting of a few restaurants and small businesses exist along the project area.

Approaching the project area from the south in Virginia, US 340 is a four-lane divided facility. Approximately 0.5 miles (0.8 kilometers) south of the West Virginia State line, the four-lane roadway transitions to a two-lane facility. Continuing north on US 340, travelers pass the Rainbow Road Club, a seasonal produce stand, John's Family Restaurant, Chapman's Trailer Park, and B & G Painting. Along

US 340 in the community of Rippon are private residences, a church, old storage buildings, the Rippon Grocery, an antique store, the Rippon Post Office, St. John's Episcopal Church, and the entrance to the historic Ripon Lodge. Development immediately north of Rippon is sparse and consists of single family homes and farms. As US 340 continues north, it passes through the community of Wheatland where Dave's Auto Service, the Rainbow Diner Truck Stop, Thomas B. Kern, Inc., the Peace Plantation Animal Sanctuary, and a seasonal produce stand are located adjacent to the road. Leaving the project area, two-lane US 340 transitions back to a four-lane facility and continues north through Jefferson County.

## **A. Project Status**

The West Virginia Department of Transportation has recognized the potential need for improvements to the two-lane portion of US 340 in southern Jefferson County. As a result, it has initiated the US 340 Improvement Study. The Department of Transportation began coordination with state and federal agencies in order to investigate and evaluate all planning issues, environmental constraints, and areas of special concern.

Upon reviewing comments received from agencies contacted during the Scoping process, a Purpose and Need Report was prepared in October 1996 illustrating the need to improve the two-lane section of US 340 from 0.5 miles south of the Virginia/West Virginia state to the existing four-lane section just south of the Charles Town Bypass. Traffic operational and safety factors were taken into consideration and then presented for review and comment. A complete listing of agencies receiving the Purpose and Need Report is contained in Section VIII of this document. The West Virginia Division of Environmental Protection concurred with the project purpose and need on October 22, 1996. On November 7, 1996, the Corps of Engineers concurred with the purpose and need for improvements to US 340 in the study area. Concurrence was received on November 21, 1996, from the West Virginia Division of Culture and History. The United States Division of Environmental Protection Agency concurred with the purpose and need on January 23, 1997. All other agencies chose not to respond. Concurrence is assumed for these agencies.

## **B. System Linkage**

US 340 is a north-south facility that connects the panhandle of West Virginia to Maryland and Virginia. Traveling north on US 340 from the study area leads to Frederick, Maryland and I-70, a major east-west freeway facility. Continuing east, I-70 connects to Baltimore, Maryland. To the south of the study area, US 340 connects to VA Route 7, US 17, US 50, US 522, and I-66 in Virginia. Traveling west on these facilities leads to I-81, one of the principal north-south freeway facilities in the eastern United States. Traveling these facilities to the east leads to I-95, another principal north-south freeway facility, and the Washington DC/Northern Virginia metropolitan area. Traffic from the Baltimore area destined for I-81 in Virginia can use I-70, US 340, and VA Route 7 to avoid congestion in and around the Washington DC area. Exhibit I-3 illustrates the relationship of US 340 to the regional transportation network.

Within Jefferson County, US 340 is the major north-south facility. North of the project area and east of Charles Town, US 340 connects to WV 51, an east-west facility. From US 340, WV 51 extends to the west through Charles Town and into Berkeley County where it connects to I-81. US 340 also connects to WV 9 east of Charles Town. WV 9 is another north-south facility in Jefferson County. North of its intersection with US 340, WV 9 extends to Martinsburg and I-81 in Berkeley County. To the south of US 340, WV 9 extends across the Shenandoah River, into Virginia, and ties to VA Route 7 near Leesburg. US 340 northeast of Charles Town leads to Harpers Ferry and continues into Virginia and Maryland. Exhibit I-4 illustrates the relationship of US 340 to the transportation network of Jefferson County.

The approximate 4.5 miles (7.2 kilometers) of two-lane US 340 creates a gap between the existing four-lane sections of US 340 north and south of the project area. This missing link disrupts the continuity of the roadway in this area, causing drivers to adapt and make adjustments transitioning from a four-lane road to a two-lane road. This discontinuity affects system linkage along US 340 between Virginia and West Virginia.

## **C. Capacity and Transportation Demand**

Capacity is defined as the maximum number of vehicles capable of traveling along a section of roadway during the peak travel period based on physical and operational conditions relative to the road. When traffic volumes approach or exceed the capacity of the roadway, operating levels of service (LOS) are diminished and congestion results. Simply defined, level of service is a qualitative measure that describes operational conditions of a traffic stream along a roadway or at an intersection of two roadways. Six levels of service are defined from A to F, with Level of Service A the best and Level of Service F being the worst. Exhibit I-5 describes the characteristics of the traffic stream for each Level of Service. The West Virginia Division of Highways has established the minimum desirable level of service for US 340 during peak periods to be LOS D.

The existing average daily traffic volumes vary throughout the project area. The average daily traffic ranges from 6,700 vehicles per day (vpd) in the southern portion of the project area to 7,600 vpd in the northern portion of the study area. Truck traffic accounts for 10 percent of the total traffic along US 340. The predicted average daily traffic for design year 2020 ranges from 17,500 vpd to 19,100 vpd. Existing and year 2020 average daily traffic volumes are shown in Exhibit I-6.

A traffic analysis was completed to evaluate the existing traffic conditions in the year 1995 as well as no-build conditions in the design year 2020. The traffic evaluation consisted of two-lane highway analysis and unsignalized intersection analysis as described in the *Highway Capacity Manual, Special Report 209 (Third Edition Updated 1994)*.

Existing operating conditions on two-lane US 340 range from LOS D to an undesirable LOS E. This undesirable level of service is a result of total traffic volumes, narrow travel lanes, limited passing zones, and a high percentage of trucks.

Without improvements to US 340, motorists will have to contend with undesirable travel conditions during peak travel periods throughout the entire

project area by the year 2020. Under the no-build condition, vehicles encounter undesirable LOS F travel conditions in all sections of the two-lane US 340. Levels of service for existing and year 2020 conditions along the two-lane highway are shown in Exhibit I-6.

Unsignalized intersections in the project area currently operate at LOS B or better. In the year 2020 without improvements to US 340, the unsignalized intersections operate in the range of Level of Service C to F. Undesirable levels of service occur at the following unsignalized intersections:

- Jefferson County 340/1 - Level of Service E
- Access Road - Level of Service E
- Jefferson County 19 - Level of Service F
- Jefferson County 340/2 - Level of Service F

Improvements to US 340 will alleviate the undesirable traffic operations that currently exist and occur in the future.

#### **D. Social Demands and Economic Development**

Current land use and zoning in the project area encompasses agriculture, residential, and sparse commercial and industrial districts. Outside of the immediate project area, land use bordering US 340 in Jefferson County includes incorporated towns, such as Charles Town, industrial-commercial districts, and residential growth districts. Exhibit I-7 shows the existing and future land use for the project area.

According to the Jefferson County Comprehensive Plan, lack of road improvements has been a restraint on the economic growth of Jefferson County. Improvements to roadways, such as US 340, could advance the economic development of the county. Because of its geographic location, Jefferson County has the potential to become a point of distribution for several metropolitan areas located within a 300-mile radius. Better access via interstate highways and other four-lane roadway facilities make Jefferson County even more attractive to

prospective businesses and industries. Improving US 340 could provide opportunities for industrial development to occur, thereby providing economic gain for the county.

The Comprehensive Plan of Jefferson County recognizes that increased travel and tourism throughout the county have resulted in substantial sources of income. History, culture, and the rural nature of the county attract residents from the nearby metropolitan areas. Major attractions within the county include the Charles Town Races, Harpers Ferry National Historical Park, Jefferson County Mountain Heritage Arts and Crafts Festival, the National Fisheries Center, Summit Point Raceway, and other recreational activities such as hiking and whitewater rafting. All of these activities can be accessed via US 340 and connecting roadways. As a result of improving US 340 and providing better access to these facilities, tourism could become even more important to the local economy. Exhibit I-8 illustrates the major attractions within Jefferson County.

## **E. Modal Inter-Relationships**

The Norfolk and Western Railroad and the CSX Transportation System provide rail access through the county. The Norfolk and Western Railroad is oriented north-south through Jefferson County and is located along the western edge of the project study area. To the north, the railroad connects to Hagerstown, Maryland. To the south, this railroad extends to Front Royal, Virginia where it connects to the Virginia Inland Port. The CSX Transportation System has railroad facilities that extend from Harpers Ferry west through the county. The more southern route extends from Harpers Ferry southwest to Winchester, Virginia. The more northern route extends from Harpers Ferry to Martinsburg. Exhibit I-8 shows the location of these railroads.

The Virginia Inland Port is located in Warren County, Virginia along US 522. This facility provides truck to rail transfer for the Norfolk and Western Railroad and the CSX Transportation System. The port is accessible to trucks traveling via US 340 by VA Route 7 west to I-81 south.

Air transportation in Jefferson County is provided by the Eastern West Virginia Regional Airport located in Martinsburg along WV 9, approximately 15 miles (24 kilometers) west of Charles Town. The airport's primary business is charter flights. The most frequently flown charter flight is to Charleston, West Virginia. The nearest large scale airport is Dulles International. It is located in northern Virginia approximately 50 miles (80 kilometers) to the east of the study area. Air cargo service, domestic commercial service, and international air travel is available at this airport.

Commuter bus and rail services are part of the transportation network of Jefferson County. Public bus service is provided by the Eastern Panhandle Transit Authority (PanTran). PanTran serves the Martinsburg area and various areas throughout Berkeley and Jefferson Counties, utilizing US 340 north of the project area. Regular stops include Charles Town, Harpers Ferry, and Shepherdstown. In addition to regular stops, PanTran makes stops off the regular route if it has been requested in advance by a rider. Commuter rail service is provided from Martinsburg to Washington, DC with stops at Duffields and Harpers Ferry by the Maryland Area Rail Commute (MARC). This program is supported by the Maryland Department of Transportation.

## **F. Roadway Deficiencies**

The existing two-lane section of US 340 in West Virginia has an average travel lane width of approximately 10.5 feet (3.2 meters), which is below the standard desirable lane width of 12 feet (3.6 meters). Shoulder widths vary and are generally narrow along the roadway. The average usable shoulder width is approximately 5.5 feet (1.7 meters). The shoulder consists of 2.5 feet (0.8 meters) of pavement and 3 feet (0.9 meters) of gravel. Beyond the roadway shoulder many side slopes are steep and not protected with guardrail. This provides little recovery area for vehicles leaving the roadway. Passing zones throughout the total project area are limited, consisting of approximately 81 percent no-passing zones northbound and 77 percent no-passing zones southbound.

Additional roadway deficiencies include limited sight distances, uncontrolled access to commercial and residential areas, steep side slopes, and unprotected

fixed objects. Examples of these deficiencies are discussed below as traversed from south to north:

- The intersection of US 340 and VA 612 has limited sight distance to the north due to the undesirable skew of intersecting roadways. In addition, the intersection is located within a curve on US 340.
- The Rainbow Road Club, located on US 340, has two entrance/exit locations into the club's parking lot. The southernmost entrance is located within a blind curve (approximately six degrees, radius equal to 955 feet or 291 meters) and has limited sight distance to the south. The northernmost parking lot entrance to US 340 has poor visibility due to a crest in the roadway approximately 400 feet (120 meters) to the north. At this location, the travel lanes along US 340 are approximately 10.5 feet (3.2 meters) wide.
- A 4-foot (1.2-meter) diameter concrete culvert with a protective headwall directs a tributary of Long Marsh Run under US 340. The side slopes from the shoulder of US 340 down to Long Marsh Run are steep and are without the protection of guardrails.
- The intersection of US 340 with Jefferson County 38 (Smith Road) has limited sight distance. On Jefferson County 38 at the approach to the intersection, a blind horizontal curve on US 340 limits sight distance to the south while a crest on US 340 approximately 650 feet (200 meters) away limits sight distance to the north. An unprotected inlet with a drop-off of approximately 3 feet (1.0 meter) is located in the northeast corner of the intersection and is a potential concern to vehicles on Jefferson County 38 turning right (northbound) onto US 340.
- The entrance and exit to John's Family Restaurant extends along US 340 for approximately 400 feet (120 meters). Access to the roadway from the northernmost portion of the John's Family Restaurant parking area is deficient because of limited sight distance to the north resulting from a crest on US 340 approximately 300 feet (90 meters) to the north.
- Passing zones exist along US 340 just north of Jefferson County 340/1 (Dark Lane Road). The northbound passing zone is approximately 750 feet (230 meters) long while the southbound passing zone is approximately 850 feet (260 meters) long. The northbound and southbound passing zones are relatively short in the project area. Minimum passing sight distances recommended by AASHTO are 1,500 feet (460 meters) for a 40 mph (65 kph) design speed, 1,800 feet (550 meters) for a 50 mph (80 kph) design speed, and 2,100 feet (640 meters) for a 60 mph (95 kph) design speed.

- At the intersection of US 340 and Jefferson County 19 (Withers Larue Road), there is limited sight distance to the north because of buildings and a stone retaining wall along US 340. The travel lanes along US 340 are approximately 12 feet (3.6 meters) in width at this location. However, the close proximity of the stone wall and buildings to US 340 provide a constricted travel corridor for all motorists. The stone wall to wall clearance is approximately 44.5 feet (14 meters). Much of the curb face in Rippon has deteriorated.
- In Rippon, the speed limit is 40 miles per hour (65 kilometers per hour). The effect of the speed limit reduction on motorists is questionable. Vehicle speed seems higher than the posted limit for the area, especially the southbound approach to Rippon.
- The Rippon Post Office is located on the east side of US 340, north of the intersection of US 340 and Jefferson County 19. Travel lane width on US 340 in front of the post office is approximately 10 feet (3 meters). The paved portion of the shoulder is approximately 3 feet (1.0 meter) wide at this location.
- Unprotected pipe culvert headwalls are a common occurrence north of Rippon along the roadway. In particular, an unprotected headwall is located approximately 1600 feet (490 meters) south of Bullskin Creek on the northbound side of the road. The headwall is located just above ground level and approximately 6.5 feet (2 meters) away from the edge of the travel lane. Another location for headwalls occurs along US 340 at the Bullskin Creek crossing. These headwalls are close to the roadway and represent an unprotected hazard for motorists.
- At the intersection of US 340 and Jefferson County 340/2 (Wheatland Road), sight distance is limited to the north due to the sharp roadway curvature at the Rainbow Diner. This curve is also in the vicinity a steep vertical grade.
- Roadway geometry at the Rainbow Diner creates limited sight distance. This combined with unlimited access to the diner's parking area along the curve creates an undesirable situation. Northbound tractor trailers turning left into the diner's parking area, cut in front of southbound motorists in the middle of the curve. Additionally, trucks pulling out of the parking lot and heading northbound are not visible to northbound motorists until they are well through the curve.

## **G. Safety**

Roadway deficiencies combined with uncontrollable factors, such as inclement weather conditions and animals crossing the road, can make for undesirable travel along existing US 340 within the project area. A review of

accident data for this section of US 340 from the Fall of 1992 to the Fall of 1995 revealed that 52 accidents occurred from south of the state line between Virginia and West Virginia to the existing four-lane section of the Charles Town Bypass. The type of accidents occurring along the roadway consisted of access conflicts, collisions with other vehicles, hitting fixed objects off the roadway, hitting animals, side swipes, and vehicles that ran off the road. The majority of accidents were collisions involving hitting fixed objects off the road, followed closely by accidents caused by hitting animals. The chart presented in Exhibit I-9 displays the percentage of accident types.

Surface conditions affect the ability of a driver to keep a vehicle under control. If there are inadequate shoulders and narrow travel lanes, such as along the existing two-lane section of US 340, a driver has little room to recover from mishaps related to inclement weather. Twenty-four of the 52 accidents occurred when surface conditions were affected by poor weather, such as rain, snow, or ice. Fifteen of those accidents involved injuries.

### **1. Accident Rates**

By taking the number of accidents per segment of roadway and converting the actual number to an accident rate, the roadway can be compared to other regional and statewide averages. The most common accident rate is defined as the number of accidents on a section of highway per 100 million vehicle miles (ACC/HMVM) of travel. The formula used to determine the accident rate is as follows:

$$\text{ACC/HMVM} = ((N(100,000,000))/(T)(L)(A))$$

Where: N = number of accidents in the time period

T = time period in days

L = one-way length of roadway in miles

A = average daily traffic in the time period

The injury accident and fatal accident rates can also be determined by using the accident rate above and substituting the total number of injury accidents or the total number of fatal accidents for the total number of accidents (N).

In order to identify areas of concern, the project area was separated into eight segments, labeled A through H. These segments were determined by intersection locations along US 340. By separating the roadway into segments and calculating separate rates for each segment, the degree of hazard for each section can be determined. Exhibit I-10 shows the segments used in this analysis, as well as, the locations and types of each accident within each segment. Table I-1 shows the accident rate, injury rate, and fatality rate for each segment, the total project area, the local area, and the state.

**TABLE I-1  
ACCIDENT RATES**

<b>Segment</b>	<b>Segment Length (Miles)</b>	<b>Accident Rate (HMVM)</b>	<b>Injury Rate (HMVM)</b>	<b>Fatality Rate (HMVM)</b>
Segment A	0.3	145	97	N/A
Segment B	0.6	120	48	48
Segment C	0.3	144	144	N/A
Segment D	0.4	197	84	N/A
Segment E	0.4	135	68	N/A
Segment F	0.6	67	45	22
Segment G	0.7	74	18	N/A
Segment H	0.7	329	115	N/A
Total All Segments	4.0	141	63	8
*Jefferson County (all road types)	N/A	1,572	information unavailable	information unavailable
*Statewide - rural primary roads with two lanes	N/A	231	information unavailable	information unavailable

\*Source: 1994 West Virginia Crash Data

## 2. Severity Index

Severity index is representative of the relative danger of any given road, segment of road, or spot location. As the index for a location rises, the likelihood of a severe accident involving injury or death increases. This severity index (SI) is calculated using the following formula:

$$SI = (N_I + N_F) / (N_t)$$

Where:  $N_I$  = number of injury accidents

$N_F$  = number of fatal accidents

$N_t$  = number of total accidents

The severity index was calculated for each segment of the roadway that is identified in Exhibit I-10. The severity index calculated for the State of West Virginia represents the data for all traffic accidents in the state. Table I-2 shows the calculated severity index for each segment, the severity index for the total project area, and the state severity index (calculated using all crash data).

**TABLE I-2  
SEVERITY INDEX**

<b>Segment</b>	<b>Severity Index</b>
Segment A	0.67
Segment B	0.60
Segment C	1.00
Segment D	0.42
Segment E	0.50
Segment F	0.67
Segment G	0.25
Segment H	0.35
Total All Segments	0.46
Statewide Average	0.54

### **3. Safety Concerns**

Some sections of US 340 have relatively high accident rates as a result of roadway deficiencies. Overall, Segment H raises the highest concern of safety. The accident rate for Segment H exceeds the West Virginia statewide average accident rate for similar roadway facility. The majority of the accidents occurring within the proposed project area were within Segment H. Roadway geometry throughout this segment, particularly in front of the Rainbow Diner Truck Stop, results in limited sight distance of the oncoming traffic.

Another particularly high accident rate occurs along Segment D at the intersection of US 340 with an unpaved access road. The majority of these accidents involved hit animals. Open fields are located on either side of the road in this segment. Even though it is not possible to prevent wildlife from crossing the road, increased travel lane and shoulder widths provide more room for a driver to react, helping the driver potentially avoid such conflicts.

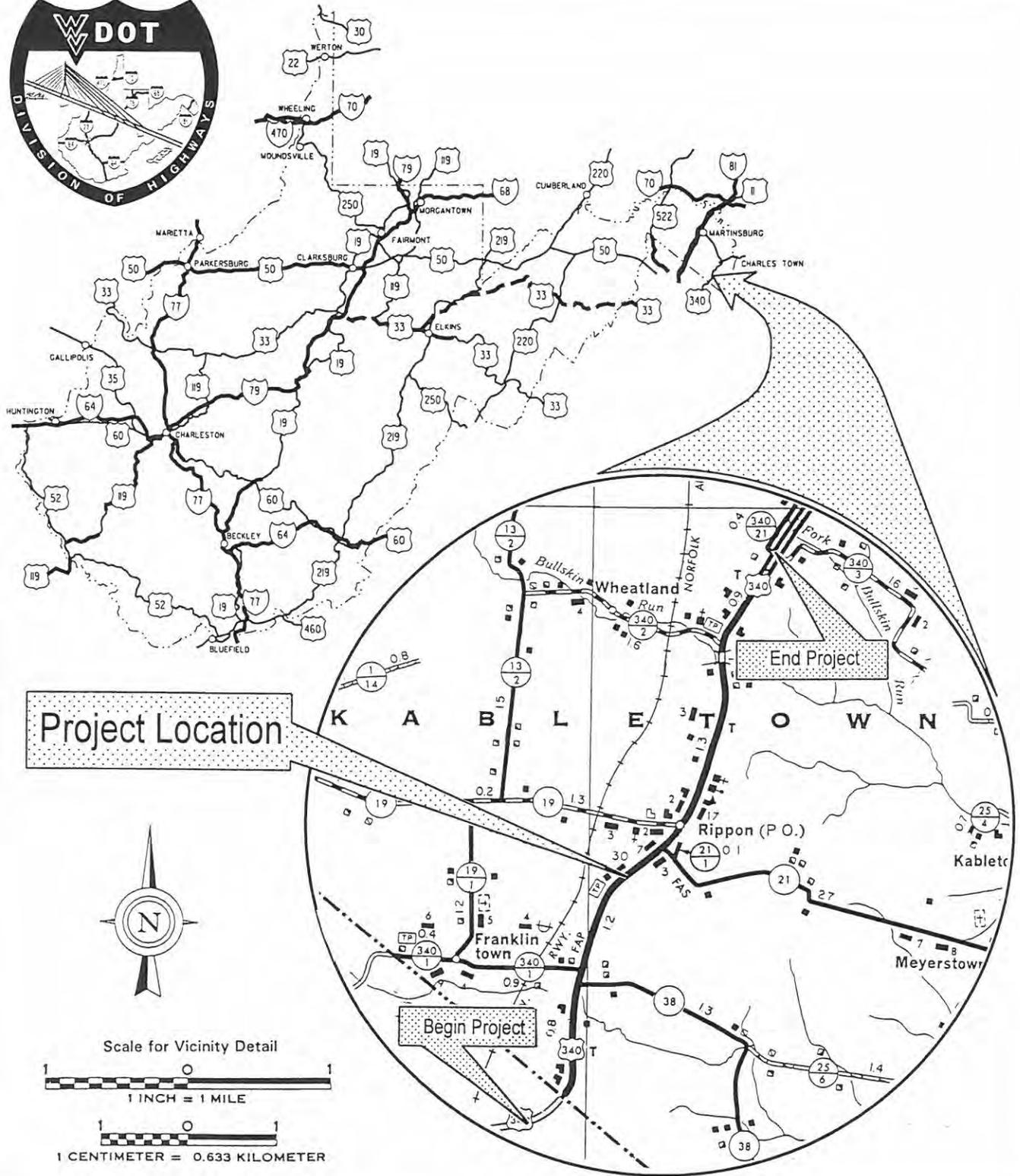
At various points along the roadway, drainage inlet areas, pipe culvert headwalls, and a variety of fixed objects are positioned close to the roadway. Also associated with many of the drainage inlet areas and pipe culvert headwalls, are steep side slopes and vertical drop-offs. The use of guardrails, in conjunction with adequate travel lane and shoulder widths, greatly improves the safety of the road.

Severity of accidents was greatest in Segments A, C, and F. Accidents in these locations tended to include injuries and fatalities more frequently than accidents in other segments. Improved roadway characteristics could help lessen the severity of accidents in these locations by removing existing roadway deficiencies.

### **H. Concurrence with Purpose and Need**

A *Purpose and Need Report* for this project is on file with the West Virginia Department of Transportation. In accordance with the procedures for the combined NEPA/Section 404 process, the US Army Corps of Engineers was provided the opportunity to review the *Purpose and Need Report* in October 1996. A complete listing of the agencies receiving the *Purpose and Need Report* is contained

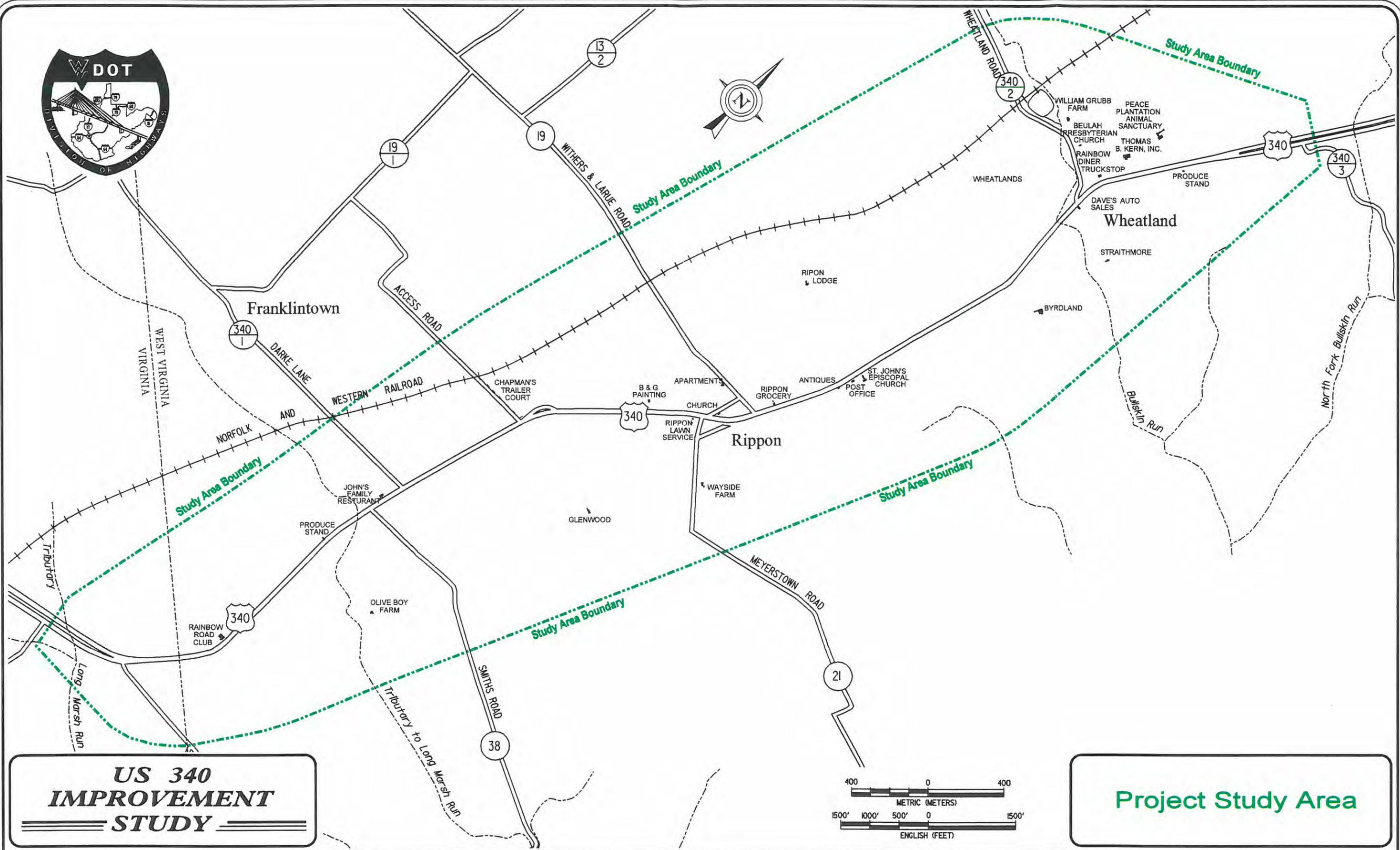
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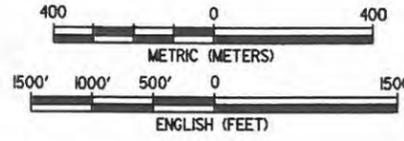
**US 340  
IMPROVEMENT  
STUDY**

Project Vicinity

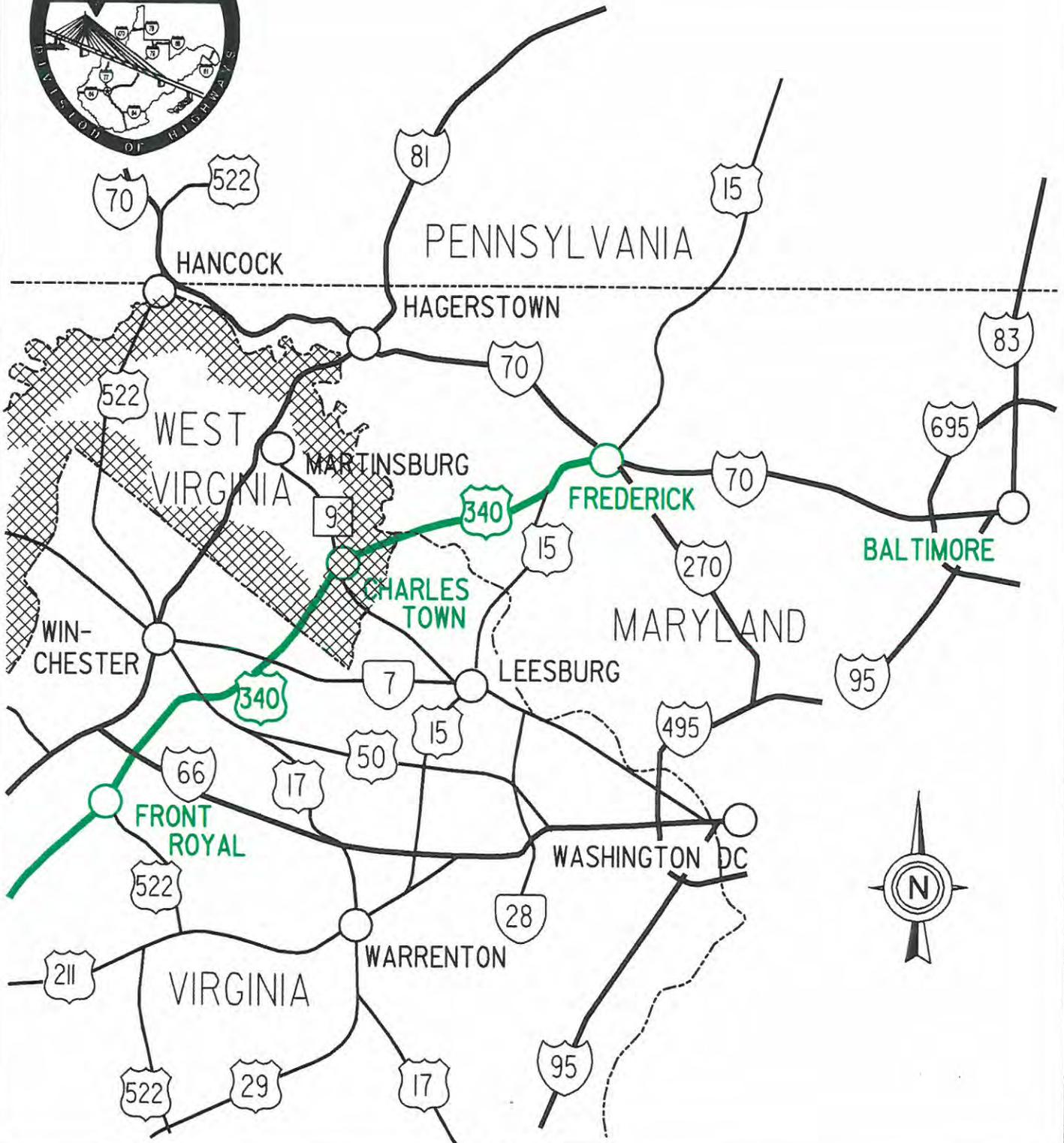
Exhibit I-1



**US 340  
IMPROVEMENT  
STUDY**



**Project Study Area**



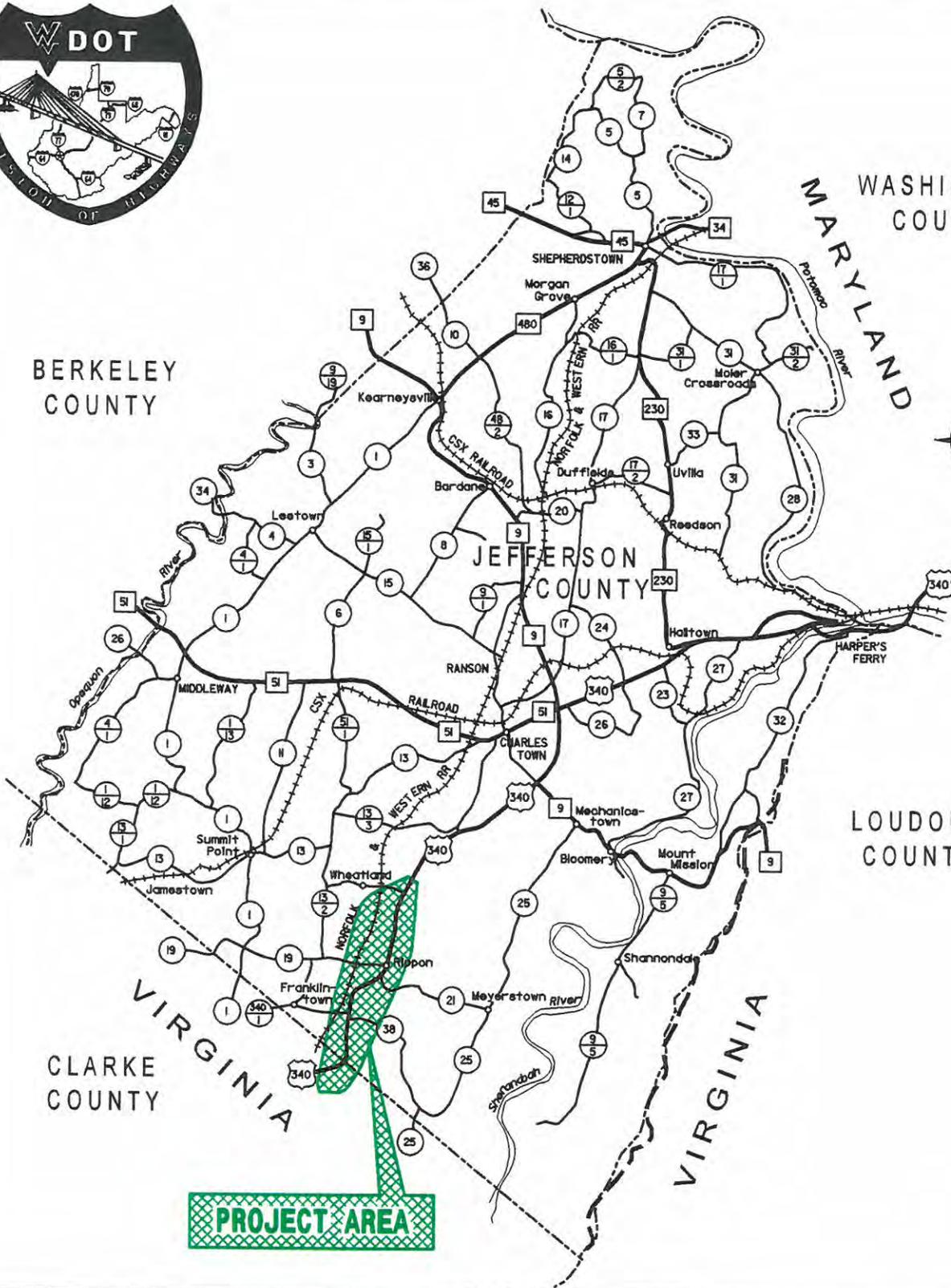
**US 340  
IMPROVEMENT  
STUDY**

**Regional Transportation  
Network**

**Exhibit I-3**



BERKELEY  
COUNTY



WASHINGTON  
COUNTY

MARYLAND



JEFFERSON  
COUNTY

LOUDOUN  
COUNTY

CLARKE  
COUNTY

VIRGINIA

VIRGINIA

**PROJECT AREA**

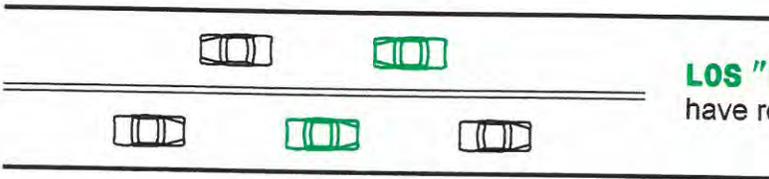
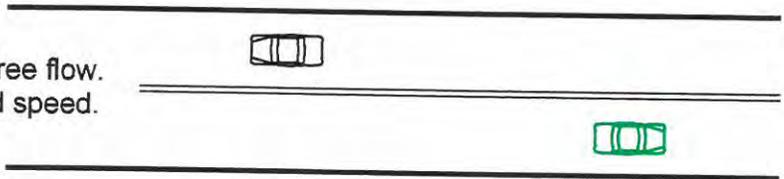
**US 340  
IMPROVEMENT  
STUDY**

**Local Transportation  
Network**

**Exhibit I-4**

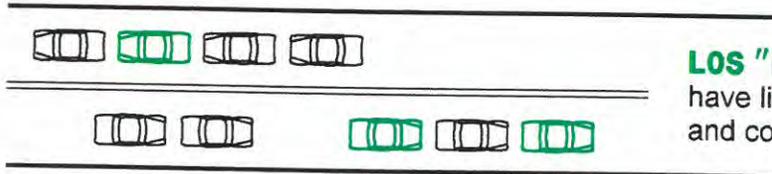
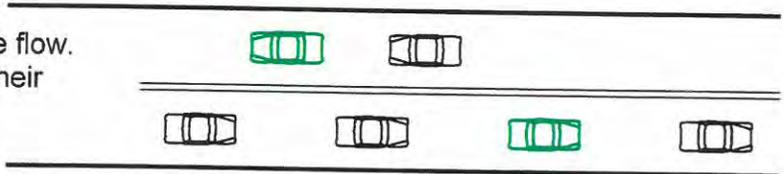


**LOS "A"** describes a condition of free flow. Drivers are able to drive at a desired speed.



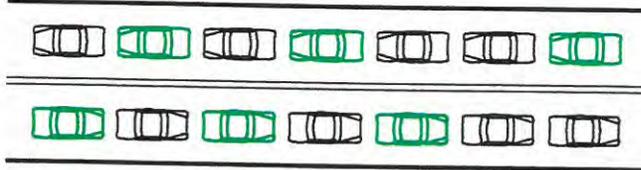
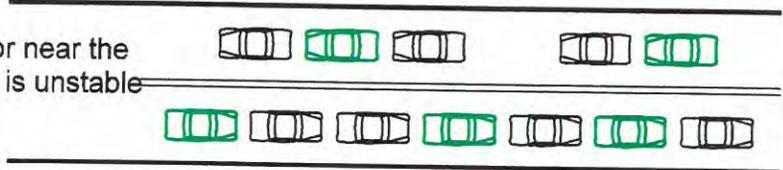
**LOS "B"** is in the zone of stable flow. Drivers have reasonable freedom to select their speed.

**LOS "C"** is still in the zone of stable flow. Most of the drivers are restricted in their freedom to select their own speed.



**LOS "D"** approaches unstable flow. Drivers have little freedom to maneuver and comfort and convenience are low.

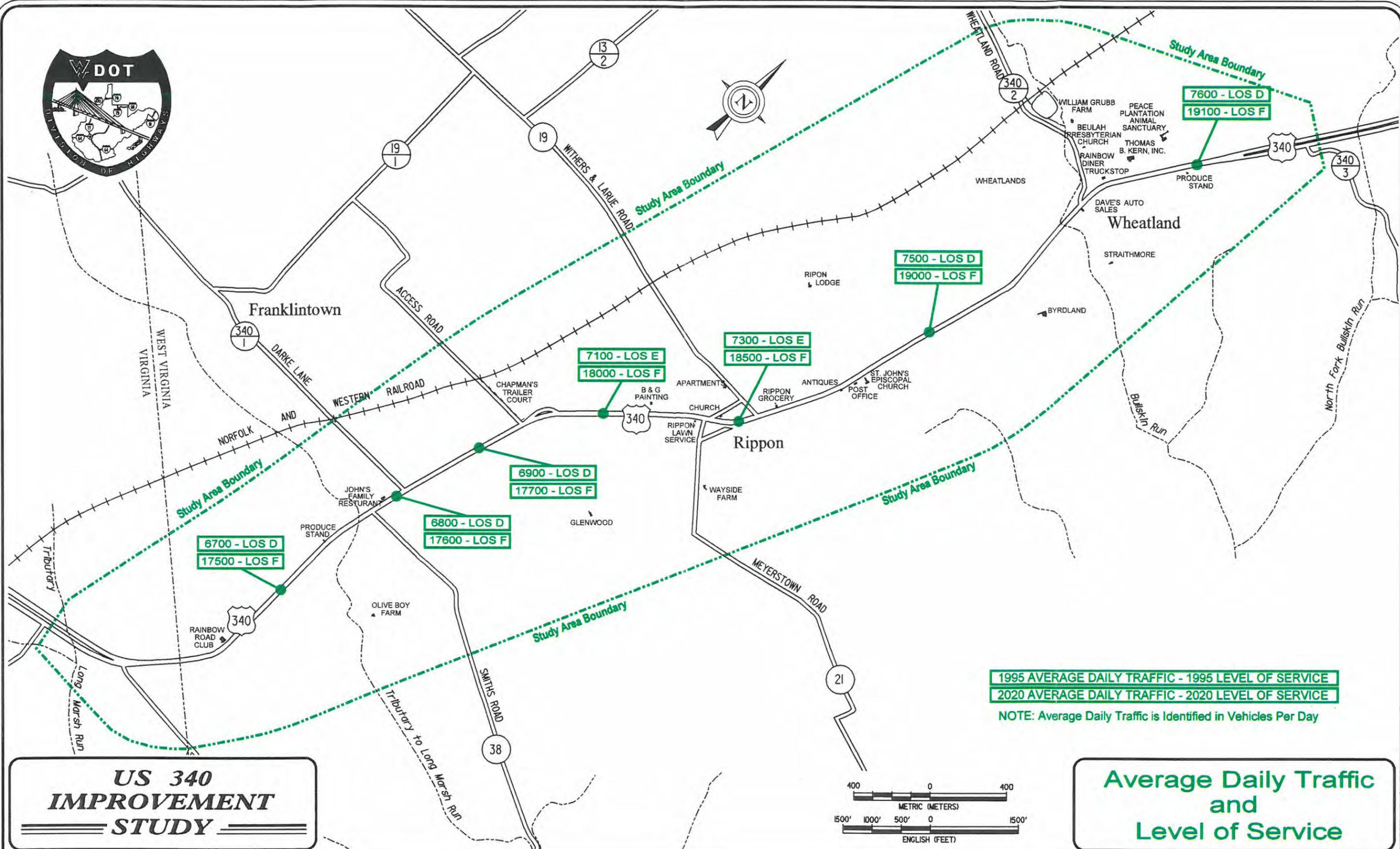
**LOS "E"** represents operations at or near the capacity of the highway. Traffic flow is unstable and driver frustration is high.



**LOS "F"** represents heavily congested flow. Traffic demand exceeds capacity and driver frustration is very high.

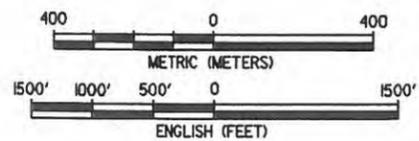
**US 340  
IMPROVEMENT  
STUDY**

**Level of Service**



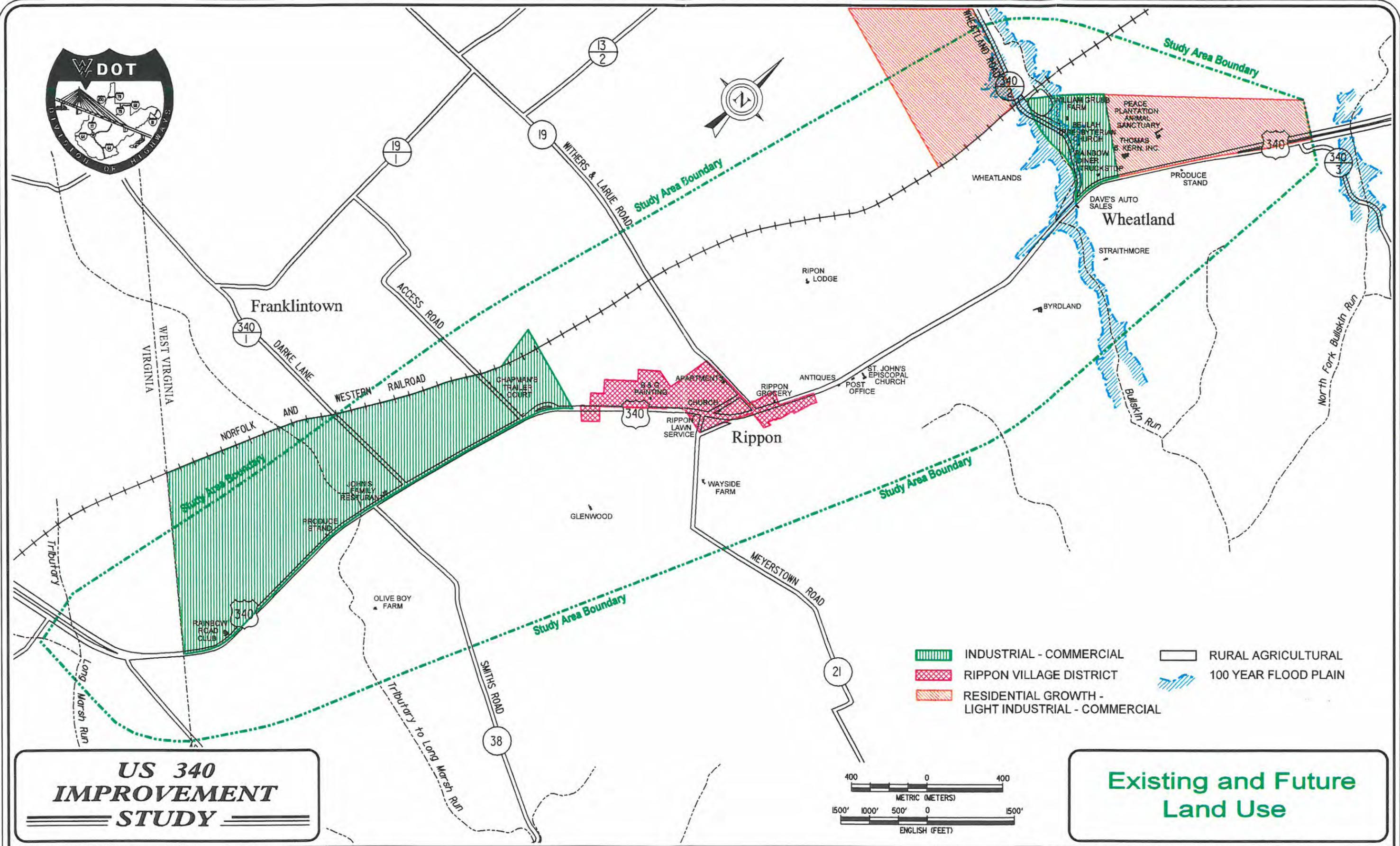
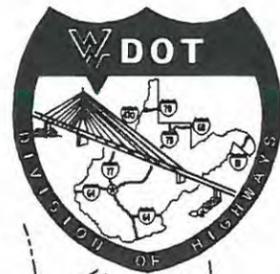
**1995 AVERAGE DAILY TRAFFIC - 1995 LEVEL OF SERVICE**  
**2020 AVERAGE DAILY TRAFFIC - 2020 LEVEL OF SERVICE**  
 NOTE: Average Daily Traffic is Identified in Vehicles Per Day

**US 340  
IMPROVEMENT  
STUDY**



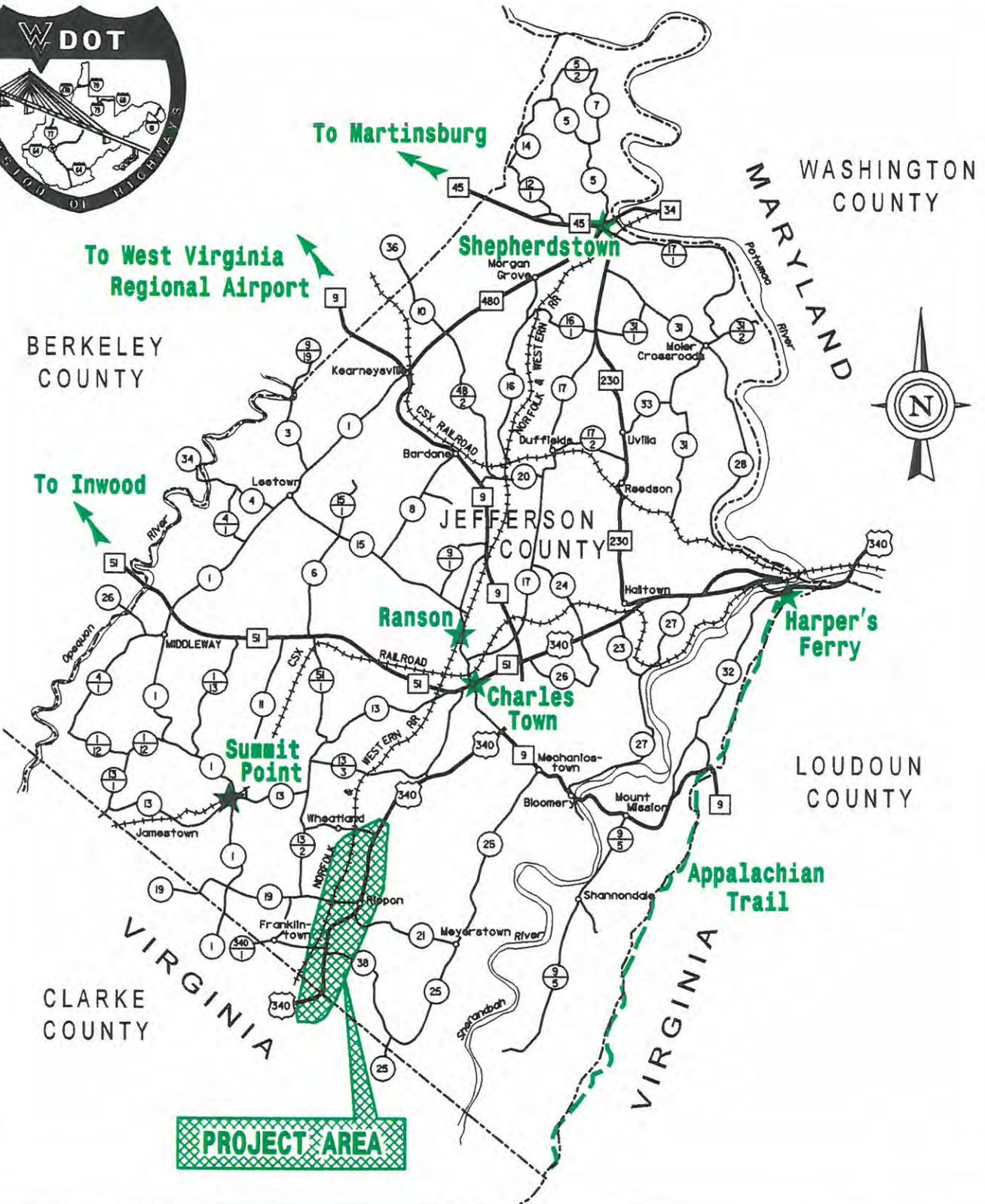
**Average Daily Traffic  
and  
Level of Service**

Exhibit I-6



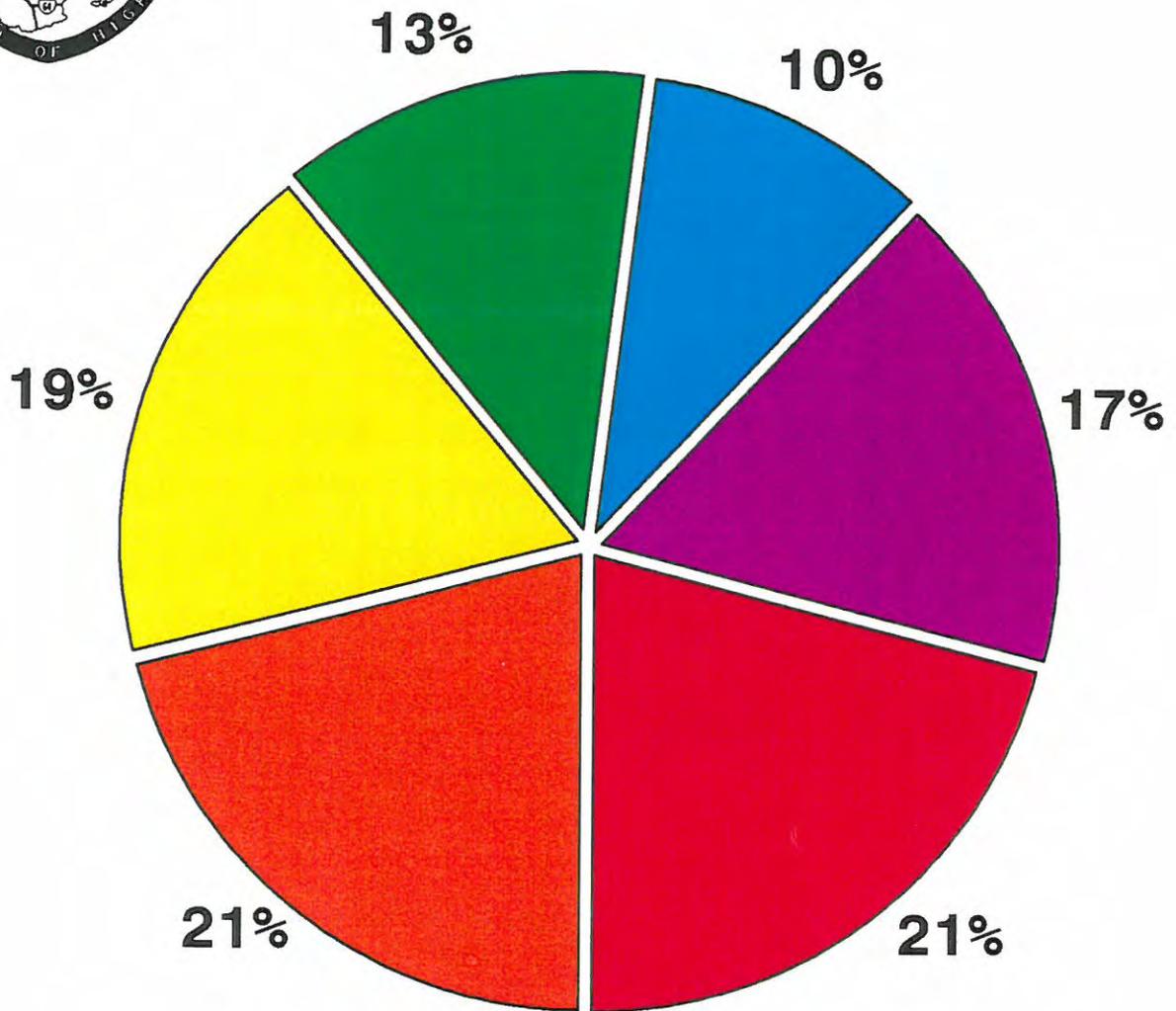
**US 340  
IMPROVEMENT  
STUDY**

**Existing and Future  
Land Use**



**US 340  
IMPROVEMENT  
STUDY**

**Local Points of Interest**

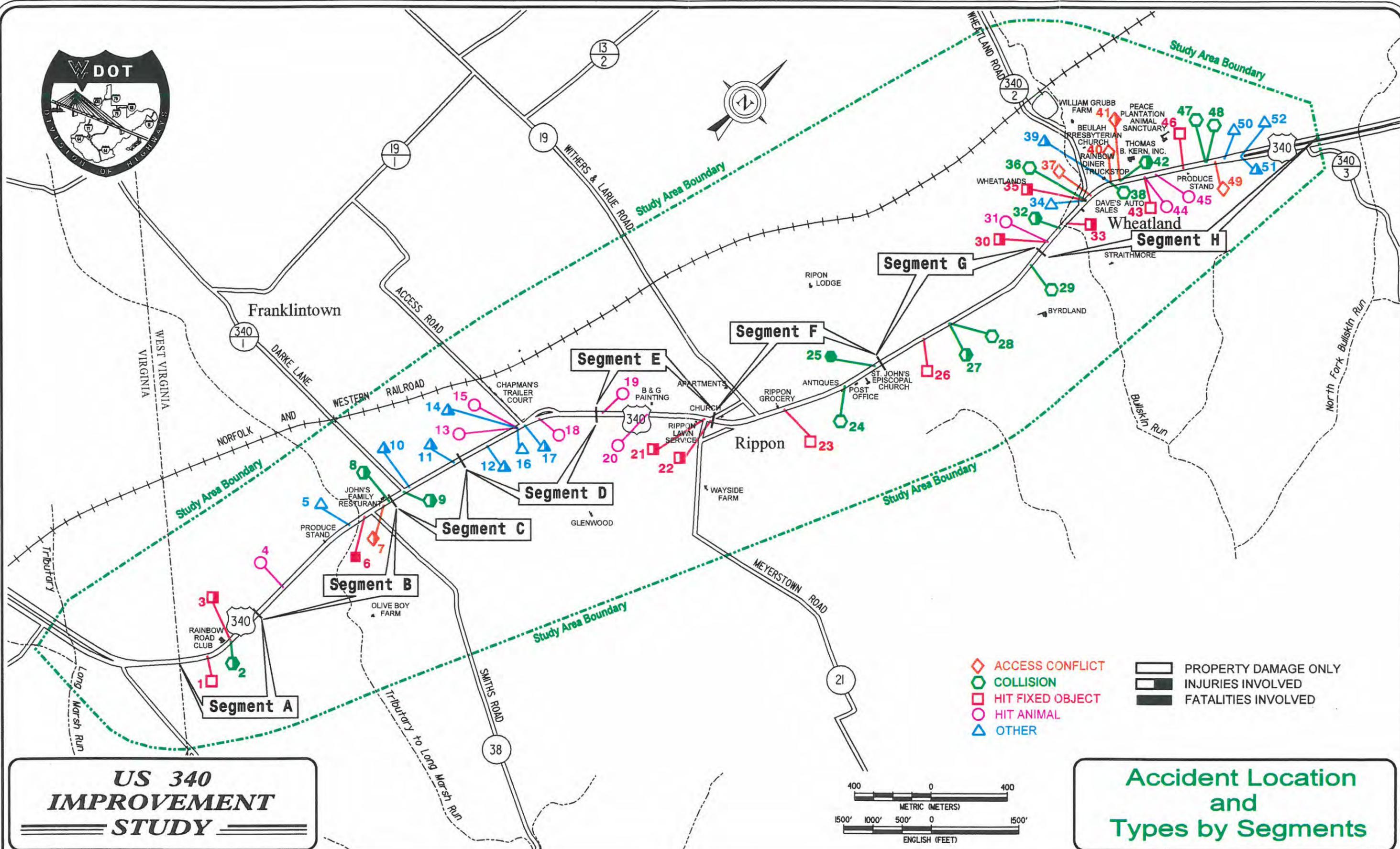


- |   |                  |  |              |
|---|------------------|--|--------------|
|  | Access Conflict  |  | Hit Animal   |
|  | Collision        |  | Ran off Road |
|  | Hit Fixed Object |  | Other        |

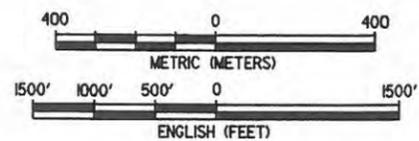
**US 340  
IMPROVEMENT  
STUDY**

**Accident Rates**

**Exhibit I-9**



- ◆ ACCESS CONFLICT
- COLLISION
- HIT FIXED OBJECT
- HIT ANIMAL
- △ OTHER
- PROPERTY DAMAGE ONLY
- INJURIES INVOLVED
- FATALITIES INVOLVED



**US 340  
IMPROVEMENT  
STUDY**

**Accident Location  
and  
Types by Segments**

## **II. ALTERNATIVES**

At the outset of this project, four broad-ranged alternatives were established for consideration. These included the Mass Transit Alternative, the Transportation Systems Management (TSM) Alternative, the No-Build Alternative, and the Build Alternative. The Build Alternative includes the construction of a partially controlled access four-lane divided highway with a depressed median.

The Mass Transit Alternative and the TSM Alternative were eliminated from further consideration because they do not serve the needs of the project or have been determined not to be prudent alternatives. The TSM Alternative does not address the capacity or roadway continuity needs. The Mass Transit Alternative does not have sufficient ridership to eliminate the need for roadway capacity improvements.

The No-Build Alternative and the Build Alternative were retained for detailed analysis. Eight build alternates were developed and analyzed. Based on these analyses, six of the build alternates were eliminated and two build alternates remain under consideration for the project. The selection of a Preferred Alternative will be made after the comments received through the circulation of this document and the Public Hearing are fully evaluated.

### **A. Transportation Systems Management Alternative**

The Transportation System Management Alternative (TSM) includes those activities that maximize the efficiency of the present roadway transportation system such as intersection and safety improvements. These improvements might include the addition of turning lanes or signaling an unsignalized intersection. Safety improvements such as adding guardrails, lane-widening, widening shoulders, and spot vertical alignment adjustments to improve sight distance are also part of the TSM Alternative. Although enhancing the intersections along US 340 improve operations at those locations, and modifications could be made to improve safety, the TSM Alternative would not address the capacity needs along the mainline of the roadway. Predicted traffic volumes along US 340 in the project area range from 17,500 vpd to 19,100 vpd. Even with intersection improvements and safety modifications, these projected traffic volumes along the mainline of US 340 result

in intolerable delays. The improvements do not address all of the roadway deficiencies along existing US 340. The TSM Alternative does not meet the purpose or needs of this project and has been eliminated from further study.

## **B. Mass Transit Alternative**

The Mass Transit Alternative involves providing commuter transportation services through the project area. The intent of the Mass Transit Alternative is to shift the transportation user from cars to commuter vehicles (buses, light rail, van-pools, car-pools) such that adding capacity to the roadway system through additional travel lanes is not necessary. Currently there is no bus service within the immediate project area. The Eastern Panhandle Transit Authority (PanTran) provides public bus service north of the project area. Mass transit is generally considered a viable option in areas with densities greater than 2000 persons per square mile. Because of the rural nature of the project area, this alternative does not attract enough users to reduce the need for added lanes on the facility to handle the project travel demand. This alternative also does not address the existing roadway deficiencies. The Mass Transit Alternative does not address the needs of this study, is not prudent or feasible and, therefore, has been eliminated from further study.

## **C. No-Build Alternative**

The No-Build Alternative involves regular maintenance to the existing facility, but no major improvements to the roadway are made. This alternative does not address the roadway deficiencies that currently exist along this roadway, nor does it address the projected future traffic volumes. The No-Build Alternative does not address or meet the needs of this project. However, the No-Build Alternative is retained for comparison purposes.

## **D. Build Alternative**

### **1. Build Alternative Design Criteria**

Projected traffic volumes for this roadway corridor indicate that a four-lane facility is required through the study area. The proposed typical section for

this project is shown in Exhibit II-1. A divided highway with a 40-foot (12.2-meter) depressed median is proposed throughout the length of the facility. The facility is designed in accordance with the American Association of State Highway and Transportation Officials, *A Policy on Geometric Design of Highways and Streets*. The design speed is 60 miles per hour (102 kilometers per hour). All proposed profile grades are well below the maximum allowable grade of 4 percent. All horizontal curvature is below the maximum radius of curvature of 1,528 feet (500 meters). The Design Criteria are listed in Table II-1.

## **2. Development of the Build Alternates**

The concept behind the development of the Build Alternative is to utilize available right of way, reduce impacts to adjacent property owners, and provide an orderly maintenance of traffic during project construction. A total of eight different build alternates were developed for the project study. Several combinations of roadway segments were connected to form each alignment. Each alignment went through several iterations to ensure that the impacts to the historic resources in the area were minimized. Exhibit II-2 displays the locations of these eight build alternates and the development of these alignments are discussed as follows.

At the start of the study, Alternates 1 through 7 were developed for the project. These alternates extended from the existing four-lane section of US 340 in Clarke County Virginia, approximately 0.5 miles (0.8 kilometers) south of the state line between Virginia and West Virginia, to the four-lane section of the Charles Town Bypass in Jefferson County West Virginia. During the preliminary analysis of these seven alternates, Alternates 2 and 7 were eliminated. Alternates 1, 3, 4, 5, and 6 were retained for detail study.

During the detail study, several options for the alignments for Alternates 1, 3, 4, 5, and 6 were evaluated to avoid the many historic resources in the project area. The two-lane section of US 340 in Virginia extends through the Long Marsh Run Rural Historic District and the Clarke County Agricultural District. To avoid impacting these two resources in Virginia, an option to revise the southern project limits for Alternates 1, 3, 4, 5, and 6 to begin at the state line between Virginia and West Virginia was evaluated. With this option, the improvements for the

**TABLE II-1  
DESIGN CRITERIA**

	<b>Mainline</b>	<b>Major Access Roads</b>
Class of Highway	Rural Arterial	Rural
Type of Terrain	Rolling	Rolling
Design Speed	60 mph (102 kph)	40 mph (65 kph)
Required Stopping Sight Distance	550 feet (180 meters)	325 feet (100 meters)
Design Stopping Sight Distance	725 feet (246 meters)	
ADT Present (1994)	7,000	
ADT Future (2014)	14,800	
DHV (2014)	1,480	
D%	55/45	
%T(DHV)	10%	
K	10%	
Maximum Grade	4.0%	8.0%
Minimum Radius	1,528 feet (500 meters)	
Maximum Superelevation	0.08	0.08
Roadway Width:	4 lanes @ 12 feet ea. (3.6 meters)	
Median Width:	40 feet (Depressed) (12.2 meters)	
Shoulder Width:	Outside - 12 feet (3.6 meters) (10 feet Paved) (3 meters) Inside - 6 feet (1.8 meters) (3 feet Paved) (0.9 meters)	
Access spacing	2,000 feet Minimum (610 meters)	

Source: AASHTO, *A Policy on Geometric Design of Highways and Streets*, 1990 and 1994.

approximate 4.0-mile (6.4 kilometer), two-lane section of US 340 in West Virginia would be evaluated in this document. The Virginia Department of Transportation (VDOT) would study the remaining 0.5-mile (0.8 kilometer), two-lane section of US 340 in Virginia as a separate project.

During the evaluation of the historic properties located within the West Virginia study area, the Kabletown Rural Historic District was identified. This rural historic district encompasses approximately 18 square miles (4,500 hectares) and is discussed in detail in Section 3.0. All five of the build alternates impacted this rural historic district and various other historic properties in the study area. To avoid these historic resources in West Virginia, an avoidance alternative, Alternate 8, was developed.

Further coordination with the VDOT determined that there was sufficient existing right of way within the two-lane section of US 340 to accommodate widening it to the four-lane section. Therefore, the southern project terminals for Alternates 1, 3, 4, 5, 6, and 8 were revised to extend back into Virginia to tie into the existing four-lane section of US 340. Design revisions were made to the build alternates so that the roadway improvements for this section of US 340 in Virginia will remain within the existing US 340 right of way. Therefore, all six of the alternates will avoid impacts to the Long Marsh Run Rural Historic District and the Clarke County Agricultural District. The design constraints created by staying within the existing right of way in Virginia prevents Alternate 8 from completely avoiding the Kabletown Rural Historic District in West Virginia. However, Alternate 8 will still avoid the other historic resources in the study area.

### **3. Eight Build Alternates**

All eight build alternates considered for the project are described in detail in the following sections.

#### **a. Alternate 1**

Alternate 1 generally follows the existing roadway, beginning at the existing four-lane section of US 340 in Clarke County, Virginia and ending at the four-lane section of the Charles Town Bypass in Jefferson County, West Virginia,

approximately 0.4 miles (0.7 kilometers) north of Jefferson County 340/2. This alignment bypasses the community of Rippon to the west. The approximate length of Alternate 1 is 4.5 miles (7.2 kilometers). The location of Alternate 1 is shown in Exhibit II-3.

The proposed alignment begins at Station 104+37 and follows the existing alignment, offset to the east, to Station 200+00. At Station 200+00, the alignment diverges to the west from the existing US 340, bypassing the community of Rippon. At station 207+90, a connector road from Alternate 1 to existing US 340 is provided for access to the community of Rippon. This alignment crosses Jefferson County 19, 0.3 miles (0.5 kilometers) west of the existing US 340 intersection. Alternate 1 then passes through the historic Rippon Lodge property, approximately 200 feet (61 meters) west of the actual Rippon Lodge. Alternate 1 rejoins the existing US 340 at Station 305+00, follows the existing roadway, and ends at Station 340+00.

**b. Alternate 2**

Alternate 2 generally follows the existing alignment of US 340. It is offset slightly to the east from the existing roadway through the community of Rippon. Within Rippon, the existing roadway is crossed several times to improve the horizontal alignment. It continues to follow the existing roadway north of Rippon, offset slightly to the west. South of Wheatland, the existing roadway is crossed again in order to meet design criteria for horizontal alignment. The location of Alternate 2 is shown in Exhibit II-4.

Alternate 2 is not developed for detailed study because of the right of way impact. It requires the acquisition of a majority of the properties adjacent to US 340 through the community of Rippon, an eligible historic district. In addition, this alternate is not fully developed because of the inability to maintain traffic during construction and the secondary impacts resulting from construction. Furthermore, this alternate does not meet the access control criteria proposed for this project. Therefore, this alternate is eliminated from further study during preliminary evaluations.

**c. Alternate 3**

Alternate 3 is similar to Alternate 1 in that it parallels the existing alignment from the existing four-lane section in Clarke County, Virginia to approximately Station 200+00 in West Virginia, then diverges and bypasses Rippon to the west. The total length for this alignment is 4.5 miles (7.2 kilometers). The location of Alternate 3 is shown in Exhibit II-5.

Alternate 3 begins at Station 104+04 and follows the existing alignment. At Station 200+00, the alignment diverges from the existing roadway to continue north bypassing the community of Rippon. At station 207+90 a road is provided from Alternate 3 to existing US 340 for access to the community of Rippon. This alignment crosses Jefferson County 19, 0.3 miles (0.5 kilometers) west of the existing intersection of US 340. The alignment turns east at Station 220+95 and traverses the Historic Ripon Lodge property within approximately 200 feet (61 meters) of the Ripon home. At Station 290+00, the alignment shifts to the north and nearly matches the existing US 340 alignment. From this point the proposed alignment follows the existing roadway, with a slight offset and a modified curve near Wheatland, until it ties into the existing divided segment of US 340 south of Charles Town at Station 340+00.

**d. Alternate 4**

Alternate 4 begins at the four-lane section of US 340 in Clarke County, Virginia and ends approximately 600 feet (183 meters) south of Jefferson County 340/3 in West Virginia. The proposed alignment generally follows the existing roadway with the exception that the new alignment bypasses the community of Rippon to the east. The total length of Alternate 4 is 4.5 miles (7.2 kilometers). Exhibit II-6 shows the location of Alternate 4.

Beginning at Station 104+04, Alternate 4 generally follows the existing alignment until Station 175+00 where the alignment shifts east and continues east across undeveloped land, bypassing the community of Rippon. At Station 194+01, an access road to existing US 340 is provided. The alignment of Alternate 4 continues northeast paralleling the existing roadway. It crosses Jefferson County 21, 650 feet (198 meters) east of the existing intersection. The

proposed crossing is located approximately 480 feet (146 meters) east of the Wayside Farm, an eligible historic resource. The alignment follows a northwest direction towards the existing facility. At station 266+20 an access road to existing US 340 is provided. Alternate 4 then runs parallel and east of existing US 340 near the intersection of Jefferson County 340/2 at Station 343+00.

**e. Alternate 5**

Alternate 5 begins at the four-lane section of US 340 in Virginia, diverges from existing US 340, and continues in an easterly direction to bypass Rippon. This alternate rejoins the existing US 340 alignment 1,800 feet (550 meters) south of Jefferson County 340/2 and ends near the intersection of Jefferson County 340/3. The total length of this alternate is approximately 4.6 miles (7.3 kilometers). Exhibit II-7 shows the location of Alternate 5.

Alternate 5 begins in Virginia approximately 2,100 feet (639 meters) south of the state line between Virginia and West Virginia. It continues east traversing the Olive Boy Farm, an eligible historic resource, approximately 600 feet (180 meters) east of the main house. Alternate 5 crosses Jefferson County 38, 1.5 miles (2.4 kilometers) east of the existing intersection. Alternate 5 then crosses Jefferson County 21, 0.4 miles (0.6 kilometers) east of the existing US 340 avoiding the community of Rippon, an eligible historic district. The intersection of Alternate 5 and Jefferson County 21 is located approximately 710 feet (216 meters) east of the Wayside Farm, an eligible historic resource. Access roads from this alignment to existing US 340 and to Rippon are provided at Station 140+00 and Station 262+33. At Station 285+00, Alternate 5 parallels existing US 340 alignment to the east and continues until it ties into existing US 340 at Station 330+00 and ends at Station 344+00.

**f. Alternate 6**

Alternate 6 follows the existing US 340 alignment beginning at the existing four-lane section of US 340 in Clarke County, Virginia and then turns north to parallel the Norfolk and Western Railroad. The alternate rejoins the existing alignment approximately 1,000 feet (300 meters) north of Jefferson County 340/2 and ends approximately 100 feet (30 meters) south of Jefferson

County 340/3. The total length of Alternate 6 is 4.5 miles (7.2 kilometers). Exhibit II-8 shows the location of Alternate 6.

Alternate 6 begins along existing US 340 in Virginia and deviates to the west from the existing roadway near Station 149+00 in West Virginia. Alternate 6 crosses Jefferson County 340/1, 750 feet (229 meters) west of existing US 340. Continuing, it crosses Jefferson County 19 approximately 0.5 miles (0.8 kilometers) west of the existing intersection with US 340. This alignment avoids the community of Rippon and crosses approximately 800 feet (240 meters) west of the existing Ripon Lodge historic home. Access roads to existing US 340 are provided at Station 140+00 and Station 293+97. The Norfolk and Western Railroad is located to the west of Alternate 6, preventing Alternate 6 from being located any further west without two crossings of the railroad tracks. This alignment ties back into the existing alignment at Station 315+00 and from this point, Alternate 6 follows the existing roadway to the end of the project, ending at Station 340+00.

**g. Alternate 7**

Alternate 7 is a variation of Alternate 3. Alternate 7 follows the same alignment as Alternate 3; however at Station 210+00, Alternate 7 deviates from Alternate 3, pulling the alignment closer to the community of Rippon. Alternate 7 crosses Jefferson County 19 at an extreme skew approximately 0.3 miles (0.4 kilometers) east of Alternate 3. This alternate rejoins the existing US 340, 0.6 miles (1 kilometer) north of the US 340/Jefferson County 19 intersection. Continuing, it rejoins the alignment of Alternate 3. The location of Alternate 7 is shown in Exhibit II-9.

Alternate 7 crosses Jefferson County 19 at an angle of approximately 42 degrees and requires substantial realignment of the approaches in order to provide a desirable intersection configuration. For this reason, Alternate 7 was eliminated from further study during preliminary evaluations.

**h. Alternate 8**

Alternate 8 begins in Virginia approximately 2,050 feet (615 meters) south of the state line between Virginia and West Virginia and then

turns north crossing the Norfolk and Western Railroad in West Virginia. The alternate extends parallel to the railroad, crosses the railroad again north of Jefferson County 340/2 and rejoins existing US 340 approximately 100 feet (30 meters) south of Jefferson County 340/3. The total length of Alternate 8 is 5.0 miles (8.0 kilometers). Exhibit II-9 shows the location of Alternate 8.

Alternate 8 begins at the four-lane section of US 340 in Virginia and follows existing US 340 until about Station 85+00 where it turns north crossing Jefferson County 340/1 at approximately Station 102+00. Alternate 8 then continues north and crosses the railroad and Access Road at approximately Stations 117+00 and 124+00, respectively. Continuing west of the railroad tracks, Alternate 8 extends to the north parallel to the tracks and crosses Jefferson County 19 approximately 0.5 miles (0.8 kilometers) west of the existing intersection with US 340 at approximately Station 158+00. This alignment continues north across Jefferson County 340/2 at approximately Station 229+00 and then turns east across the railroad tracks to existing U.S. 340 ending at Station 296+84

## **E. Build Alternate Comparison**

Alternate 1 requires the acquisition of two residences and five commercial buildings. In addition to these acquisitions, five mobile homes will be relocated. This alignment needs service roads for access to six properties. Alternate 1 requires 112 acres (45.3 hectares) of right of way and has an estimated construction cost of \$21,954,000.

Alternate 3 requires the acquisition of two residences and five commercial buildings and the relocation of four mobile homes. A service road is provided for three properties. Alternate 3 requires 107 acres (43.3 hectares) of right of way and has an estimated construction cost of \$21,418,000.

Alternate 4 relocates one mobile home and requires the acquisition of one residence, four commercial buildings, and 108 acres (43.7 hectares) of right of way. A service road is provided to three adjacent properties. Alternate 4 has an estimated construction cost of \$21,212,000.

Alternate 5 requires 112 acres (45.3 hectares) of right of way. This alternate divides a few large properties and requires the acquisition of one residence and two commercial buildings. Alternate 5 has an estimated construction cost of \$21,168,000.

Alternate 6 requires approximately 115 acres (46.6 hectares) of right of way. This alternate requires the relocation of five mobile homes and the acquisition of one residential building and four commercial buildings. Alternate 6 has an estimated construction cost of \$24,249,000.

Alternate 8 requires approximately 132 acres (53.0 hectares) of right of way. This alternate requires the relocation of five mobile homes and the acquisition of one residence and two commercial buildings. Alternate 8 has an estimated construction cost of \$35,407,000.

Table II-2 compares the construction, right of way, and total cost of the six build alternates under consideration for the US 340 Improvement Study. As shown, Alternate 5 is the least expensive to construct and Alternate 8 is the most expensive to construct. The estimated total costs provided do not include costs to mitigate environmental impacts.

**TABLE II-2  
ALTERNATE COST COMPARISON**

Alternate	Relationship to Rippon Village	Cost		
		Construction *	Right of Way	Total
<b>1</b>	bypasses to the <b>West</b>	\$21,954,000	\$3,500,000	\$25,454,000
<b>3</b>	bypasses to the <b>West</b>	\$21,418,000	\$3,800,000	\$25,218,000
<b>4</b>	bypasses to the <b>East</b>	\$21,212,000	\$3,100,000	\$24,312,000
<b>5</b>	bypasses to the <b>East</b>	\$21,678,000	\$2,475,000	\$24,153,000
<b>6</b>	bypasses to the <b>West</b>	\$24,249,000	\$2,775,000	\$27,024,000
<b>8</b>	bypasses to the <b>West</b>	\$35,407,000	\$3,800,000	\$39,207,000

\* This cost excludes cost to mitigate environmental impacts.

An Alternatives Report for the project was circulated in February of 1997. A complete listing of the agencies receiving the Alternatives Report is contained in Section VIII of this document. The United States Environmental Protection Agency concurred with the report in a letter dated June 19, 1997. The Department of the Army, Corps of Engineers concurred in a letter dated July 8, 1997. All other agencies chose not to respond. Concurrence is assumed for these agencies.

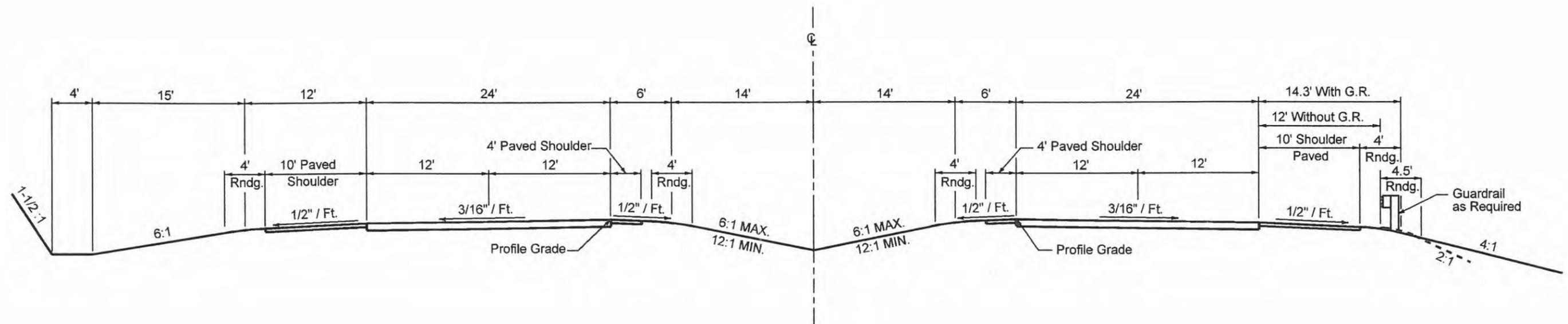
The Alternatives Report covered all the alternatives considered for the project with the exception of Build Alternate 8. This alternate was developed in January 2000 to avoid impacting the historic resources.

## **F. Build Alternates Eliminated**

Following the detailed analysis for Alternates 1, 3, 4, 5, 6, and 8, Alternates 1, 2, 4, and 5 were eliminated from further consideration. These alternates were eliminated because they would impact more property from the historic architectural resources eligible for the National Register of Historic Places than Alternates 6 and 8. Alternates 1, 2, 4, and 5 would impact between 55.4 acres (22.4 hectares) to 121.0 acres (49.0 hectares) of property from four to five historic resources.

## **G. Build Alternates Remaining**

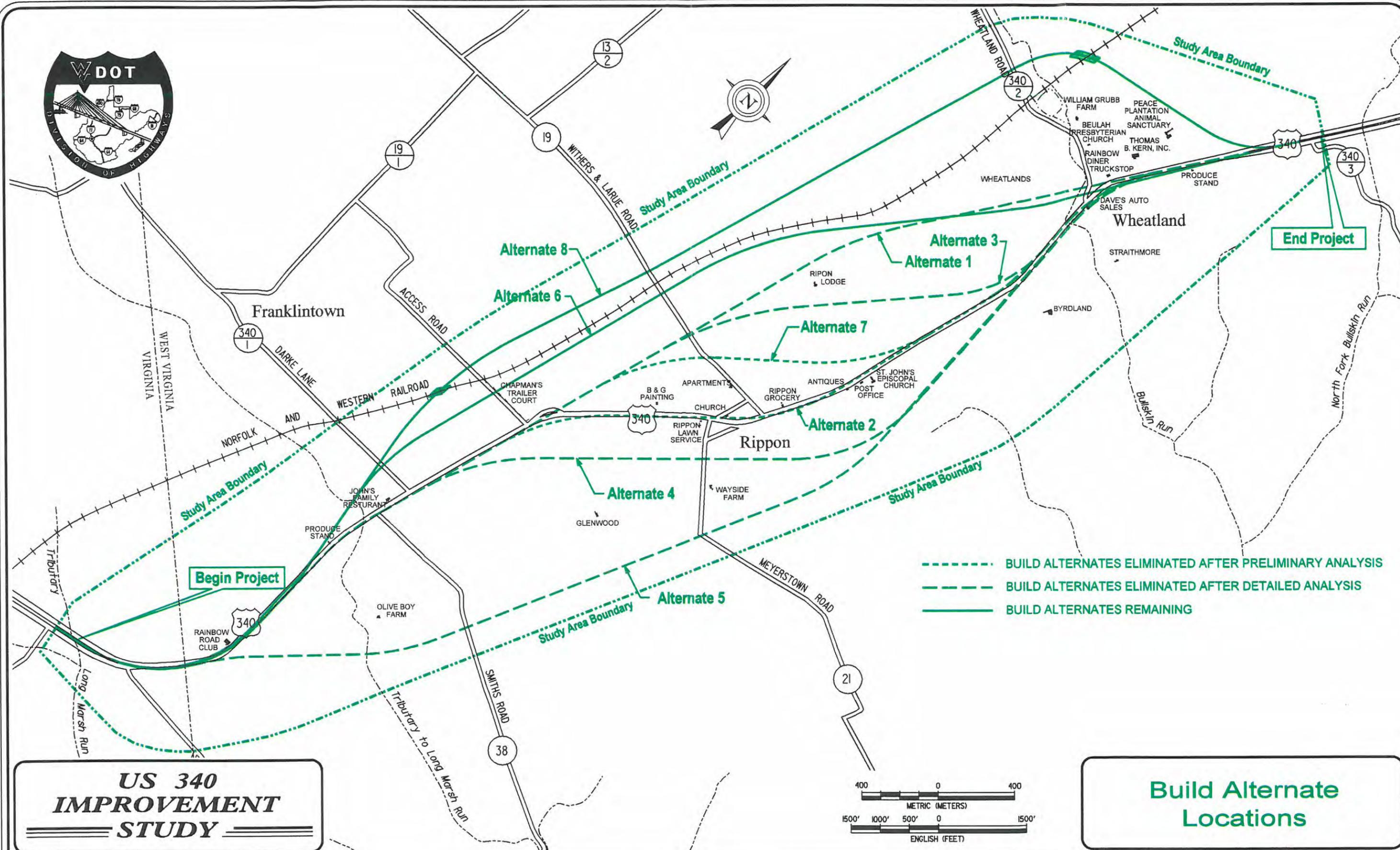
Alternates 6 and 8 are the remaining alternates considered for implementation for the project. Following the receipt of the comments on this environmental document and the Public Hearing, one of these two alternates could be selected as the Preferred Alternative for the project.



**US 340  
IMPROVEMENT  
STUDY**

**Typical Section**

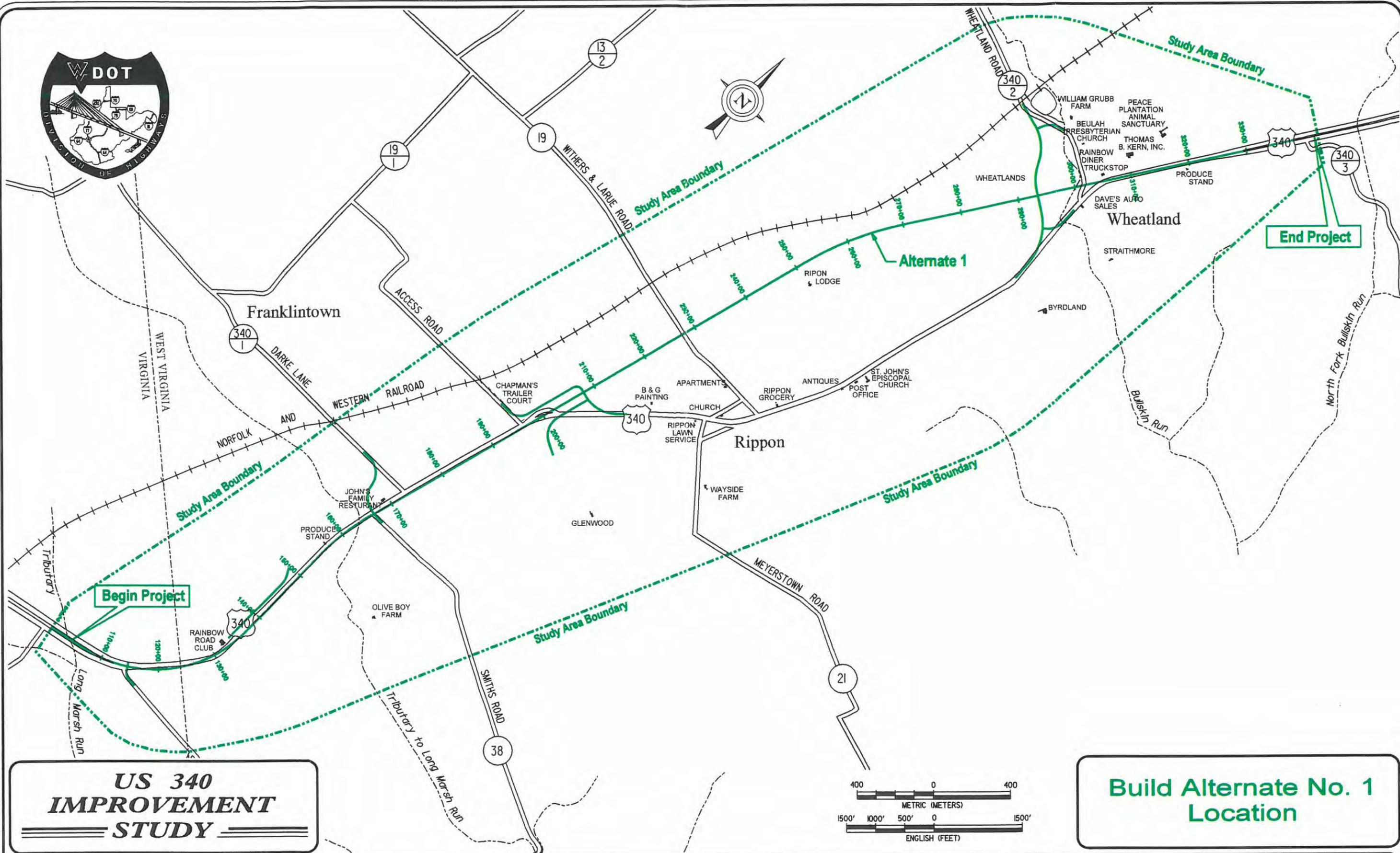
**Exhibit II-1**



**US 340  
IMPROVEMENT  
STUDY**

**Build Alternate  
Locations**

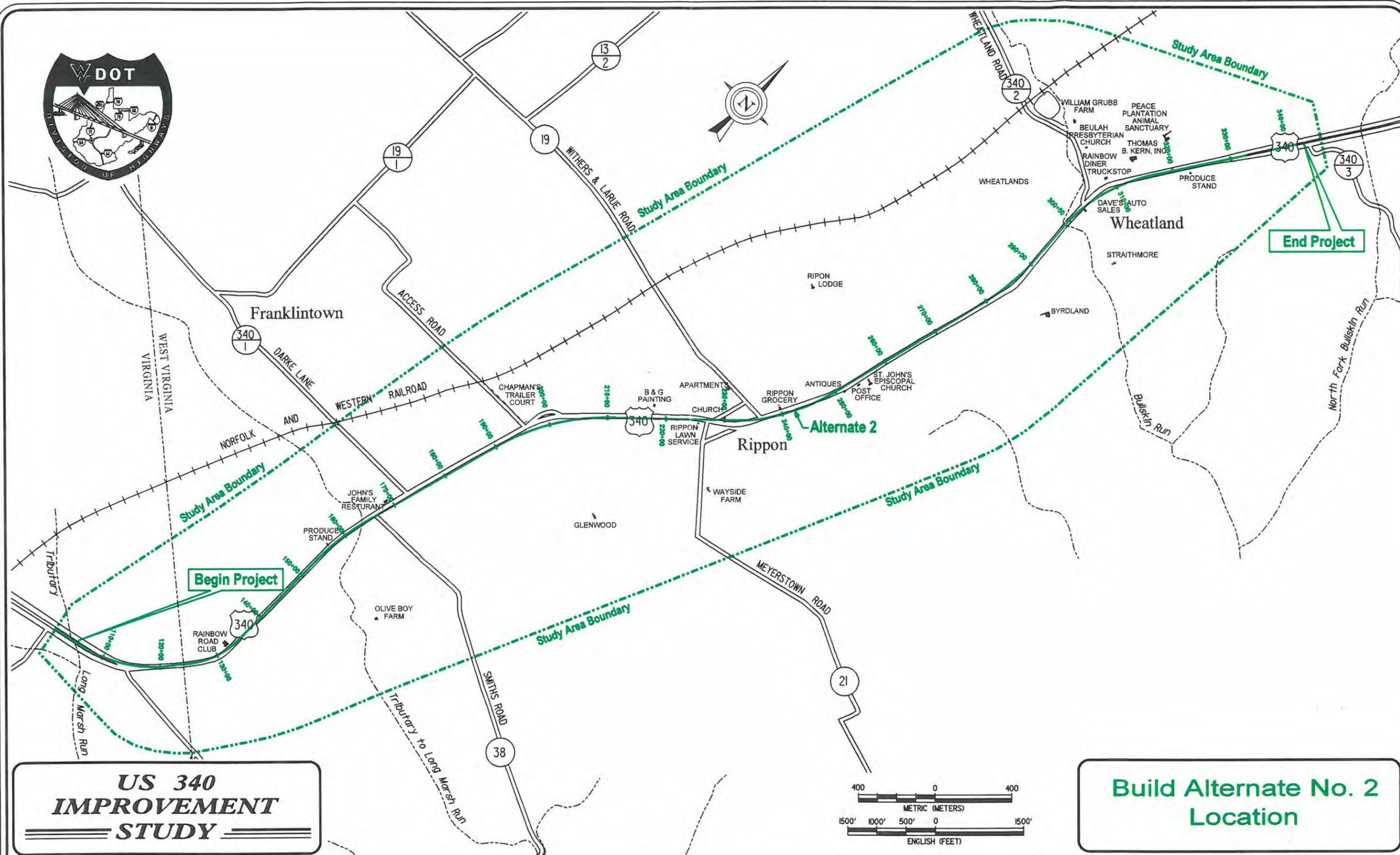
Exhibit II-2



**US 340  
IMPROVEMENT  
STUDY**

**Build Alternate No. 1  
Location**

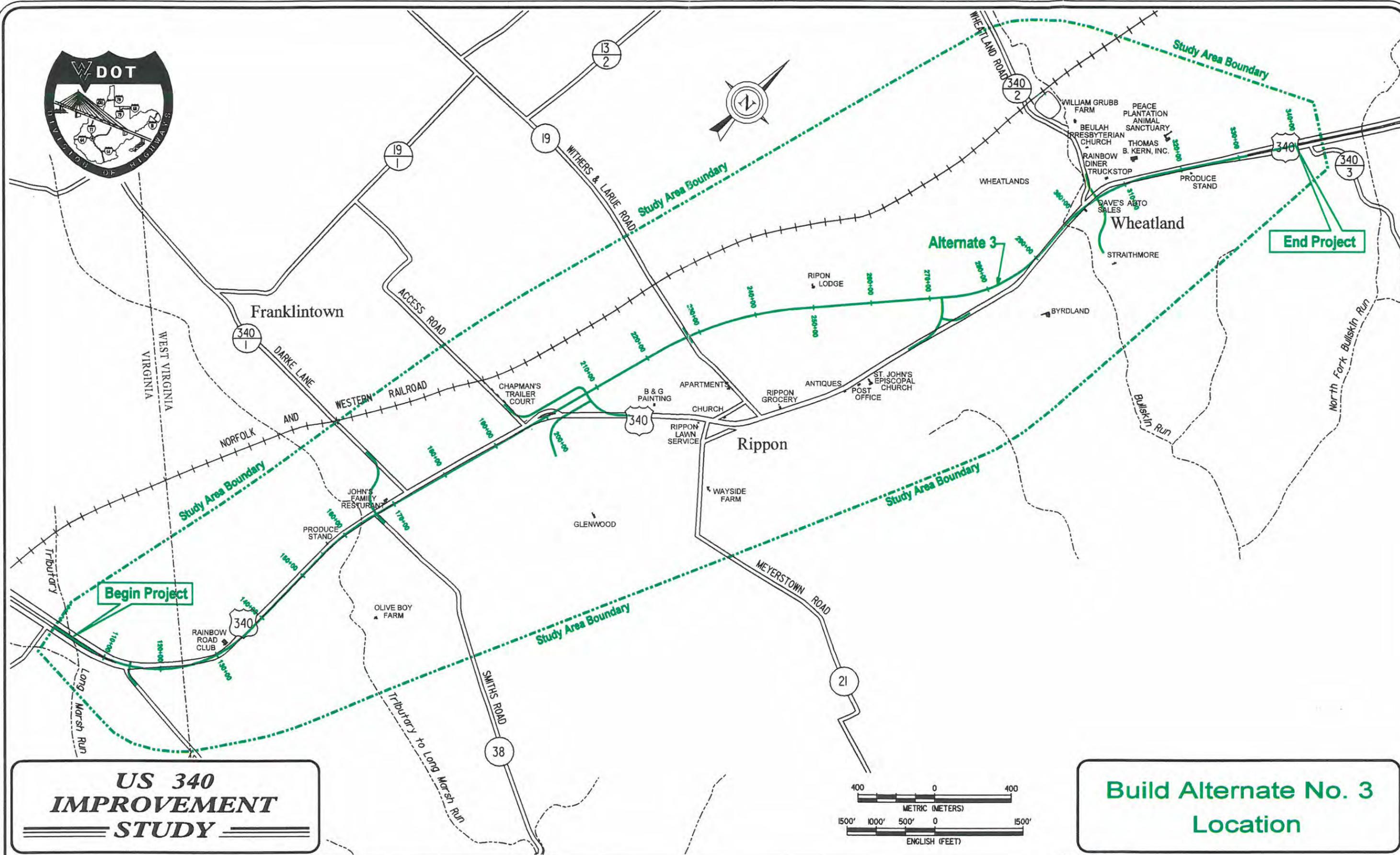
Exhibit II-3



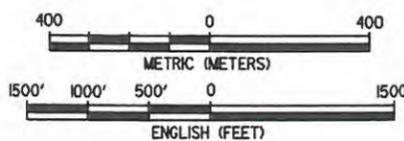
**US 340  
IMPROVEMENT  
STUDY**

**Build Alternate No. 2  
Location**

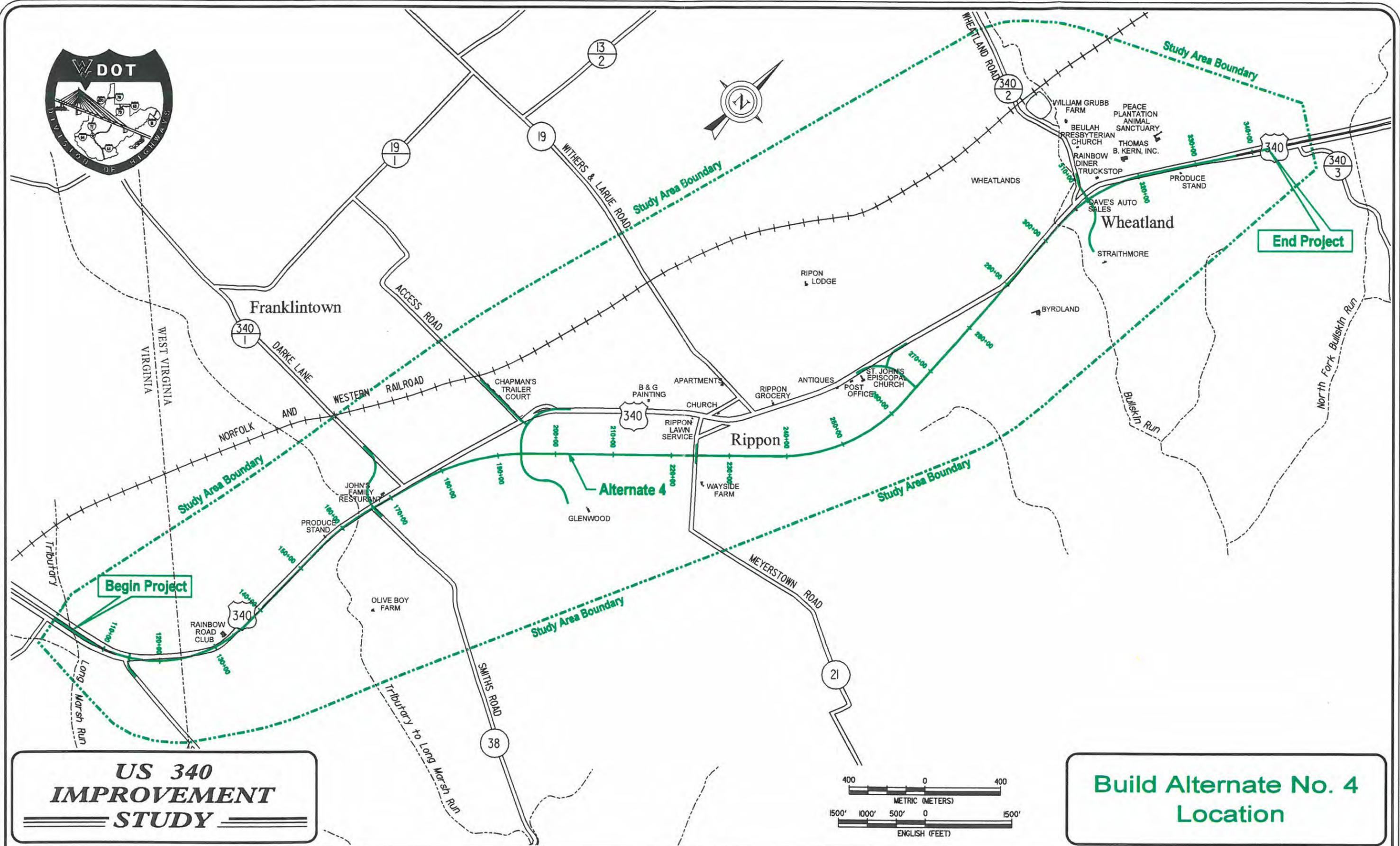
Exhibit II-4



**US 340  
IMPROVEMENT  
STUDY**



**Build Alternate No. 3  
Location**

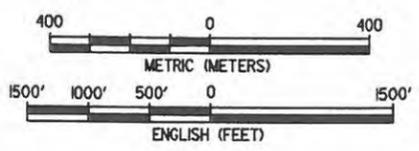


**Begin Project**

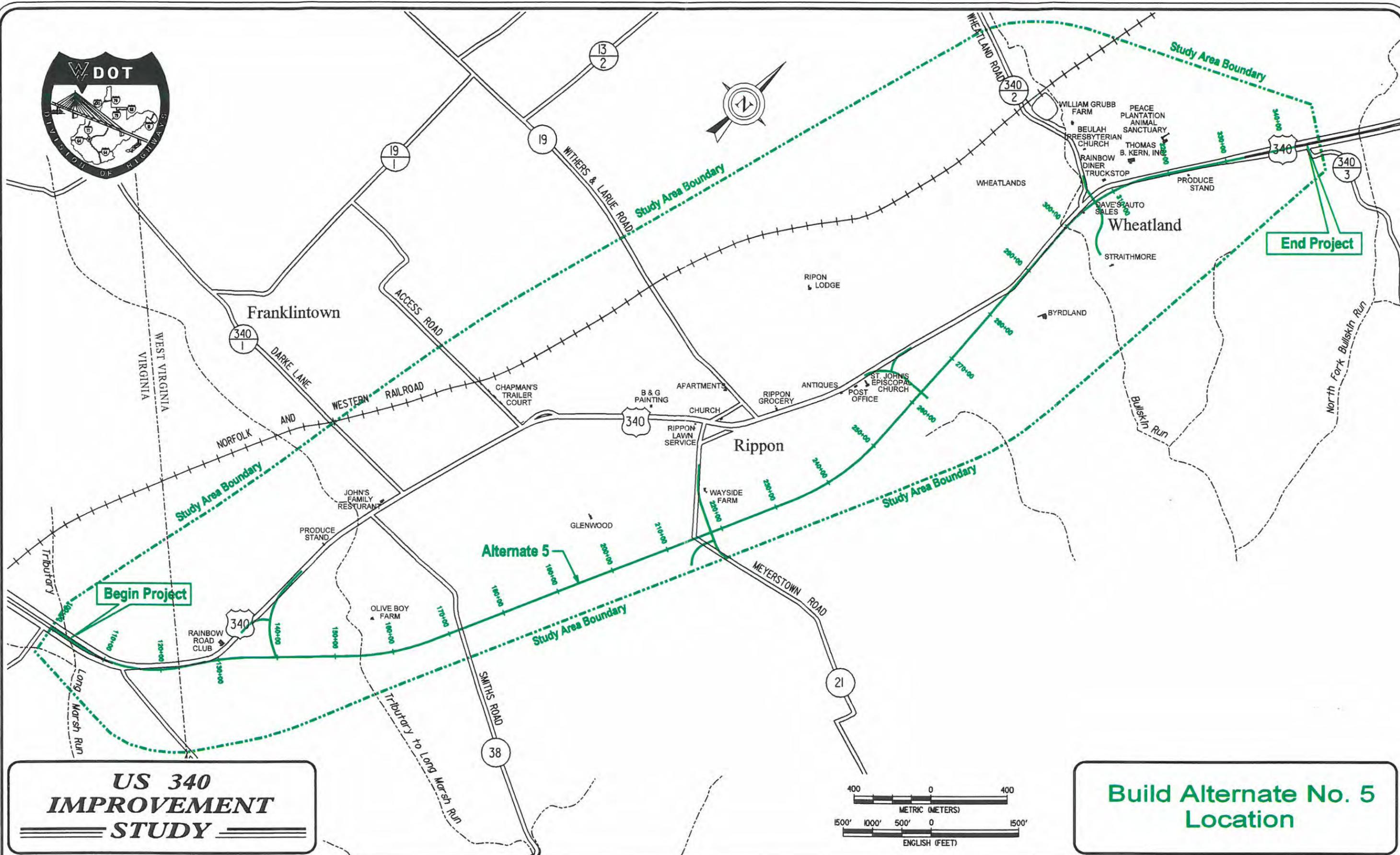
**End Project**

**Alternate 4**

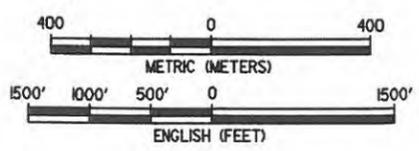
**US 340  
IMPROVEMENT  
STUDY**



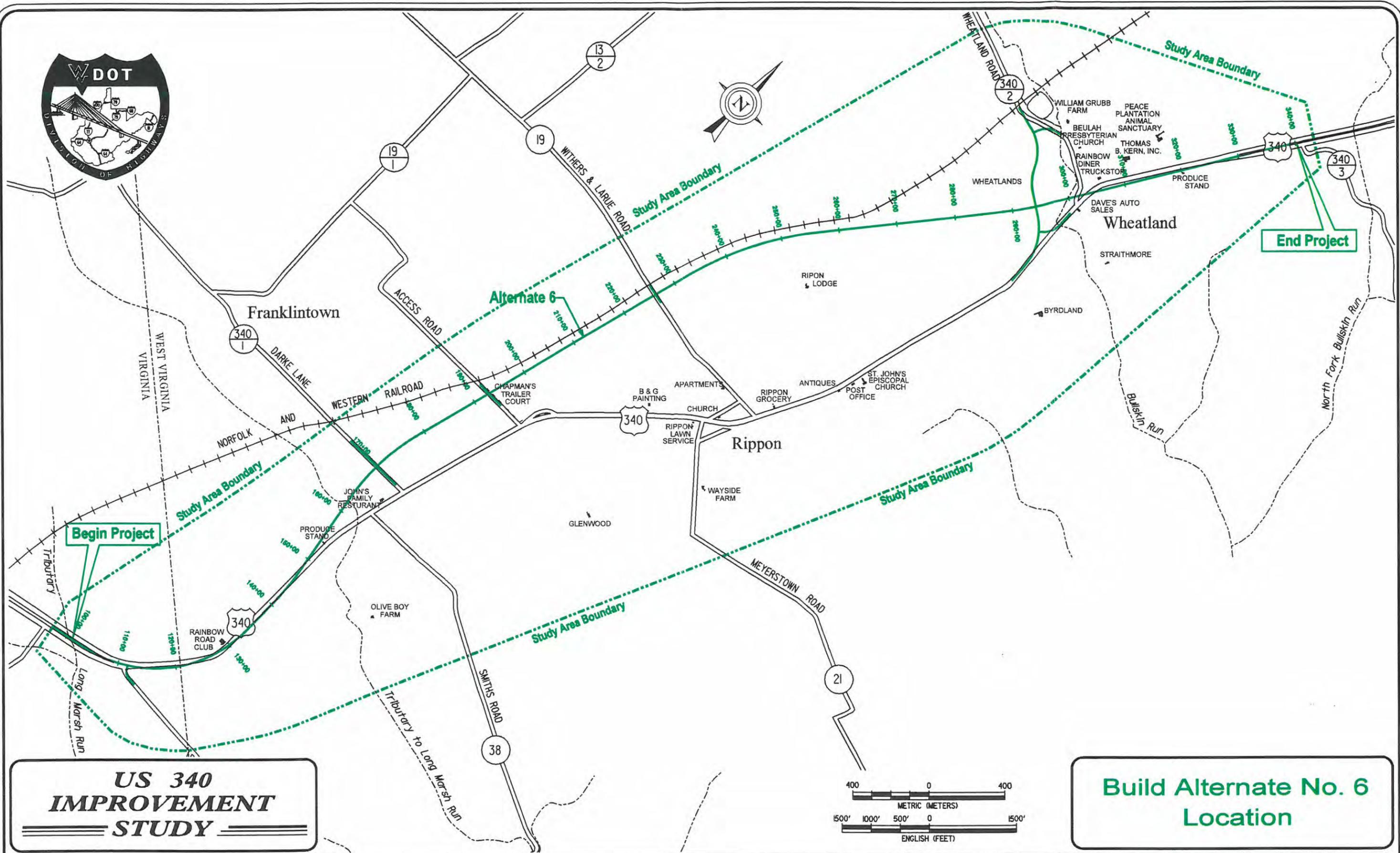
**Build Alternate No. 4  
Location**



**US 340  
IMPROVEMENT  
STUDY**



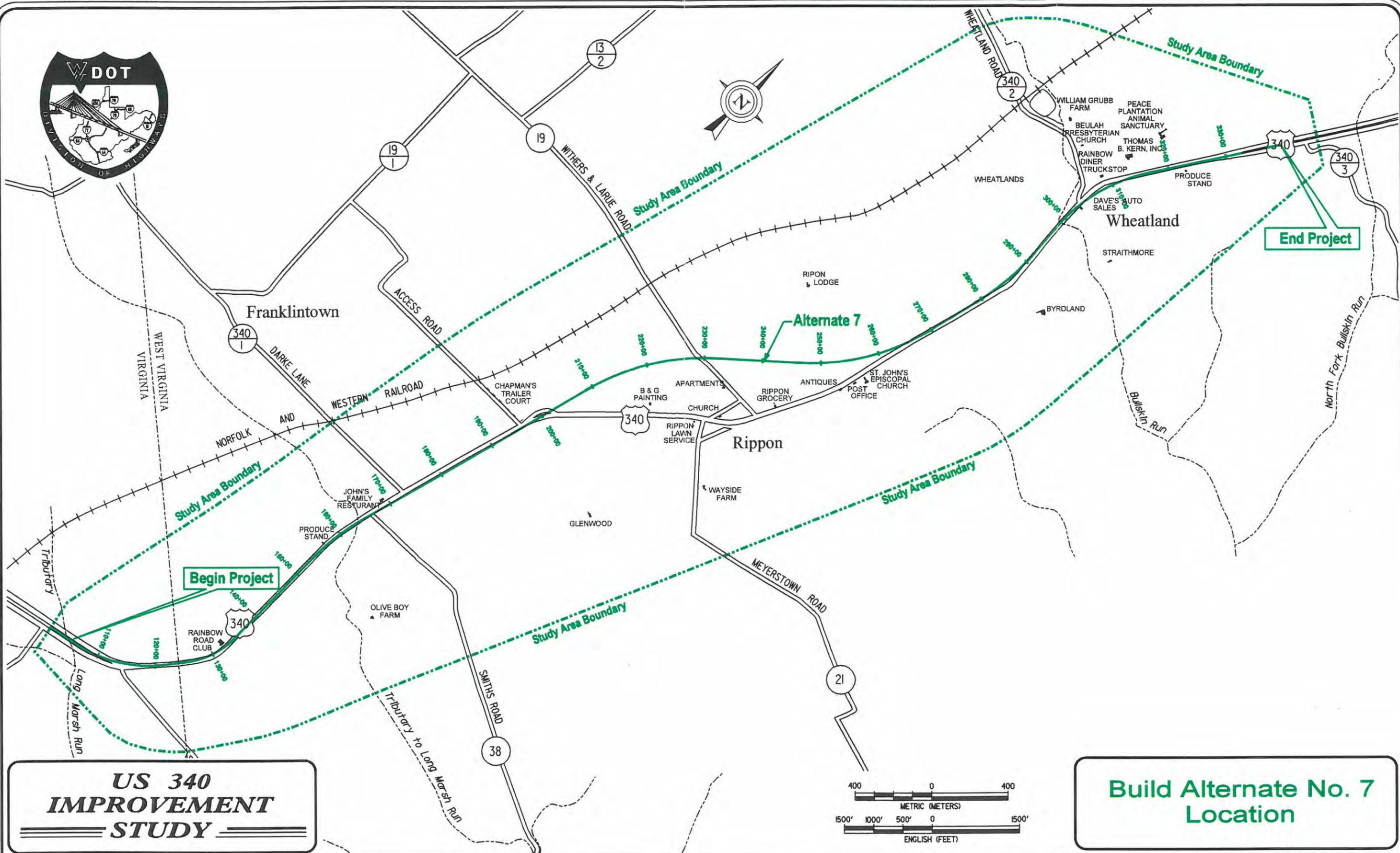
**Build Alternate No. 5  
Location**



**US 340  
IMPROVEMENT  
STUDY**

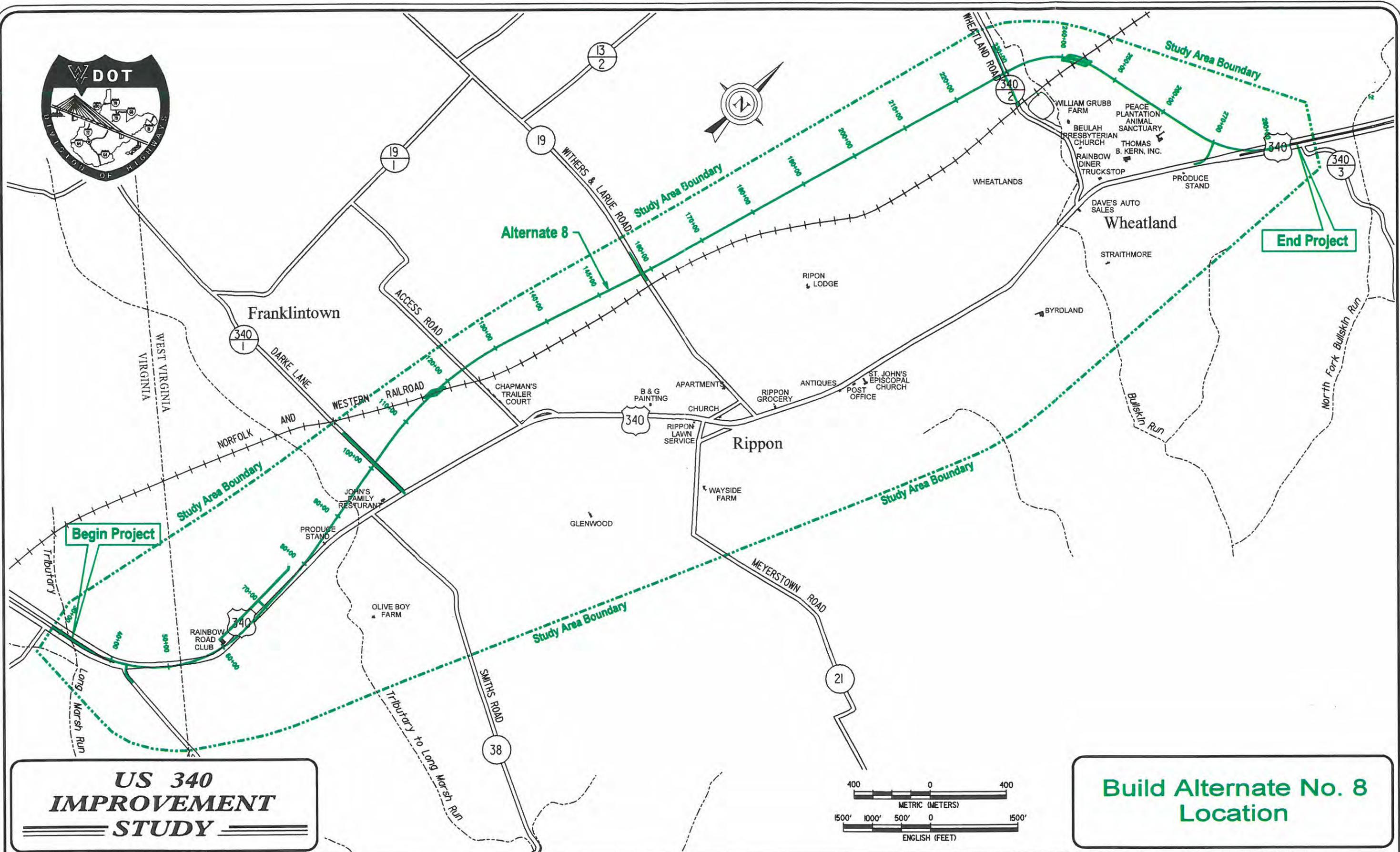
**Build Alternate No. 6  
Location**

Exhibit II-8



**US 340  
IMPROVEMENT  
STUDY**

**Build Alternate No. 7  
Location**



**US 340  
IMPROVEMENT  
STUDY**

**Build Alternate No. 8  
Location**

### **III. AFFECTED ENVIRONMENT**

This section provides a description of the existing social, economic, and natural environments of the area affected by the proposed alternates. The descriptions are general in nature and address the entire project area rather than providing a separate description of the area as it relates to each build alternate.

#### **A. Social Environment**

##### **1. Population and Growth Characteristics**

###### **a. Population Characteristics**

The 2000 US Bureau of Census was the source utilized for general population characteristics within the study area, the county, and the state. The project study area is located within Census Tract 9728, Block Groups 1 and 2. Block Group 9728-1 comprises the study area east of existing US 340 and Block Group 9728-2 comprises the study area west of existing US 340. Table III-1 provides information on population and ethnic composition for the two Block Groups along with the county and state information for comparison purposes.

Block Group 9728-1 contained approximately eight-percent minorities at the time of the 2000 Census survey. African Americans comprise approximately four percent of the population while American Indian, Eskimo, or Aleut and Hispanics each make-up a little over one percent of the total population in the Block Group. These minority percentages are close to the average minority percentages in Jefferson County and West Virginia. Based on the Block Group information and field observations, the majority of the residents of this area are White.

Minorities in Block Group 9728-2 make-up approximately eight-percent of the total population. African Americans comprise six percent, while Hispanics make-up one percent of the population. American Indian, Eskimo, or Aleut also comprise one percent. The African American population is the same and higher than the average percentages in Jefferson County and West Virginia,

respectively. In general, the community of Rippon appears to be predominantly white.

**TABLE III-1  
POPULATION CHARACTERISTICS**

<b>Race</b>	<b>Block Group 9728-1</b>		<b>Block Group 9728-2</b>		<b>Jefferson County</b>		<b>West Virginia</b>	
	<b>#</b>	<b>%</b>	<b>#</b>	<b>%</b>	<b>#</b>	<b>%</b>	<b>#</b>	<b>%</b>
White	1,417	92.2	2,169	91.8	38,400	90.7	1,718,777	95.2
Black	66	4.3	145	6.1	2,571	6.1	57,232	3.2
American Indian, Eskimo, or Aleut	17	1.1	8	0.3	120	0.3	3,606	0.2
Asian or Pacific Islander	8	0.5	13	0.5	269	0.6	9,834	0.5
Hispanic	21	1.4	25	1.1	734	1.7	12,729	0.7
Other	8	0.5	4	0.2	254	0.6	3,107	0.2
Total	1,537	100	2,364	100	42,348	100	1,804,835	100

Source: 2000 US Bureau of Census

Based on the 2000 US Census Data, the elderly comprise 10 percent of the population in Block Group 9728-1 and seven percent in Block Group 9728-2. This can be compared with an elderly percentage of 11 percent for Jefferson County and 15 percent for the State of West Virginia. There are no defined communities or areas composed primarily of elderly residents in the project study area.

**b. Growth Trends**

In Jefferson County the population has steadily increased since 1970 and population projections for Jefferson County indicate a continuation of growth. Conversely, the overall population of the State of West Virginia is projected

to decrease between 1990 and 2020. Jefferson County is considered part of the Washington Metropolitan Fringe as defined by the Greater Washington Research Center. Regarding this region, the Center states that during the 1990's, growth typically occurred where housing is most affordable. This means that growth may tend to favor outlying counties such as Jefferson County. Table III-2 provides population projections for Jefferson County and the state through the year 2020. These projections demonstrate that the population of Jefferson County is expected to continue to increase for several years while the population of the State of West Virginia is projected to decrease through the year 2020.

## **2. Land Use Planning**

In March 1967, the first planning commission for Jefferson County was selected. The planning commission consisted of 11 members, including two from each magisterial district and one county commissioner. Two citizen groups concerned with possible future growth from the Washington, DC metropolitan area petitioned the Jefferson County Commission to appoint this planning commission. The first Jefferson County Comprehensive Plan as well as the first subdivision Ordinance was adopted in June 1972. The first Zoning Plan for the County was defeated by referendum in 1976. A Citizen's Advisory Committee was formed in 1985 to help in the development of a comprehensive plan. This Comprehensive Plan was approved in 1986 and a Zoning and Development Review Ordinance was adopted in 1988.

The 1988 Comprehensive Zoning Ordinance and subsequent revisions have identified five zones within the County. These five zones are Residential-Growth District, Industrial-Commercial District, Rural-Agricultural District, Incorporated Towns, and Residential Growth-Light Industrial-Commercial. The Conditional Use Land Evaluation Site Assessment point evaluation system (LESA) was used as the basis for land use planning in Jefferson County. The LESA system takes into consideration the quality of land for agricultural purposes to aid in land use decision making.

Current land use in the project area encompasses agriculture, residential, and sparse commercial and industrial development. Within the project

study area, the zoning designations are rural-agricultural, residential growth-light industrial-commercial, industrial-commercial and the Rippon Village District. The

**TABLE III-2  
POPULATION PROJECTIONS**

	<b>Year</b>	<b>Total Population</b>	<b>Period</b>	<b>Rate of Change for Period</b>
Jefferson County <sup>1</sup>	1990	35,926		
	1995	39,321	1990-1995	+9%
	2000	42,571	1995-2000	+8%
	2005	45,688	2000-2005	+7%
	2010	48,652	2005-2010	+6%
	2015	51,500	2010-2015	+6%
	2020	54,247	2015-2020	+5%
West Virginia <sup>2</sup>	1990	1,793,477		
	1995	1,741,091	1990-1995	-3%
	2000	1,698,623	1995-2000	-2%
	2005	1,668,564	2000-2005	-2%
	2010	1,648,525	2005-2010	-1%
	2015	1,634,828	2010-2015	-1%
	2020	1,623,759	2015-2020	-1%

<sup>1</sup> Population Projections provided for Jefferson County consist of an average of three different projections: the Series A and Series M projections from the Regional Research Institute's "West Virginia Population Projections by County, Age and Sex, 1990-2020" (West Virginia University, July 1992), and the Jefferson County Planning Commission projections.

<sup>2</sup> Population Projections provided for the State of West Virginia consist of an average of the Series A and Series M projections from the Regional Research Institute.

Rippon Village District encompasses the community of Rippon, which is located near the intersections of Jefferson County 19 and Jefferson County 21 with US 340. South of the village district, west of US 340 and generally east of the Norfolk and Western Railroad, the area is designated as industrial-commercial. Generally north of Jefferson County 340/2, there is another area designated as industrial-commercial. Bordering this industrial-commercial area to the north, a residential growth-light industrial-commercial area has been designated. Outside of the immediate project area, land use bordering US 340 in Jefferson County includes incorporated towns, such as Charles Town, industrial-commercial districts, and residential growth districts. Exhibit I-7 shows the zoning designations for the project area.

### **3. Community Facilities and Services**

#### **a. Neighborhoods**

The project study area is generally rural in nature with several large farms scattered throughout. Two communities occur in the project area, Rippon and Wheatland. Rippon is generally centered around the intersection of US 340 and Jefferson County 19. Wheatland is located in the vicinity of the intersection of US 340 with Jefferson County 340/2.

#### **b. Utilities**

The communities and rural development within the study area are not serviced by public water supplies or sanitary sewer. It can generally be assumed that each residence has a water supply from a well or cistern and an on-site sewage disposal system. Electrical power in the study area is provided by Potomac Systems, while telephone service is provided by General Telephone Service.

Several single-family residences or businesses in close proximity, such as mobile home parks and some areas within Rippon, rely on a single water supply and/or sewage disposal system. The Rainbow Road Club has a non-community water supply that serves both the food establishment and a single-family residence. John's Country Kitchen also has a non-community water supply

that serves the food service establishment and several single-family homes. Rippon Mobile Home Park has a well that serves the entire park. The location of the sewage disposal service for the park is unknown. The Gunny Sack Retail Store has a well and sewage disposal system which serves the store and a single family home. Dave's Auto Service has a well and sewage disposal system which serves the auto service and an apartment located above. The Rainbow Diner Truck Stop/Rainbow Mobile Home Park has a non-community water supply that serves the food service establishment, the mobile home park and two single-family residences.

**c. Schools**

There are no schools located within the project study area. The study area lies within two elementary school districts. West of the Norfolk and Western Railroad, students attend the South Jefferson Elementary School. East of the railroad, Page Jackson Elementary covers grades K-3 and Wright Denny Elementary covers grades 4-6. The study area is within the Charles Town Junior High School district that covers grades 7-9. Jefferson County High School that is located near the middle of the county in between Charles Town and Sheperdstown serves all of Jefferson County.

**d. Emergency Services**

Law enforcement in Jefferson County is provided by the municipal police forces of Charles Town, Harpers Ferry/Bolivar, Ranson, Sheperdstown, and the countywide services of the State Police and the County Sheriff's Department. Municipal police may respond to emergencies outside of the jurisdiction based on urgency and the availability of other law enforcement personnel. Charles Town is the municipal police force closest to the project study area. Fire service for the study area is provided by the Citizen's Fire Company, Inc. located in Charles Town and the Independent Fire Company, Inc. located in Ranson. Emergency Medical Service is also provided by the Independent Fire Company, Inc. The nearest service providers located in Charles Town are approximately 4 miles (6.4 kilometers) north of the project study area.

**e. Other Community Facilities**

Other community facilities within the study area include three churches, one of which is abandoned, and a US Post Office which is located off of US 340, north of the community of Rippon. There are no libraries, parks, or recreation areas within the study area.

**4. Transportation Facilities**

**a. Railroads**

Rail access through the county is provided by the Norfolk and Western Railroad and the CSX Transportation System. The Norfolk and Western Railroad is oriented north-south through Jefferson County and is located along the western edge of the project study area. To the north, the railroad connects to Hagerstown, Maryland. To the south, the railroad extends to Front Royal, Virginia where it connects to the Virginia Inland Port. The CSX Transportation System has railroad facilities that extend from Harpers Ferry west through the county. The more southern route extends from Harpers Ferry southwest to Winchester, Virginia. The more northern route extends from Harpers Ferry to Martinsburg.

Commuter rail service is provided from Martinsburg to Washington, DC with stops at Duffields and Harpers Ferry by the Maryland Area Rail Commute (MARC). This program is supported by the Maryland Department of Transportation.

**b. Airports**

Air transportation in Jefferson County is provided by the Eastern West Virginia Regional Airport located in Martinsburg along WV 9, approximately 15 miles (24 kilometers) west of Charles Town. The airport's primary business is charter flights. The most frequently flown charter flight is to Charleston, West Virginia. The nearest large-scale airport is Dulles International. It is located in northern Virginia approximately 50 miles (80 kilometers) to the east of the study area. Air cargo service, domestic commercial service, and international air travel is available at this airport.

**c. Bus Service**

Commuter bus and rail services are part of the transportation network of Jefferson County. Public bus service is provided by the Eastern Panhandle Transit Authority (PanTran). PanTran serves the Martinsburg area and various areas throughout Berkeley and Jefferson Counties, utilizing US 340 north of the project area. Regular stops include Charles Town, Harpers Ferry, and Shepherdstown. In addition to regular stops, PanTran makes stops off the regular route if it has been requested in advance by a rider.

**B. Cultural Resources**

Historic properties and archaeological sites listed or eligible for listing in the National Register of Historic Places were identified in accordance with 36 CFR 800.4. Three properties within the project study area are listed on the National Register: the Long Marsh Run Rural Historic District, the Ripon Lodge, and the William Grubb Farm. An additional property, Balclutha, located at the state line between Virginia and West Virginia was listed in 1996 as a contributing property to the National Register listed Long Marsh Run Rural Historic District in Virginia. Balclutha is also listed on the Virginia Landmarks Register.

During the project study, a large rural area within and surrounding the project area was identified as a historic resource. This area is eligible for listing on the National Register as a historic district. The boundaries for this historic district, the Kabletown Rural Historic District, are shown on Exhibit III-1. Exhibit III-2 and Exhibit III-3 show the locations of the Kabletown Rural Historic District and the remaining cultural resources identified within the project area. These include the Village of Rippon Historic District, Olive Boy Farm, Glenwood, Wayside Farm, Byrdland, and Straithmore.

**1. Archaeological Sites**

There are no archaeological sites in the study area listed on the National Register of Historic Places. Based on distance to water, soil characteristics, and level of slope, it is estimated that approximately 65 percent of the study area has a high probability of containing archaeological sites while 20 percent has a medium

probability and 15 percent a low probability of containing archaeological sites. Paleoindian sites are likely to be rare in this study area. Early and Middle Archaic sites are likely to consist of lithic scatters. Hunting and resource procurement camps are likely to be present from all time periods.

Archaeological sites from the period of early settlement in the eighteenth century through the post-bellum period can be anticipated in the study area. There may be archaeological components associated with standing structures and along old roadbeds. Additionally, several Civil War skirmishes occurred in the study area and there may be remaining archaeological evidence of these conflicts.

The West Virginia Division of Culture and History reviewed and approved the “Phase I Cultural Resource Investigation Architectural Survey and Archaeological Assessment, Proposed Improvements to US 340 Jefferson County, West Virginia” and the “Predictive Model Addendum”. The archaeological assessment or predictive model was created to guide future archaeological research. In consultation with the West Virginia Department of Culture and History, the WVDOT determined that an archaeological survey of from five to seven percent of each of the high-probability, medium-probability, and low-probability areas within the selected alignments was needed to test the predictive model. The archaeological study window was confined to the Area of Potential Effect (APE), which was the construction limits of each corridor at approximately 300 feet in width. This predictive model was approved by the West Virginia Division of Culture and History, State Historic Preservation Officer (SHPO) on February 17, 1999.

The predictive model was tested and the findings reported in the “Archaeological Sample Survey Report” dated August 1999. Areas were selected randomly for survey to obtain adequate coverage of the corridors and to take advantage of the natural landforms. Approximately 40 acres were examined during the sample survey. The total acreage represents five percent of each of the three probability areas within each corridor. The survey and findings included in the report were concurred with by the SHPO with letters dated November 23, 1999 and December 7, 1999. All concurrence letters are included in the Appendix B.

The findings from the sample survey recorded seven sites. Of these seven, three were discovered within the Ripon Lodge Farm National Register property boundary, three were discovered on the property associated with the Wheatlands Farm, and one, an isolated find, was discovered in a low-probability area near the northern end of the project area. All three of the sites located in the Ripon Lodge Farm boundaries appear to be contributing elements to this National Register property. Only one of the three sites located on the Wheatlands Farm is considered eligible for the National Register as a historic archaeological site and requires further investigation. The isolated site located at the northern end of the project is not eligible for the National Register.

## **2. Historic Resources**

The West Virginia Division of Culture and History reviewed and approved the “Phase I Cultural Resource Investigation Architectural Survey and Archaeological Assessment, Proposed Improvements to US 340 Jefferson County, West Virginia”. This survey identified the historic resources within the Area of Potential Effect, the entire study area. Based on this survey an “Architectural Evaluation” was prepared to evaluate the historic properties and districts and determine which properties are eligible for listing on the National Register. The SHPO concurred with the eligible property and boundary recommendations made in the Architectural Evaluation on January 7, 2000.

The Ripon Lodge, located west of US 340 and just north of Rippon, was listed on the National Register of Historic Places in 1984. In addition to the main house, the property includes many nineteenth and early-twentieth century outbuildings. The National Register boundaries for this property were expanded in 1998 to include these significant outbuildings and parcel limits. The additional significant structures include a corncrib, a historic barn, two tenant houses, and several other outbuildings.

The William Grubb Farm is located on the north side of Wheatland Road, west of US 340. The house was constructed circa 1763. The property was listed on the National Register of Historic Places in 1991.

The Balclutha property is partially located in Clarke County, Virginia. It is listed on the National Register and the Virginia Landmarks Register as a contributing resource in the Long Marsh Run National Register Rural Historic District of Clarke County, Virginia. The district encompasses roughly 16 square miles (4,000 hectares) and is noted for its remarkably unaltered and picturesque rural land in north central Clarke County. The Balclutha property appears to have been developed circa 1840 for William T. Allen, son of David Hume Allen of Clifton. The property is in excellent condition according to the Phase I Architectural Reconnaissance Survey completed for the project.

The Kabletown Rural Historic District is eligible for listing on the National Register. This rural district encompasses approximately 18 square miles (4,500 hectares). The district boundaries are generally defined by the West Virginia State line to the south, the Kabletown magisterial district to the north, the Shenandoah River to the east, and existing US 340 to the west until the Village of Rippon where the boundaries roughly follow the railroad tracks. These boundaries incorporate an agricultural landscape and architectural resources that are distinctively rural. Within this district are numerous large antebellum and postbellum estates, several smaller 19<sup>th</sup> century and early 20<sup>th</sup> century farms, and four rural communities – Meyerstown, Kabletown, Wheatland, and Rippon. The Village of Rippon Historic District, Olive Boy Farm, Glenwood, Wayside Farm, Byrdland, and Straithmore in addition to their individual eligibility are also contributing elements to the Kabletown Rural Historic District.

The Village of Rippon Historic District is located at the crossing of Jefferson County 19 and US 340. The Village of Rippon includes thirty-two properties which together comprise an eligible historic district. These properties include several stores, a school, two churches, a grain elevator, a warehouse, a parish hall, and twenty-two dwellings.

Olive Boy Farm is located off of Jefferson County 38, east of US 340. The Italianate style, brick house is believed to have been constructed by Dr. Blackburn in the 1840's. Several outbuildings, including kitchen/slave quarters, a springhouse, a barn and a tenant house, are also located on the property.

Glenwood is located south of the community of Rippon on the east side of US 340. This house is believed to have been constructed in 1844 by Charles Sinclair Taylor. It includes several architectural styles including Georgian, Federal, and Greek Revival.

The Wayside Farm property is located on the north side of Jefferson County 21, near Rippon. The earliest portion of the Federal-style house was constructed circa 1816 with later additions circa 1829 and 1880. Several significant outbuildings are also located on the property. Additionally, a small Civil War calvary incident occurred at the Wayside Farm location in 1864.

Byrdland is located on the east side of US 340, north of Rippon. The date of construction is believed to be around 1830-1850. The large log I-house has undergone very little alteration and along with the numerous outbuildings is one of the most intact farm complexes in the area.

Straithmore is located on the east side of US 340 near Wheatland. The Federal-style house was built circa 1827. Several historic outbuildings are also at Straithmore.

## **C. Economic Environment**

The economic information for areas smaller than the state was not available from the 2000 US Census Bureau. For comparison purposes, all of the economic information and statistics for the state, county, and census tracts in this section were obtained from the 1990 US Census Data.

### **1. Labor Force and Employment**

Jefferson County's unemployment rates are relatively low compared with the State of West Virginia and the nation. Within the last two decades, the rate has only gone above 8 percent in four years. At one point, the rate was as low as 2.9 percent. In 1994, the rate was approximately 5.5 percent. A large percentage of Jefferson County's work force is employed outside of the County. In 1980, 59 percent of the working residents of Jefferson County worked within the County. By 1990, this number had decreased to 51 percent. Table III-3 presents the labor

force status for Jefferson County and the State of West Virginia for persons 16 years and older. Table III-4 provides the occupation types for the county and state.

**TABLE III-3  
LABOR FORCE STATUS (PERSONS 16 YEARS AND OLDER)**

	1980	1990	
	Jefferson County	Jefferson County	State of West Virginia
Armed Forces	12	20	1,805
Employed	12,297	17,631	671,085
Unemployed	1,002	889	71,142
Not in Labor Force	9,175	9,211	660,868
Unemployment Rate	7.2	4.8	9.6

**2. Income Ranges**

Census data splits income ranges into two categories: family household income and household income. Family household income includes a householder and one or more persons living in the household who are related to the household by birth, marriage or adoption. A household may contain a group of unrelated persons or a person living alone. Table III-5 shows the income ranges and the median household and family incomes for the project area and the State of West Virginia.

According to the 1990 Census, the median household income within the project area varies from a low of \$25,750 in Census Tract 9728-2 to a high of \$34,904 in Census Tract 9728-1. In comparison, the median household income is \$30,941 in Jefferson County, \$20,795 in the State of West Virginia, and \$30,056 in the United States.

**TABLE III-4  
OCCUPATIONS**

Occupation	Jefferson County - 1990		State of West Virginia - 1990		Census Tract 9728-1		Census Tract 9728-2	
	#	%	#	%	#	%	#	%
Managerial and Professional Specialty Occupations	3,873	22.0	147,672	22.0	100	18.9	166	19.3
Technical, Sales, Administrative Support Occupations	4,790	27.1	193,291	28.8	135	25.5	200	23.3
Service Occupations	2,414	13.7	94,796	14.1	61	11.5	95	11.1
Farming, Forestry, and Fishing Occupations	954	5.4	13,686	2.1	86	16.2	74	8.6
Precision Production, Craft, and Repair Occupations	2,676	15.2	97,468	14.5	70	13.2	111	12.9
Operators, Fabricators, and Laborers	2,924	16.6	124,172	18.5	78	14.7	213	24.8
Total	17,631	100	671,085	100	530	100	859	100

Source: 1990 US Bureau of Census

**TABLE III-5  
INCOME CHARACTERISTICS**

<b>Income Range</b>	<b>Census Tract 9728-1</b>	<b>Census Tract 9728-2</b>	<b>Jefferson County</b>	<b>West Virginia</b>
less than \$5,000	12	24	596	73,017
\$5,000 to \$9,999	7	78	1,087	95,610
\$10,000 to \$14,999	40	62	1,242	88,178
\$15,000 to \$24,999	45	123	2,107	141,362
\$25,000 to \$34,999	64	86	2,238	103,944
\$35,000 to \$49,999	75	71	2,778	100,567
\$50,000 to \$74,999	61	87	1,879	62,048
\$75,000 to \$99,999	26	46	524	13,414
over \$100,000	5	42	390	10,587
Median Household Income	\$34,904	\$25,750	\$30,941	\$20,795
Median Family Income	\$38,015	\$27,034	\$34,887	\$25,602
Percent of Families Below the Poverty Line	8.4%	7.9%	8.0%	16%

Source: 1990 US Bureau of Census

The 1990 Census data indicates that the median family household income within the project area ranges from a low of \$27,034 in Census Tract 9728-2 to a high of \$38,015 in Census Tract 9728-1. Other median family incomes include \$34,034 in Jefferson County, \$25,602 in the State of West Virginia, and \$35,225 in the United States.

The median incomes of households and families within the two census blocks encompassing the project area are higher than those for the state overall. The percent of families below the poverty line (1997 family of four poverty guideline - \$16,050) is nearly half of the percentage for the state overall. Based on field observations, the majority of the potential relocations appear to be of moderate-income levels.

**3. Housing Characteristics**

Table III-6 provides general information on the housing characteristics of the study area, the county, and the state based on 1990 and 2000 US Census Data. The majority of the housing units within the study area are single-family homes or mobile homes. Very few multi-family structures exist within the vicinity of the project. Most housing units within the study area have two to three bedrooms, which is comparable with Jefferson County and the State of West Virginia averages. The median age of structures within the study area is approximately 25 years. The median age does not reflect the distribution of when the structures were built. In Census Block 9728-1, 20 percent of the structures were constructed prior to 1939, 7.5 percent were constructed between 1940 and 1969, and 72.5 percent were constructed between 1970 and 1990. For Census Block 9728-2, 46.9 percent were constructed prior to 1939, 7.8 percent were constructed between 1940 and 1969, and 45.3 percent were constructed between 1970 and 1990. For Jefferson County, 21.8 percent of the structures were built prior to 1939, 21.6 percent were built between 1940 and 1969, and 56.6 percent were constructed between 1970 and 1989. For West Virginia, 23.7 percent of the structures were built prior to 1939, 35.8 percent were constructed between 1940 and 1969, and 40.5 percent were constructed between 1970 and 1989.

**TABLE III-6  
HOUSEHOLD CHARACTERISTICS**

<b>Characteristic</b>	<b>Census Tract 9728-1</b>	<b>Census Tract 9728-2</b>	<b>Jefferson County</b>	<b>West Virginia</b>
Median Persons per Household	2.71	2.75	2.54	2.40
*Median Mortgage Payment	\$750	\$593	\$627	\$498
*Median Monthly Rent	\$658	\$425	\$376	\$303
Percent Owner Occupied	87.2%	86.2%	78.2%	77.5%
*Median Year Structure Built	1973	1971	1972	1962

Source: 2000 US Census Bureau \*1990 US Census Bureau (2000 data not available)

## D. Natural Environment

### 1. Biotic Resources

The project study area is generally agricultural in nature with little land remaining in native vegetation. Native vegetation generally remains only along fencelines and the streams within the project area.

Deer (*Odocoileus virginianus*) and a variety of small mammals such as raccoons (*Procyon lotor*), gray squirrels (*Sciurus carolinensis*), opossums (*Didelphis virginiana*), skunks (*Mephitis mephitis*), mice (*Peromyscus spp.*), shrews (*Sorex spp.*) and moles (*Scalopus aquaticus*) are likely to exist within the project study area. A variety of birds are also likely to be seen in the area including warblers (*Dendroica spp.*), sparrows (*Ammodramus spp.*, *Ammospiza spp.*, *Spizella spp.*) woodpeckers (*Dryocopus pileatus*, *Melanerpes spp.*, *Picoides spp.*), vireos (*Vireo spp.*), ovenbirds (*Seiurus spp.*), thrushes (*Hylocichla mustelina*, *Catharus spp.*), blackbirds (*Agelaius phoeniceus*, *Euphagus carolinus*), grackles (*Quiscalus spp.*), and starlings (*Sturnus vulgaris*). Reptiles which may occur in the study area include rattlesnakes (*Sistrurus miliarius*, *Crotalus spp.*), garter snakes (*Thamnophis spp.*), rat snakes (*Elaphe spp.*), water snakes (*Nerodia spp.*), and copperheads (*Agkistrodon contortrix*), box turtles (*Terrepenne carolina*), and painted turtles (*Chrysemys picta*). Common amphibians such as toads (*Bufo spp.*) and frogs (*Hyla spp.*, *Acris spp.*, *Pseudocris spp.*, *Rana spp.*) can also be expected.

### 2. Physical Resources

#### a. Soils

The Soil Survey of Jefferson County, West Virginia identifies two general soil associations in the project study area. The Duffield-Frankstown association, which covers the majority of the study area, consists of deep, medium-textured, dominantly nearly level to strongly sloping soils formed in material weathered from limestone and limy shale; on uplands. The Hagerstown-Frederick-Huntington, local alluvium association occurs mainly to the west of the study area with a small portion extending into the northwestern edge of the study area. This association consists of deep, medium-textured and moderately fine-textured,

dominantly nearly level to moderately steep soils formed in material weathered from limestone; on uplands and along drainageways.

The Soil Survey of Clarke County, Virginia also identifies two general soil associations within the project study area. The Pomplimento-Timberville soil association occurs on uplands and consists of deep, well-drained soils that have a clayey or loamy subsoil and formed in materials weathered from interbedded limestone, shale, and siltstone or colluvium. The Pomplimento-Webbtown-Timberville association consists of deep or moderately deep, well-drained soils that have a clayey or loamy subsoil and formed in materials weathered from interbedded limestone, shale, and siltstone or colluvium and occurs in uplands.

Specific soil types which occur in the project area are Hagerstown silt loam, Hagerstown silty clay loam, Hagerstown and Frederick cherty silt loams, Hagerstown and Frederick very rocky silt loams, Hagerstown and Frederick cherty silty clay loams, Hagerstown and Frederick very rocky silty clay loams, Huntington silt loam, Duffield silt loam, Alluvial land-marl substratum, Frankstown shaly silt loam, and Lindside silt loam within West Virginia. The specific soil types which occur within the project area of West Virginia include Timberville silt loam, Pomplimento-Webbtown Complex-rocky, Pomplimento-Webbtown Complex, Pomplimento silt loam-rocky, and Pomplimento-Rock Outcrop Complex.

**b. Agricultural District**

The Clarke County Agricultural District is located near the beginning of the project in Clarke County, Virginia. If the acquisition of land from this district is in excess of one acre from any one parcel or in excess of ten acres from the entire district, a notice of intent must be filed at least 30 days prior with local authorities (Code of Virginia 15.1-1512). One 17.82-acre parcel within this district is adjacent to the project.

**c. Water Resources**

The North Fork of Bullskin Run, Bullskin Run, Long Marsh Run, and two unnamed tributaries of Long Marsh Run drain the project study area. These streams flow generally southeast into the Shenandoah River.

Three excavated ponds have been identified within the project vicinity. Pond #1 is located on the north side of Jefferson County 21. Pond #2 is located on the east side of Jefferson County 21 which turns in a northerly direction east of Pond #1. Pond #3 is located on the south side of Access Road, east of the railroad tracks.

*Springs of West Virginia* is a manuscript that identifies the locations of springs throughout the state and gives the characteristics of each spring. A literature search of this book identified three springs within the study area boundary. Lippett Springs on Olive Boy Farm is located along the second unnamed tributary of Long Marsh Run. This spring discharges 140 gallons of water per minute at a constant temperature of 54.0 degrees Fahrenheit. The Henry Baker Farm Spring and the Joseph Bell Farm Spring are located along Bullskin Run. The Henry Baker Farm spring lies west of US 340 and the Joseph Bell Farm spring lies adjacent to the east side of US 340. The Henry Baker Farm spring discharges 160 gallons per minute at a temperature of 54 degrees Fahrenheit. The Joseph Bell Farm spring discharges 520 gallons per minute at a temperature of 53 degrees Fahrenheit.

**3. Water Quality**

The West Virginia Division of Environmental Protection, Office of Water Resources was contacted for information on water quality within the project area. All streams in the study area are designated as Category B Waters. Category B Waters are for the propagation and maintenance of fish and other aquatic life. There are also subcategorizations within Category B. Bullskin Run and Long Marsh Run are considered to be in Category B2, Trout Waters. The two tributaries of Long Marsh Run have intermittent flow and do not meet the definition of Trout Waters. These streams fall under Category B3, small, non-fishable streams. The West Virginia 1996 303(d) Stream List was obtained. Included on this list are

streams that are considered water quality limited waters and are less than fully supporting of their designated use category. Streams which may be less than fully supporting were not included on this list if the assessment was made based upon limited data (i.e. best professional judgment, citizen collected data, monitoring data greater than five years old, or cursory monitoring data). None of the streams within the project study area appear on this list. This means that these streams are generally considered to be in support of their use.

Water quality monitoring stations have been identified within the project vicinity. However, no recent monitoring data was available at these locations. One water quality monitoring station is located within the project study area along Bullskin Run, approximately 1/4 mile (0.4 kilometers) west of the existing US 340. Three additional monitoring stations are located east of the existing US 340, within approximately two miles (3.2 kilometers), along Long Marsh Run and a tributary of Long Marsh Run. The most recent data from these monitoring stations along Long Marsh Run or its tributary are from 1989. The most recent data for the Bullskin Run monitoring station is from 1988.

The West Virginia Water Quality Status Assessment 1991-1993 305(b) Report states that due to the rural nature of the state, ground water remains abundant and of adequate quality. Two major types of aquifers exist in West Virginia: unconsolidated alluvial deposits and sedimentary bedrock. Ordovician and Cambrian age sedimentary bedrock aquifers consisting of sandstone, shale, and limestone underlie the majority of Jefferson County.

#### **4. Visual Characteristics**

##### **a. Existing Visual Environment**

Jefferson County, West Virginia is located in two geologic provinces, the Blue Ridge Province and the Great Limestone Valley of the Ridge and Valley Province. The project area lies within the Ridge and Valley Province, specifically in the Shenandoah Valley. The study area is underlain by extensive limestone outcrops, giving way to rolling hills with exposed rock outcrops. The foothills of the Blue Ridge Mountains are visible in the distance. Elevations in the

immediate project area vary between 450 feet (137 meters) above mean sea level and 580 feet (177 meters) above mean sea level.

Although most of the area has been cleared for agriculture, some natural vegetation still exists. Deciduous trees and some evergreen trees are present throughout the project area, primarily along fencelines. Seasonal vegetation exists on farmed lands in the form of row crops. Fruit orchards also occur within the project vicinity.

Throughout the project area, the landscape has been altered by development. Lands bordering US 340 have been cleared for row crops, orchards, livestock grazing, and light residential and commercial development. The Norfolk and Western Railroad parallels US 340 to the west. Above ground utility lines are located throughout the area. There are seven billboards along the existing roadway in the project area.

The study area is rural with sporadic development concentrated around the communities of Rippon and Wheatland. Development consists mainly of residential properties and farm complexes. Some commercial properties exist along the project area, consisting of a few restaurants and small businesses.

Approaching the project area from the south, US 340 is a four-lane divided facility. Prior to crossing into West Virginia, the four-lane roadway transitions to a two-lane facility. Continuing north on US 340, travelers pass the Rainbow Road Club, a seasonal produce stand, John's Family Restaurant, Chapman's Trailer Park, and B & G Painting. Along US 340 in the community of Rippon are private residences, a church, old storage buildings, the Rippon Grocery, an antique store, the Rippon Post Office, St. John's Episcopal Church, and the entrance to the historic Ripon Lodge. Development immediately north of Rippon is sparse and consists of single-family homes and farms. As US 340 continues north, it passes through the community of Wheatland where Dave's Auto Service, the Rainbow Diner Truck Stop, Thomas B. Kern, Inc., and a seasonal produce stand are located adjacent to the road. Leaving the project area, the two-lane US 340

transitions back to a four-lane facility and continues north through Jefferson County.

**b. Visual Quality**

The introduction of any large facility in an area alters the local perception of the visual environment. A location may be deemed visually sensitive for its visual quality, uniqueness, cultural importance, and viewer characteristics. According to Federal Highway Administration Guidelines, high visual quality is obtained when area landscape components have impressive characteristics that convey visual excellence. Striking landscapes are not limited to the natural environment and can be associated with urban areas as well. Visual quality is subjective in that it is also determined by a viewer's perception of an area.

A field review was conducted in order to investigate the area for its overall visual quality. The review did not yield any significant findings of special or unique natural areas, officially designated recreation areas, or officially designated scenic overlooks within the immediate project area. The open fields and rolling terrain are characteristic for much of Jefferson County. US 340 throughout the county has been identified in the Jefferson County Comprehensive Plan by the Jefferson County Parks and Recreation Commission as a scenic route due to its historical significance and scenic quality for various points along the roadway. However, no publicly accessible historic sites are located within the project area. Two historic districts and several private historic properties do exist within the project area. These properties were investigated further for their visual sensitivity.

**c. Visually Sensitive Resources**

Several visually sensitive resources are identified within the project area. These resources are identified in the *Phase I Cultural Resource Investigation* as having historic value and are either on or determined eligible for listing on the National Register of Historic Places. These historic resources include Kabletown Rural Historic District, Village of Rippon Historic District, Balclutha, Olive Boy Farm, Glenwood, Wayside Farm, the Village of Rippon, the Ripon Lodge, Byrdland, Straithmore, and the William Grubb Farm.

**1) Long Marsh Run Rural Historic District**

The Long Marsh Run Rural Historic District is located at the south end of the project, east and west of US 340 in Clarke County, Virginia. This rural historic district is listed on the National Register of Historic Places. The district encompasses roughly 16 square miles (41 square kilometers) and is noted for its remarkably unaltered and picturesque rural land in north central Clarke County.

**2) Kabletown Rural Historic District**

The Kabletown Rural Historic District is characterized by rich well-drained limestone soils over rolling terrain with several springs and two fairly large streams – Long Marsh Run and Bullskin Run. The combination of hills and open land interspersed with forestland as well as the dramatic eastern backdrop of the Blue Ridge Mountains provides many varied and spectacular vistas of a true rural countryside. These natural landscape elements are further complimented by cultural features such as farms, crossroads, roadbeds, tree lines, hedgerows, field patterns and fences. The Kabletown Rural Historic District is eligible for listing on the National Register as a rural historic district.

**3) Village of Rippon**

A large portion of the Village of Rippon is eligible for the National Register as a historic district. The village includes several stores, a school, a church, a grain elevator, a warehouse, a parish hall, and 22 dwellings. The majority of these buildings date to the late-nineteenth and early-twentieth century.

**4) Balclutha**

The Balclutha property is located at the south end of the project, north and west of US 340. The property is located in both Virginia and West Virginia. Balclutha consists of a house, garage, meathouse, and two barns that date to the 1840's. Although not listed on the National Register of Historic Places, this property has been determined to be a contributing element to the Long Marsh Run Rural Historic District in Virginia. The Long Marsh Run Rural Historic

District is noted for its remarkably unaltered and picturesque rural land in north central Clarke County and is listed on the Virginia Landmarks Register and the National Register of Historic Places. Currently the house is used as a private residence.

The main residence is situated on a hill at an elevation of 577 feet (176 meters) above mean sea level. Looking east towards the existing roadway and proposed alternate locations, the view of the roadway is somewhat obstructed by rolling terrain, generally sloping toward the existing roadway. Elevations between the house and roadway vary as much as 40 feet (12 meters) with the peak elevation being 565 feet (172 meters) above mean sea level.

**5) Olive Boy Farm**

The Olive Boy Farm is located along Jefferson County Jefferson County 38 (Smith Road), east of existing US 340. This Italianate style house is believed to have been constructed in the 1840's. In addition to the main house, there are several outbuildings including a kitchen/slave quarters, springhouse, barn, and tenant house. A family cemetery dating to the 1850's is also located on this farm. This property is eligible for inclusion on the National Register of Historic Places for its architectural and historic value.

The main residence is at an elevation of 500 feet (152 meters) above mean sea level. To the west, the topography varies slightly and gently slopes down towards a tributary to Long Marsh Branch and gradually rises back up to existing US 340. To the east, the topography generally slopes down from 500 feet (152 meters) above mean sea level to 475 feet (144 meters) above mean sea level. Looking east from the back of the house, the viewshed includes a tributary to Long Marsh Run and pastures.

**6) Glenwood**

Glenwood is located south of the community of Rippon on the east side of US 340. The property consists of a main residence and several outbuildings, dating back to 1844. The Glenwood property is eligible for inclusion on the National Register of Historic Places.

The Glenwood property is at an elevation of approximately 500 feet (150 meters) above mean sea level. Looking west from the front yard of Glenwood, the terrain varies in elevation by about 10 feet (3 meters). A clear view of existing US 340 is obstructed by trees and shrubs. Looking east, the terrain levels out and mountains are present in the background.

**7) Wayside Farm**

The Wayside Farm main residence was originally built in 1816 with later additions in 1829 and 1880. Other buildings located on the farm are a meathouse, stone milk house, early to mid-nineteenth century log slave quarters/kitchen, a late-nineteenth century timber-framed bank barn on a stone foundation, a late-nineteenth century corncrib, a frame workshop dating to about 1900, and a modern chicken coop. This property is eligible for inclusion on the National Register of Historic Places.

The main residence is at an elevation of approximately 500 feet (150 meters) above mean sea level and faces southwest. The existing US 340 is approximately 1,100 feet (335 meters) west of Wayside Farm.

**8) Ripon Lodge**

The Ripon Lodge is one of the most prominent properties within the area. The lodge dates back to 1833. The lodge was placed on the National Register of Historic Places in 1984. The property also has many nineteenth and early-twentieth century outbuildings. In 1998 the National Register boundaries for this property were expanded to include these significant outbuildings. This historic property is used as a private residence.

The Ripon Lodge is situated at an elevation of about 540 feet (165 meters) above mean sea level. The surrounding landscape consists of gentle hills, with variations in elevation of about 5 feet (1.5 meters), and planted trees and shrubs. Surrounding land is used for grazing livestock and other agricultural purposes.

**9) Byrdland**

This historic property was constructed between 1830 and 1850. The property consists of a large I-house of log construction with stucco cladding and many outbuildings that date the late 1800's and early 1900's. The main house has undergone very little alteration. This property is eligible for listing on the National Register for its architectural and historical importance.

The Byrdland property is located on a hill surrounded by mature trees. The main residence is situated at an elevation of about 525 feet (160 meters) above mean sea level and faces west towards the existing US 340. It is approximately 750 feet (230 meters) east of the existing roadway. However, US 340 is barely visible due to varying elevations and existing vegetation.

**10) Straithmore**

Straithmore is a Federal-style house and is believed to have been constructed in 1827. Also located on the property are the ruins of a stone mill and other stone and wood remnants from various outbuildings. The house faces west and is situated on top of a hill that grades down to Bullskin Run Creek. The house is at an elevation of about 510 feet (155 meters) above mean sea level. US 340 currently lies about 1,150 feet (350 meters) west of the main house. The topography between the house and the roadway varies in elevation. This undulating terrain makes it difficult, if not impossible, to see the existing roadway. This property is eligible for inclusion on the National Register of Historic Places.

**11) William Grubb Farm**

This farmhouse dates back to 1763 with additions throughout the house's existence. The house is a rare vernacular building type that combines a stone end with log construction. A barn with a silo, a corncrib, a well house, a chicken coop, and a studio are included on the property. The William Grubb Farm was placed on the National Register in 1991.

From the front of the main house, the existing US 340 is not visible because of the natural topography and vegetation. The house sits at an

approximate elevation of 490 feet (150 meters). Elevations vary from the house to the roadway by about 30 feet (9 meters).

## **5. Farmland**

Soils are rated for their potential to produce crops. Those soils best suited for producing food, feed, fiber, forage and oilseed crops are known as Prime Farmlands. State and Locally Important Farmlands are those soils with seasonal wetness, erosion, or droughtiness. These factors may limit their suitability for some crops but these soils can still produce moderate to high yields of adaptable crops with modern farming methods. A third category consists of Other Lands, soils that are not suited for crop production without extensive management inputs. Other Lands include water storage and urban and built-up areas as well as areas that have been zoned by a local planning authority to be something other than agricultural or silvicultural.

## **6. Wetlands**

Wetlands are protected resources under Section 404 of the Federal Water Pollution Control Act, more commonly known as the Clean Water Act. Wetlands provide valuable habitat for fish and wildlife, may support rare and endangered species, have high primary productivity, improve water quality, and regulate storm flow.

The definition of wetlands used in this study is contained in the January 1987 US Army Corps of Engineers, *Wetlands Delineation Manual*. Wetland areas are defined as:

Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

National Wetlands Inventory (NWI) mapping was initially used to identify wetlands within the study area. The NWI mapping indicated two artificially impounded freshwater ponds and wetlands associated with Bullskin Run and the

unnamed tributary of Long Marsh Run. The two freshwater ponds were classified by the NWI as Palustrine, open water, intermittently exposed/permanent, impounded. The NWI classifications for the wetlands associated with the two streams are Palustrine, emergent, persistent, temporarily flooded; Palustrine, scrub-shrub, broad-leaved deciduous/emergent, persistent, temporarily flooded; Palustrine, scrub-shrub, broad-leaved deciduous/emergent, persistent, seasonally flooded; and Palustrine, forested/scrub-shrub, broad-leaved deciduous, temporarily flooded. These wetlands are part of a continuous connected stream system associated with Bullskin Run and a tributary to Long Marsh Run.

## **7. Rare and Protected Species**

Under federal law, any action which is likely to result in a negative impact to federally protected plants or animals is subject to review by the US Fish and Wildlife Service (USFWS), under one or more provisions of the Endangered Species Act (ESA) of 1973. Even in the absence of federal actions, the USFWS has the power, through Section 9 of the ESA, to exercise jurisdiction on behalf of a protected plant or animal.

According to coordination with the US Fish and Wildlife Service, the Indiana bat (*Myotis sodalis*) could exist in the project area. A biological assessment was prepared for this endangered species and is documented in the “Biological Assessment for the Indiana Bat – US 340 Improvements Study Jefferson County, West Virginia”. The Indiana bat was officially listed as an endangered species on March 11, 1967. The Indiana bat is a small brown bat with a wingspan of approximately 9.5 to 10.5 inches (240 to 265 cm). During hibernation Indiana bats congregate in more densely packed clusters than other bats in its range.

Caves are important habitat for the bat. During the winter, large numbers of Indiana bat gather in caves with suitable conditions for hibernation. There also may be a correlation between the potential for finding the Indiana bat in the study area and the availability of roosting structures. Foraging habitats used by the Indiana bats include riparian and floodplain forest. Upland forest and old pastures with scattered trees have also been shown to be used as foraging habitats. The habitat suitability index model developed for the Indiana bat indicates that

suitable canopy cover ranges from 25 percent to 80 percent with optimal coverage ranging from 60 to 80 percent.

The USFWS has identified 27 caves in the limestone regions of West Virginia where the Indiana bat hibernates. The seven West Virginia counties with these hibernacula do not include Jefferson County. The only “critical habitat” designated within West Virginia for the Indiana bat is an area called Hellhole Cave, which is located approximately 90 miles from existing US 340 in Pendleton County.

No other federally listed or proposed threatened and endangered species are known to exist in the project area with the exception of the loggerhead shrike (*Lanius ludovicianus*), a species of concern. The West Virginia Division of Natural Resources was also contacted for information on rare and protected species that may occur in the study area. The only record within the vicinity of the project is of a loggerhead shrike (*Lanius ludovicianus*) nest at the intersection of Jefferson County 19 and Jefferson County 13/2, west of the study area.

The loggerhead shrike typically occupies closely grazed pastures with scattered shrubs and trees. Shrubs and trees along fencelines are often used for perching, nesting, and roosting. The loggerhead shrike feeds chiefly on invertebrates.

## **8. Air Quality**

The air quality analysis was performed in accordance with Title 23, Code of Federal Regulations (CFR), Part 770. The principal air pollutants of automotive emissions are Carbon Monoxide (CO), Hydrocarbons (HC), and Nitrogen Oxides (NO<sub>x</sub>). Other pollutants, such as sulfur dioxide and particulates, are produced to a lesser degree. A wide range of photochemical oxidants (ozone) also result through a complex series of light-induced reactions between emitted hydrocarbons and nitrous oxides. Jefferson County is in compliance with the National Ambient Air Quality Standards and is in attainment for air quality.

Highway vehicles are considered to be the major source of CO in the project area. For this reason, and because CO is a relatively non-reactive

pollutant, CO was used in the analysis as an indicator of the air pollutants produced by traffic activities on the proposed roadway.

In order to evaluate the future air quality effects of the proposed project, CO projections were made at selected sensitive sites adjacent to the proposed alignments for specified years. The CO concentrations were determined using a line source model, and adding to it a background component. The resultant CO projections were then assessed against the National Ambient Air Quality Standards (NAAQS) to determine the extent of the impact the proposed project has on the air quality in the project study area.

## **9. Noise**

Traffic noise assessments are determined based on the current procedures for the abatement of highway traffic noise, appearing as Part 772 of Title 23 of the Code of Federal Regulations, in the West Virginia Department of Transportation's Noise Analysis and Abatement Guidelines, and in the Virginia State Noise Abatement Policy.

### **a. Characteristics of Noise**

Noise is basically defined as unwanted sound. It is emitted from many sources including airplanes, factories, railroads, power generation plants, highway vehicles, as well as, many other noise generating sources. Highway noise, or traffic noise, is usually a composite of noises from engine exhaust, drive train, and tire-roadway interaction.

The magnitude of noise is usually described by its sound pressure. Since the range of sound pressure varies greatly, a logarithmic scale is used to relate sound pressures to some common reference level, usually the decibel (dB). Sound pressures described in decibels are called sound pressure levels and are defined in terms of frequency weighted scales (A, B, C, or D).

The weighted-A decibel scale is used almost exclusively in vehicle noise measurements because it places the most emphasis on the frequency range to which the human ear is most sensitive (1,000-6,000 Hertz). Sound levels

measured using a weighted-A decibel scale are often expressed as dBA. Throughout this technical report, noise levels are expressed in dBA's.

Most individuals in urbanized areas are exposed to fairly high noise levels from many sources as they go about their daily activities. The degree of disturbance or annoyance of unwanted sound depends essentially on the following three things:

- The amount and nature of the intruding noise.
- The relationship between the background noise and the intruding noise.
- The type of activity occurring where the noise is heard.

In considering the first of these three factors, it is important to note that individuals have different hearing sensitivity to noise. Loud noises bother some more than others and some individuals become annoyed if an unwanted noise persists. The time patterns of noise also enter into an individual's judgment of whether or not a noise is offensive. For example, noises that occur during sleeping hours are usually considered to be more repugnant than the same noises in the daytime.

With regard to the second factor, individuals tend to judge the annoyance of an unwanted noise in terms of its relationship to noise from other sources (background noise). The blowing of a car horn at night when background noise levels are approximately 45 dBA is generally more objectionable than the blowing of a car horn in the afternoon when background noises might be 55 dBA.

The third factor relates to the interference of noise with activities of individuals. In a 60 dBA environment, normal conversation is possible while sleep might be difficult. Work activities requiring high levels of concentration may be interrupted by loud noises while activities requiring manual effort may not be interrupted to the same degree.

Over time, individuals tend to accept the noises that intrude into their lives, particularly if expected and occurring at predicted intervals. Attempts

have been made to regulate many of these types of noises including airplane noise, factory noise, railroad noise, and highway traffic noise. In relation to highway traffic noise, methods of analysis and control have developed rapidly over the past few years.

**b. Ambient Noise Levels**

The two most commonly used methods of obtaining noise levels for existing conditions are by computer modeling and field measurements. Computer modeling is feasible only when the predominant noise source is vehicular traffic. In situations where traffic is not the primary noise source, field measurement (noise monitoring) is the accepted method for determining the existing ambient noise level.

**1) Measurement of Existing Noise Levels**

Noise monitoring was performed during March 1997 along the build alternates at 26 representative locations. The monitoring locations are shown in Exhibit III-4. At ten of the locations the predominant noise source is attributed to vehicular traffic. At eight locations the noise source is a combination of vehicular and non-vehicular background sounds, and at the remaining eight locations, the primary noise source is from non-vehicular sounds.

The monitoring was conducted according to the procedures outlined in FHWA-DP-45-1R, "*Sound Procedures for Measuring Highway Noise: Final Report.*" Existing noise levels were measured on March 5, 7, 20, and 21 of 1997. Equipment used included a Noise Logging Dosimeter, Quest Electronics Model M-39, with an 8 millimeter (0.3 inch) PZT ceramic microphone (accuracy  $\pm 1.5$  dBA for normal frequency range). All noise samples were 20 minutes in duration. The calibration of the sound level meter was checked before and after each sample.

**2) Predicted Existing Noise Levels**

At those locations where the existing noise levels were attributed primarily to vehicular traffic, computer-modeling projections were made to simulate peak hourly volume conditions utilizing the FHWA Highway Traffic Noise Prediction Model (described in next section). These values provided a means

by which to compare the measured existing and predicted existing noise levels. At locations where the predominant noise source was not traffic related, the ambient measured values were used for comparison with future projections.

Table III-7 presents a summary of the existing ambient noise measurements along with corresponding predicted values from the computer model, based on the traffic data collected during the noise monitoring. At the ten locations where the predominant noise source is from vehicular traffic, the predicted values, obtained from the computer model, were all within 3 dBA's of the measured values (five of the locations were within 1 dBA).

**TABLE III-7  
1997 AMBIENT NOISE LEVELS**

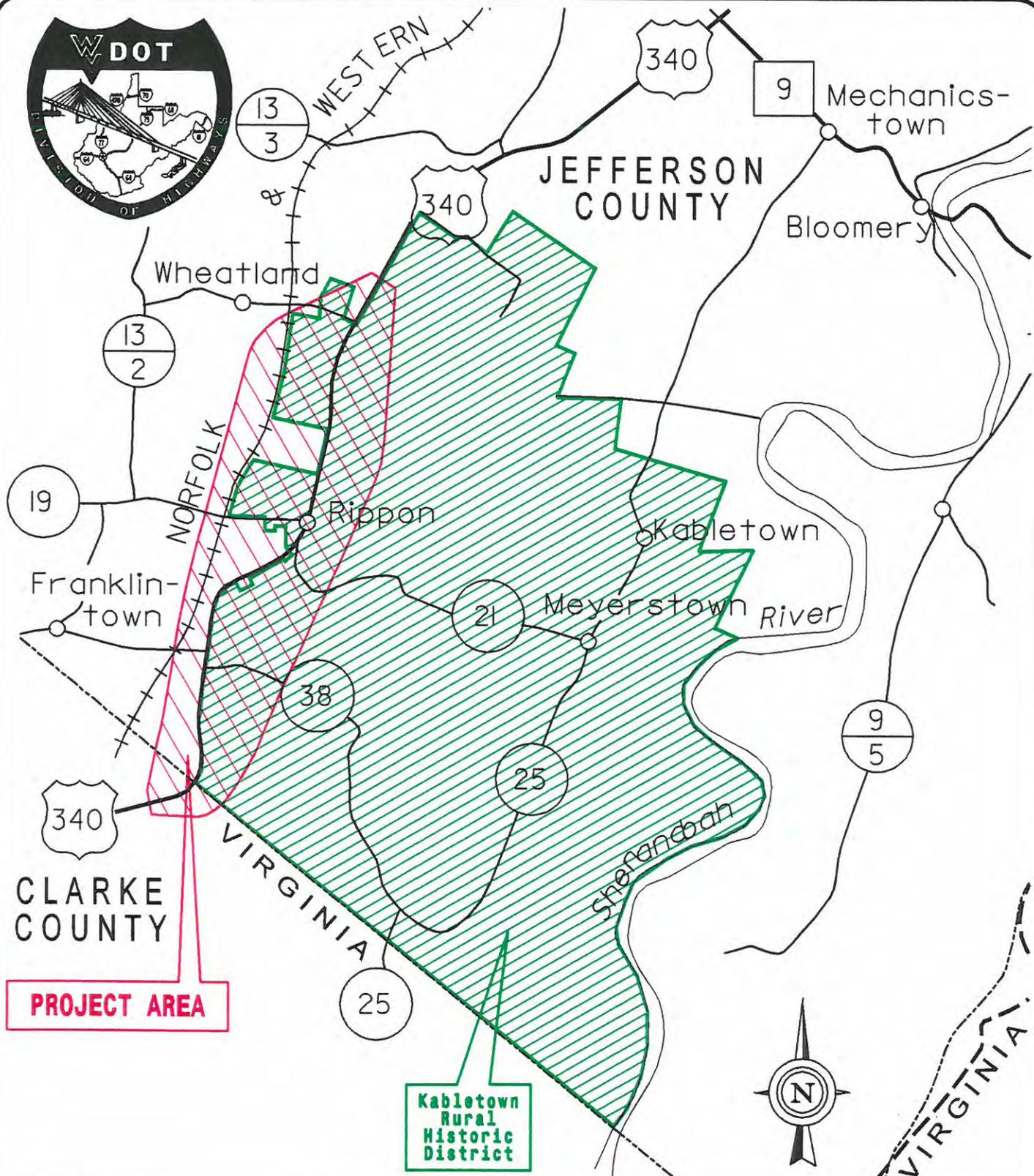
<b>Noise Monitor Site No.</b>	<b>Site Description</b>	<b>Distance To Nearest Roadway<sup>1</sup> feet (meters)</b>	<b>Measured Ambient (dBA)</b>	<b>Predicted Value<sup>2</sup> (dBA)</b>
M1 <sup>3</sup>	Residence off US 340	74'	60	61
M2 <sup>3</sup>	Residence off VA 612	90'	47'	N/A
M3	Residence off US 340 Behind the Rainbow Road Club	150' (46m)	62	64
M4	Residence off US 340 Behind John's Family Restaurant	170' (52m)	58	59
M5	Residence off US 340 North of Chapman's Trailer Court	290' (88m)	59	56
M6	Residence off SR 19 in Village of Rippon Historic District	90' (27m)	54	N/A
M7	Historic Ripon Lodge Property	1730' (527m)	47	N/A
M8	Barn off Wheatland	730' (223m)	50	N/A
M9	Residence off 340/2 Behind the Rainbow Diner	270' (82m)	56	58
M10	Residence off US 340	150' (46m)	62	65
M11	Residence off US 340	370' (113m)	50	53
M12	Residence on Byrdland Property	130' (40m)	65	64
M13	Residence off US 340	45' (14m)	69	70
M14	Residence on Wayside Farm off SR 21	160' (49m)	50	N/A
M15	Residence off SR 21	50' (15m)	54	N/A
M16	Residence off US 340 Behind the Rippon Post Office	245' (75m)	59	60
M17	Residence on the Olive Boy Farm off US 340	1700' (518m)	56	N/A
M18	Residence on the Glenwood Farm	1750' (534m)	45	N/A
M19	Residence off US 340/1	105' (32m)	44	N/A
M20	Residence off Gravel Road West of Chapman's Trailer Ct.	130' (40m)	78 <sup>4</sup>	N/A
M21	Byrdland off US 340	480' (146m)	53	N/A
M22	Residence on William Grubb Farm	N/A	49	N/A
M23	Residence on Wheatland Road West of Railroad	50' (15m)	46	N/A
M24	Residence on Access Road West of Railroad	45' (14m)	44	N/A
M25	Residence on Darke Lane	50' (15m)	48	N/A
M26	Residence on West Side of Railroad North of Access Road	N/A	42	N/A

<sup>1</sup> Distance measured to the nearest lane of traffic.

<sup>2</sup> Calculated using STAMINA2.0 BLR, Modified FHWA Version 3, Traffic Noise Prediction Model, March, 1993, with traffic data collected during ambient measurement.

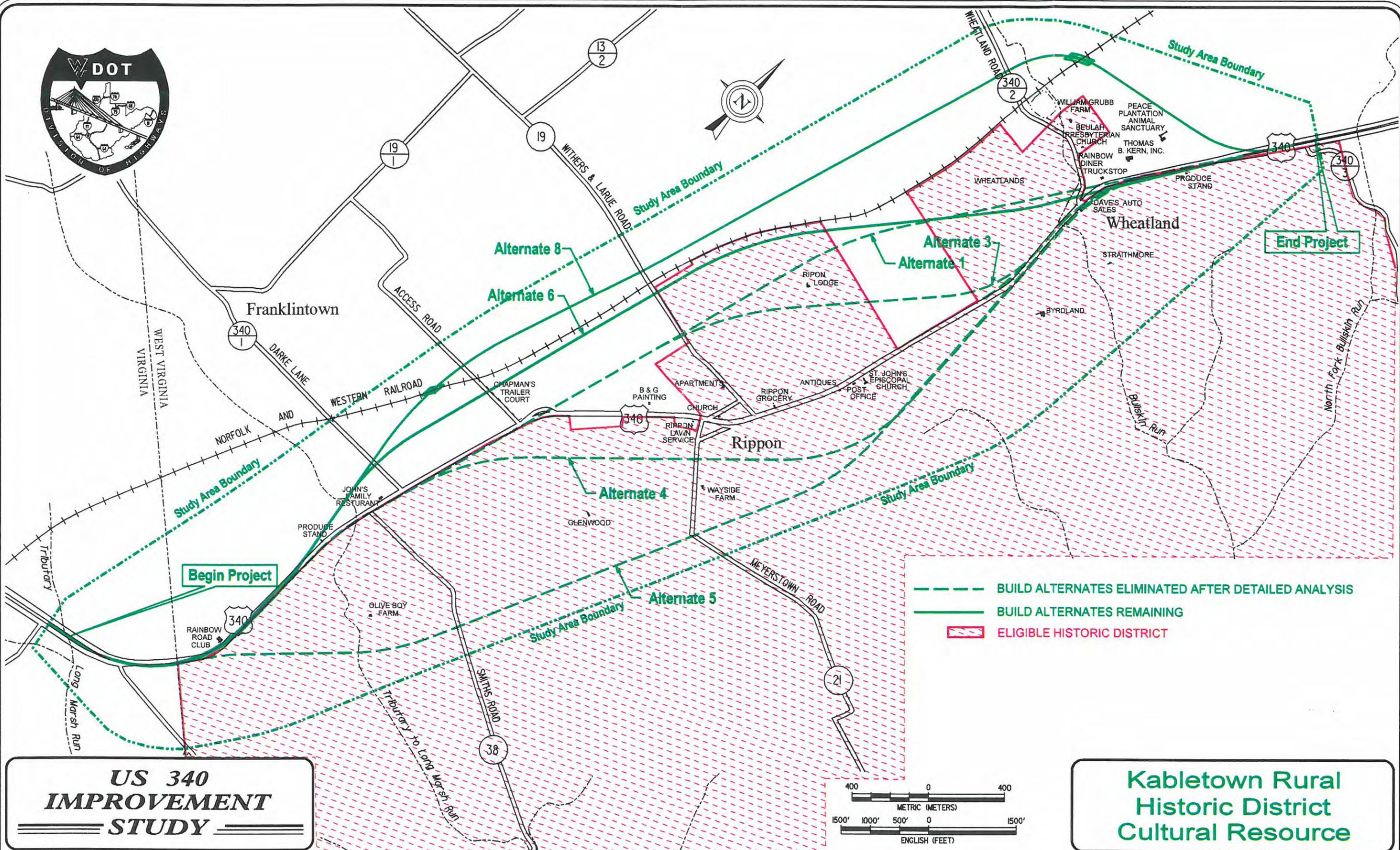
<sup>3</sup> Located in Virginia

<sup>4</sup> Ambient measurement affected by airplane and train noises



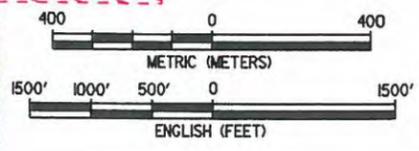
**US 340  
IMPROVEMENT  
STUDY**

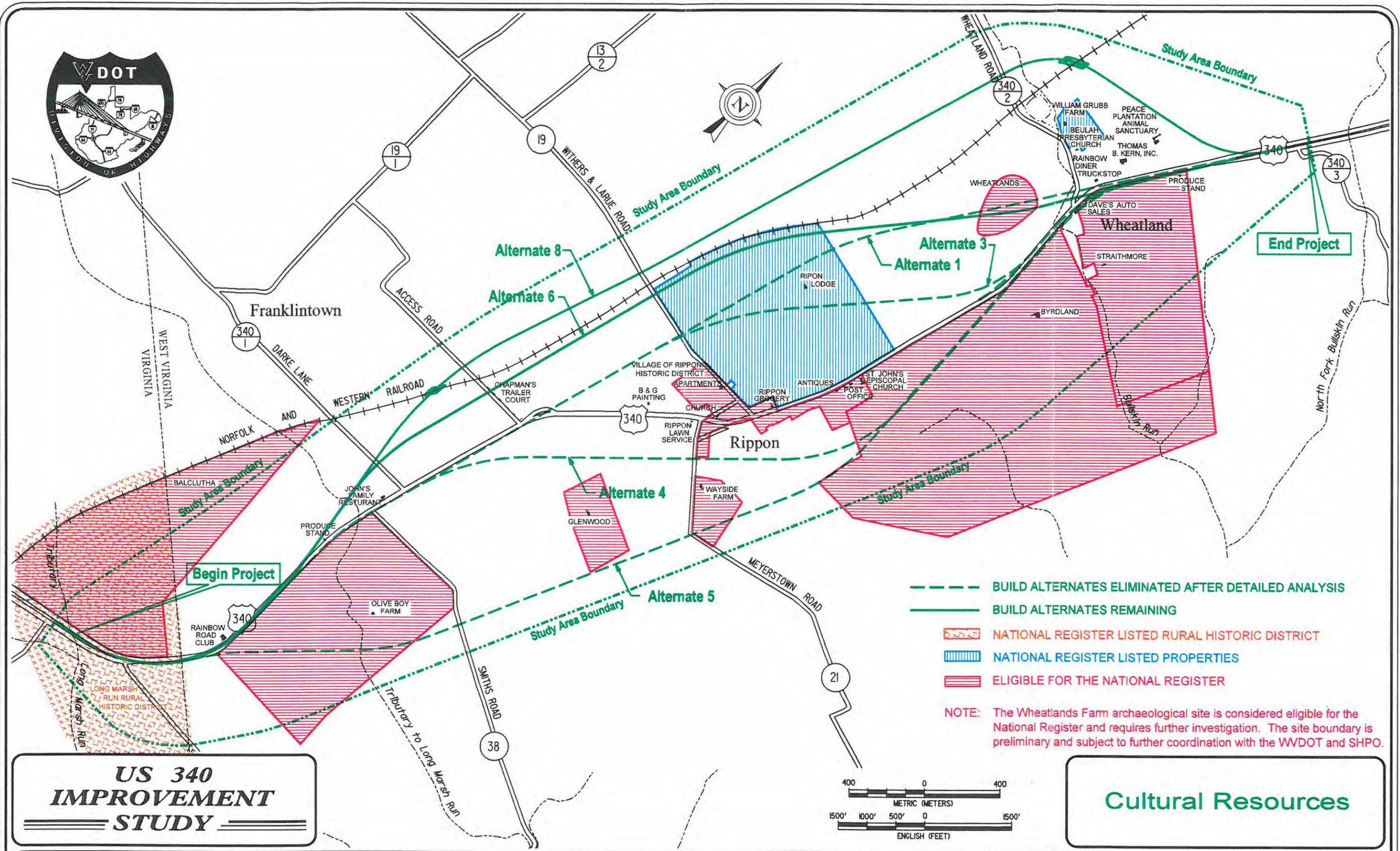
**Kabletown Rural  
Historic District  
Boundaries**



**US 340  
IMPROVEMENT  
STUDY**

**Kabletown Rural  
Historic District  
Cultural Resource**



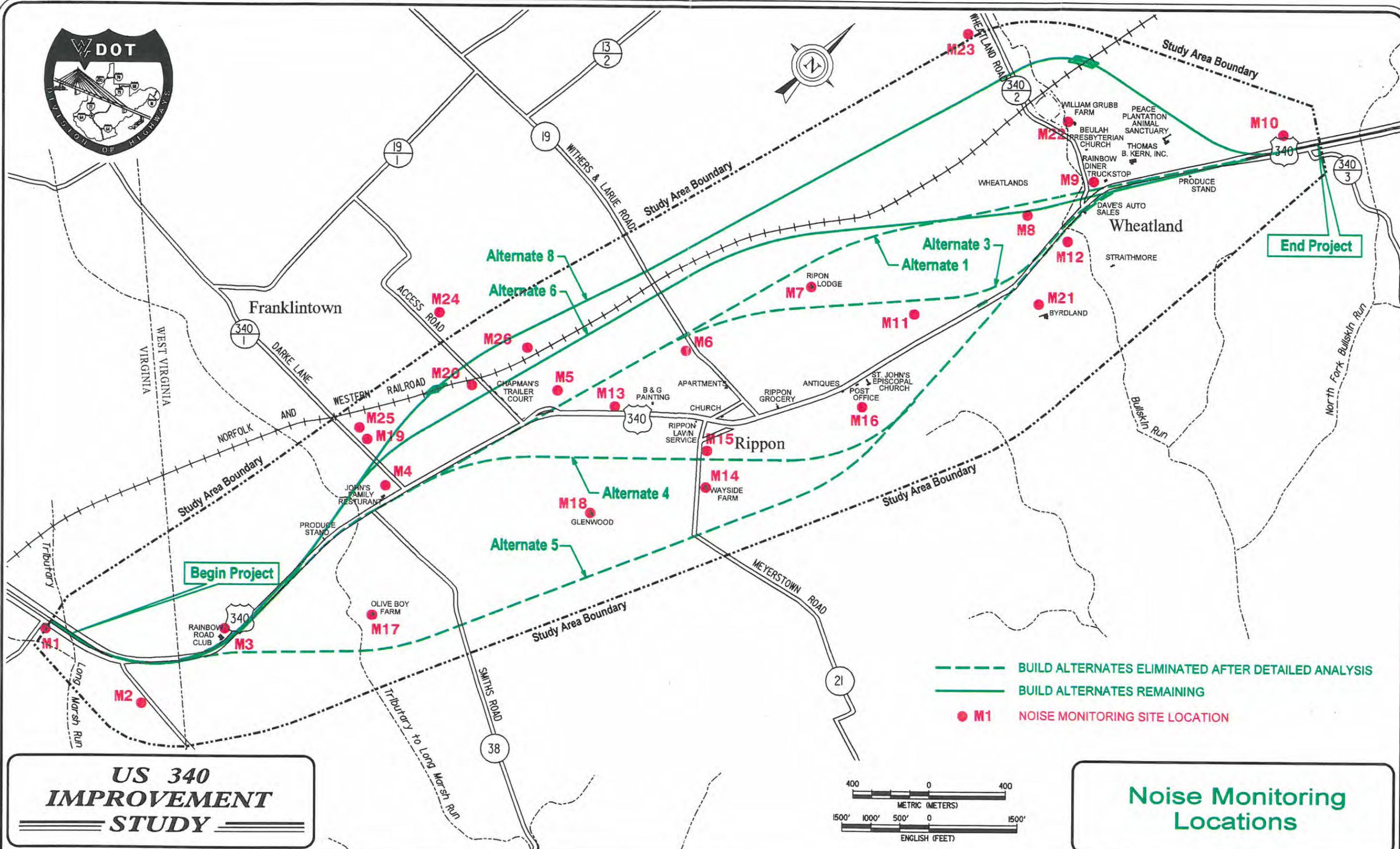


**US 340  
IMPROVEMENT  
STUDY**

**Cultural Resources**

**Exhibit III-3**

**NOTE:** The Wheatlands Farm archaeological site is considered eligible for the National Register and requires further investigation. The site boundary is preliminary and subject to further coordination with the WVDOT and SHPO.



**US 340  
IMPROVEMENT  
STUDY**

**Noise Monitoring  
Locations**

Exhibit III-4

## **IV. ENVIRONMENTAL CONSEQUENCES**

This section addresses the probable social, economic, and environmental effects that result from the implementation of the proposed action and describes the measures proposed to mitigate impacts. The social, economic, natural, and physical impacts associated with each of the build alternates and the No-Build Alternative are described in the following sections.

As discussed in Section II, Alternates 2 and 7 were dropped from consideration and Alternates 1, 3, 4, 5, 6, and 8 were studied in detail. The detail analysis for the alternates predominantly included impacts within Jefferson County, West Virginia since no new right of way is required in Clarke County, Virginia to widen the existing two-lane section to four lanes. Based on the detailed analyzes presented in this section, Alternates 6 and 8 are the two remaining alternatives considered for implementation.

### **A. Land Use Impacts**

Consideration has been given to potential land use changes along the length of the proposed roadway. According to the Jefferson County Comprehensive Plan, the current LESA system of land use planning results in properties near upgraded major highways becoming more eligible for conditional use permits for higher intensity uses without the need for zoning map amendments. All six of the alternates currently under consideration are on new alignment for a portion of their length. The LESA system may allow more high intensity uses than currently allowed along these stretches of new highway. This has the greatest affect on areas currently zoned for low intensity uses such as agriculture. A qualitative comparison of the alternates can be made based on potential land use changes. Of the six alternates under consideration, Alternate 5 has the potential to incur the most land use changes since it only traverses areas zoned as rural agricultural. Alternates 1, 3, 4, 6, and 8 provide service to the area zoned as industrial-commercial at the south end of the project, west of existing US 340. Through this segment, major land use changes are not anticipated since the area has already been designated for development. Through areas zoned as rural-agricultural

located north of the industrial-commercial area, the potential for land use changes to occur due to Alternates 1, 3, 4, 6, and 8 is approximately equal. Alternates 1, 3, 4, 5, and 6 provide service equally to the areas zoned as industrial-commercial, and residential growth-light industrial-commercial at the north end of the project area. Alternate 8 extends further to the west through an additional area designated for industrial-commercial use before connecting to existing US 340. The No-Build Alternative would not result in any land use changes.

## **B. Farmland Impacts**

In accordance with the Farmland Protection Policy Act, the impacts of the proposed action to Prime and Statewide Important farmlands were assessed. These impacts are summarized in Table IV-1. Prime Farmland soils are those soils best suited for producing food, feed, fiber, forage, and oilseed. Soils of statewide importance are those soils with seasonal wetness, erosion, or drought that limit their suitability for some crops but can still produce a moderate to high yield of adaptable crops with modern farming methods. In order to determine the potential impacts to Prime and Statewide Important farmlands, the acreage of soil types within the proposed right of way has been determined. Table IV-2 provides these areas for Jefferson County, West Virginia. Excluded from the calculation of these areas are lands that are zoned industrial-commercial and residential growth-light-industrial-commercial (see Exhibit I-7). Because of the approved Jefferson County Comprehensive Plan and the designated land uses, these soils are not considered Prime or Statewide Important farmlands. There are no impacts to Prime or Statewide Important Farmlands in Clarke County, Virginia since no new right of way is required for any of the six alternates.

The completed form is located in the Appendix. The Land Evaluation and Site Assessment scores were less than 160, so no further consultation was required.

## **C. Social Impacts**

### **1. Community Cohesion**

The six alternates currently under consideration have little impact on community cohesion. The study area is generally rural in nature with development

primarily located in the communities of Rippon and Wheatland. By relocating the existing US 340 out of the Village of Rippon Historic District to a new alignment either east or west of the district, community cohesion is positively affected. Through-traffic no longer has to pass through the center of the Village of Rippon. All six of the alternates currently under consideration relocate US 340 outside of the central village district.

**TABLE IV-1  
FARMLAND IMPACTS**

	<b>Prime and Unique Farmland</b>	<b>Statewide or Locally Important Farmland</b>	<b>Total Impact</b>
Alternate 1	55.2 ac. (22.3 ha)	17.2 ac. (7.0 ha)	72.4 ac. (29.3 ha)
Alternate 3	52.7 ac. (21.3 ha)	26.5 ac. (10.7 ha)	79.2 ac. (32.0 ha)
Alternate 4	50.5 ac. (20.4 ha)	31.8 ac. (12.9 ha)	82.3 ac. (33.3 ha)
Alternate 5	54.1 ac. (21.9 ha)	37.2 ac. (15.1 ha)	91.3 ac. (37.0 ha)
Alternate 6	54.2 ac. (21.9 ha)	2.6 ac. (1.1 ha)	56.8 ac. (23.0 ha)
Alternate 8	82.0 ac. (33.1 ha)	38.0 ac. (15.3 ha)	120.0 ac. (48.4 ha)

Note: Alternates 6 and 8 are the remaining build alternates under consideration.

The Clarke County Agricultural District will not be impacted by any of the build alternates. The improvements proposed for the section of the project within Clarke County, Virginia will not require new right of way. All widening will be constructed within the existing right of way for each alternate.

Within the Wheatland area, the majority of the development is west of the existing US 340. Alternates 1, 3, 4, 5, and 6 are located near the existing US 340 and do not greatly affect the community cohesion in this area. Alternate 8 is located west of US 340 and extends north over Jefferson County 340/2 before turning east over the Norfolk and Western Railroad and connecting to US 340. Alternate 8 does not adversely affect the community cohesion in the Wheatland

area since it extends west of the developed areas. The No-Build Alternative has no effect on community cohesion.

**TABLE IV-2  
SOIL TYPES BY ALTERNATE  
(Jefferson County, West Virginia)**

Soil Type (Map Symbol)	Area Within Proposed Right of Way					
	Alt. 1	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 8
Alluvial land, marl substratum (Am)	2.5 ac. (1.0 ha)	1.6 ac. (0.7 ha)	1.3 ac. (0.5 ha)	4.2 ac. (1.7 ha)	1.8 ac. (0.7 ha)	4.0 ac. (1.6 ha)
Duffield silt loam, 2 to 6 % slopes (DgB)	32.5 ac. (13.1 ha)	22.5 ac. (9.1 ha)	29.7 ac. (12.0 ha)	30.2 ac. (12.2 ha)	16.2 ac. (6.6 ha)	29.3 ac. (11.8 ha)
Duffield silt loam, 6 to 12 % slopes (DgC)	5.5 ac. (2.2 ha)	4.5 ac. (1.8 ha)	18.7 ac. (7.6 ha)	6.1 ac. (2.5 ha)	3.0 ac. (1.2 ha)	5.0 ac. (2.0 ha)
Duffield silt loam, 6 to 12 % slopes, severely eroded (DgC3)	0.0 ac. (0.0 ha)	5.3 ac. (2.1 ha)	7.9 ac. (3.2 ha)	18.3 ac. (7.4 ha)	0.0 ac. (0.0 ha)	2.7 ac. (1.0 ha)
Frankstown shaly silt loam, 2 to 6 % slopes (FbB)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	4.9 ac. (2.0 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)
Frankstown shaly silt loam, 6 to 12 % slopes (FbC)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	1.5 ac. (0.6 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)
Frankstown shaly silt loam, 6 to 12 % slopes, severely eroded (FbC3)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	4.0 ac. (1.6 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)
Hagerstown silt loam, 2 to 6 % slopes (HbB)	14.2 ac. (5.7 ha)	19.3 ac. (7.8 ha)	13.6 ac. (5.5 ha)	9.0 ac. (3.6 ha)	31.2 ac. (12.6 ha)	33.8 ac. (13.6 ha)
Hagerstown silt loam, 2 to 6 % slopes (HbC)	3.1 ac. (1.3 ha)	6.5 ac. (2.6 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	1.6 ac. (0.7 ha)	4.6 ac. (1.8 ha)
Hagerstown silty clay loam, 6 to 12 % slopes, severely eroded (HeC3)	4.1 ac. (1.7 ha)	8.6 ac. (3.5 ha)	3.9 ac. (1.6 ha)	3.1 ac. (1.2 ha)	2.6 ac. (1.1 ha)	14.8 ac. (5.9 ha)

Note: Alternates 6 and 8 are the remaining build alternates under consideration.

**TABLE IV-2 (Continued)**

Soil Type (Map Symbol)	Area Within Proposed Right of Way					
	Alt. 1	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 8
Hagerstown and Frederick cherty silt loams, 2 to 6 % slopes (HfB)	0.8 ac. (0.3 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	0.9 ac. (0.3 ha)	0.0 ac. (0.0 ha)
Hagerstown and Frederick cherty silt loams, 6 to 12 % slopes (HfC)	1.9 ac. (0.8 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	1.9 ac. (0.8 ha)	0.0 ac. (0.0 ha)
Hagerstown and Frederick very rocky silt loams, 2 to 6 % slopes (HgB)	1.1 ac. (0.5 ha)	1.1 ac. (0.5 ha)	8.4 ac. (3.4 ha)	0.5 ac. (0.2 ha)	0.0 ac. (0.0 ha)	2.0 ac. (0.8 ha)
Hagerstown and Frederick very rocky silt loams, 6 to 12 % slopes (HgC)	11.7 ac. (4.7 ha)	0.7 ac. (0.3 ha)	0.7 ac. (0.3 ha)	4.3 ac. (1.7 ha)	8.6 ac. (3.5 ha)	20.9 ac. (8.4 ha)
Hagerstown and Frederick very rocky silt loams, 12 to 25 % slopes (HgD)	0.5 ac. (0.2 ha)	1.0 ac. (0.4 ha)	1.4 ac. (0.6 ha)	1.3 ac. (0.5 ha)	0.5 ac. (0.2 ha)	0.0 ac. (0.0 ha)
Hagerstown and Frederick cherty silty clay loams, 6 to 12 % slopes, severely eroded (HhC3)	0.1 ac. (0.0 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	0.1 ac. (0.1 ha)	0.0 ac. (0.0 ha)
Hagerstown and Frederick very rocky silty clay loams, 6 to 12 % slopes, severely eroded (HIC3)	7.5 ac. (3.1 ha)	5.1 ac. (2.1 ha)	5.1 ac. (2.1 ha)	10.1 ac. (4.1 ha)	7.4 ac. (3.0 ha)	5.3 ac. (2.0 ha)
Hagerstown and Frederick very rocky silty clay loams, 12 to 25 % slopes, severely eroded (HID3)	0.0 ac. (0.0 ha)	2.8 ac. (1.1 ha)	1.1 ac. (0.4 ha)	1.0 ac. (0.4 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)
Huntington silt loam, local alluvium (Ho)	7.7 ac. (3.1 ha)	10.9 ac. (4.4 ha)	6.2 ac. (2.5 ha)	3.8 ac. (1.6 ha)	14.0 ac. (5.7 ha)	9.8 ac. (3.9 ha)
Lindside silt loam, local alluvium (Lo)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)	1.0 ac. (0.4 ha)	6.2 ac. (2.5 ha)	0.0 ac. (0.0 ha)	0.0 ac. (0.0 ha)

Note: Alternates 6 and 8 are the remaining build alternates under consideration.

## **2. Accessibility and Travel Patterns**

The proposed project has a positive affect by improving north-south access through Jefferson County. It provides improved access to jobs, goods, facilities and services in Charles Town immediately north of the study area. It also improves access to east-west roadways such as I-66 and I-70 that connect to the major metropolitan areas of Baltimore, Maryland and Washington, DC.

## **3. Community Facilities and Services**

There are no schools, libraries, parks or recreation areas within the study area. The Norfolk and Western Railroad, the three churches, and the US Post Office in the study area are not affected by any of the six alternates currently under consideration. The No-Build Alternative also does not have any effect on these public facilities.

Within the Wheatland area, the majority of the development is west of the existing US 340. Alternates 1, 3, 4, 5, and 6 are located near the existing US 340 and do not greatly affect community cohesion in this area. Alternate 8 is located though undeveloped property further west of existing US 340 and bypasses the majority of the developed areas within Wheatland. Alternate 8 would not greatly affect community cohesion.

## **4. Public Safety**

The proposed project does not directly affect any emergency facilities. By improving this segment of US 340, accessibility to the area for emergency reasons is improved over the current existing condition. The effect on emergency services does not vary with the six alternates under consideration. The No-Build Alternative does not improve accessibility for emergency services.

## **D. Relocation Impacts**

The potential residential and business relocations vary by alternate. Table IV-3 displays by alternate the number of relocations by type and the total right of way required. The number of relocations is based on information obtained from the *Draft Design Location Report of Alternate Alignments* with adjustments based on

revised estimates in June 1999 and August 2000, and field reviews of the project study area.

The various alternates impact a total of five single-family homes, nine mobile homes, and one apartment. Eight of the nine mobile homes are located within Chapman’s Trailer Court. The apartment is located on the second story of the structure containing Dave’s Auto Sales at Wheatland. The single-family homes and the remaining mobile home are scattered throughout the project area. There are no minority occupied residences relocated by the project.

**TABLE IV-3  
ALTERNATE COMPARISON**

Alternate	Relationship to Rippon Village District	Acquisitions & Relocations		
		Right of Way (acres/hectares)	Residential/ Mobile Homes	Commercial
1	bypasses to the <b>West</b>	112/45.3	2 acquisitions/ 5 acquisitions/ 0 minority	5 acquisitions/ 0 minority
3	bypasses to the <b>West</b>	107/43.3	2 acquisitions/ 4 acquisitions/ 0 minority	5 acquisitions/ 0 minority
4	bypasses to the <b>East</b>	108/43.7	1 acquisition/ 1 acquisition/ 0 minority	4 acquisitions/ 0 minority
5	bypasses to the <b>East</b>	112/45.3	1 acquisition/ 0 minority	2 acquisitions/ 0 minority
6	bypasses to the <b>West</b>	<b>114/46.2</b>	1 acquisition/ 5 acquisitions/ 0 minority	3 acquisitions/ 0 minority
8	Bypasses to the <b>West</b>	<b>148/59.4</b>	2 acquisitions/ 0 acquisitions/ 0 minority	2 acquisitions/ 0 minority

Note: Alternates 6 and 8 are the remaining build alternates under consideration.

Source: West Virginia Department of Transportation, *Draft Design Location Report of Alternate Alignments*, May 1995, field observations, 1997 and 2000, & revised estimate in June, 1999 and August 2000.

In addition to these potential impacts, several secondary structures such as garages, barns, and sheds on properties are affected. In general, the parcels are large enough in order to relocate or rebuild these structures somewhere else on the same piece of property.

The proposed alternates potentially acquire six businesses through right of way acquisition. These businesses are the Rainbow Road Club, an unnamed produce stand, the Ellifritz Museum, the Rainbow Diner Truck Stop, Dave's Auto Sales, and Smith's Produce. The Rainbow Road Club is located on the west side of existing US 340 approximately 780 feet north of the Virginia/West Virginia state line. It is acquired under Alternates 1, 3, 4, 6, and 8. The unnamed produce stand is opened seasonally. It is located on the west side of existing US 340, approximately 1,000 feet (300 meters) south of Jefferson County 38 and is acquired under Alternates 1, 3, 4, 6, and 8. A small museum named the Ellifritz Museum is located behind a residence located on a side road within the community of Rippon. This arts/crafts/nature museum is approximately 600 feet (180 meters) west of existing US 340 and is acquired under Alternates 1 and 3. Dave's Auto Sales is located on the east side of existing US 340, opposite Jefferson County 340/2. This business is acquired under Alternates 3, 4, and 5. The Rainbow Diner Truck Stop is located on the west side of existing US 340, just north of Jefferson County 340/2. This diner is acquired by proposed right of way under Alternate 1. The second produce stand, Smith's Produce is also opened only seasonally. It is located on the east side of US 340, approximately 2,000 feet (610 meters) north of Jefferson County 340/2. Alternates 1, 3, 4, 5, and 6 acquire Smith's Produce with proposed right of way.

As shown in Table IV-3, Alternates 1 and 3 have the greatest number of relocations and Alternate 5 has the least relocations. Alternate 1 has a total of 12 relocations, which includes two residences, five mobile homes, and five businesses. Alternate 3 has a total of 11 relocations, which includes two residences, four mobile homes, and five businesses. Alternate 5 involves relocating one residence and two businesses. Alternate 6 has a total of nine relocations, which includes one residence, five mobile homes, and three businesses. Alternate 8 has a total of four relocations, which includes two residences and two businesses. The No-Build

Alternative does not require the relocation of any residence, business, farm, or non-profit organization.

It is the policy of the West Virginia Department of Transportation to ensure that comparable replacement housing is available prior to construction of state and federally assisted projects. The acquisition and relocation program is undertaken in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Replacement assistance and compensation are offered regardless of race, sex, color, or national origin. Details of the state's relocation assistance program and right of way agents are available to address specific questions at public meetings for the project.

In order to determine the availability of residential replacement properties, Metropolitan Regional Information Systems, Inc. was contacted. This organization maintains statistics on residential properties subdivided by area or county. Thirty-nine residential properties were sold within Jefferson County in May 1997 with an average sales price of approximately \$113,000. During this time period 569 residential properties were on the market. There appeared to be an adequate number of properties on the market with a variety of features in all price ranges.

To determine the availability of rental residences, the Martinsburg Journal classified section was consulted. This is the main newspaper circulated within the project study area. The Sunday classified ads were consulted for three weeks. During this time period, ten rentals were advertised with monthly rents from \$360 to \$750. Despite the few rentals currently available, rentals are likely to become available during the course of the project.

There is adequate land available for the relocation of the impacted businesses. There are areas at the south and north ends of the project which are zoned for commercial land uses. For several of the potentially impacted businesses, it may be possible for the business to relocate to a different location on the remaining property. For all cases, there should be adequate locations available nearby to re-establish the business.

The majority of the relocations are located in Census Block 9728-2. Through observation, it was verified that white families occupy four out of six homes and six out of nine mobile homes. For the remaining residences, no observations were made. Based on these observations and the 1990 Census information, it is likely that most or all of the potential relocatees are white.

Through observations, only one potential relocatee is elderly of the ten households observed. Based on field observations and the 1990 Census data, it is likely that one to two households of the sixteen potentially relocated include elderly residents. No disabled residents were observed in the project study area. It is likely that few to none of the potentially relocated households include disabled residents.

The majority of the potentially relocated mobile homes appear to be in fairly good condition and likely could be moved. Three of the mobile homes that are impacted by Alternate 6 are in poor condition and may not be able to withstand moving.

If necessary, the West Virginia Department of Transportation, Division of Highways will implement a Last Resort Housing Program. This program ensures that decent, safe, and sanitary housing is made available to all relocatees.

## **E. Environmental Justice**

This project has been developed in accordance with Title VI of the Civil Rights Act of 1964 as amended in 1968, and Executive Order 12898 of February 11, 1994. As outlined in Sections A and C of Chapter 3, the population, growth characteristics, and the economic environment of the project area is predominately white with moderate income levels. Field studies and property owner contacts showed no areas of low income or minority populations that would be impacted by this project. Therefore in accordance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, the Department has determined that neither low income or minority populations are disproportionately impacted by this project.

## **F. Economic Impacts**

An economic benefit common to all alternates is an increase in employment for highway and bridge construction. Based on the Federal Highway Administration's procedures for estimating construction related employment, each one million dollars of construction expense creates an average of 9.75 jobs on-site and 12.7 off-site. Five of the six alternates under consideration have construction costs within the same range. Alternate 8 cost over \$12 million more than the other build alternates. This cost increase is associated with the two bridge crossings at the railroad. The economic benefits of construction-related jobs may be slightly higher for Alternate 8, however these benefits will not differ greatly between the other five alternates.

According to the Jefferson County Comprehensive Plan, lack of road improvements has been a restraint on the economic growth of Jefferson County. Improving US 340 provides better access through Jefferson County and enhances the existing transportation network. Better access via interstate highways and other four-lane roadway facilities make Jefferson County even more attractive to prospective businesses and industries. These improvements could help promote industrial and commercial growth, particularly in the large area located at the south end of the study area, west of the existing US 340 which is zoned for these types of land uses. Because of its geographic location, Jefferson County has the potential to become a point of distribution for several metropolitan areas located within a 300-mile (484-kilometer) radius.

Improved access through Jefferson County also helps promote local tourist attractions such as Charles Town Races, Harpers Ferry National Historical Park, Jefferson County Mountain Heritage Arts and Crafts Festival, the National Fisheries Center, and Summit Point Raceway. As a result of improving US 340 and providing better access to these attractions, tourism could become even more important to the local economy.

Small businesses located within the community of Rippon may be affected by the reduction in through-traffic due to the relocation of US 340 to outside of the community. The majority of these businesses are likely to primarily serve the local

residents with only a small percentage of their business generated by through-traffic. The slight effect of the relocation of US 340 is balanced by the improved traffic conditions within Rippon. Decreased traffic makes the businesses in the community of Rippon more easily accessible.

The slight effect on the businesses in the community of Rippon that may occur is more than compensated for by the economic benefits of increased tourism and industrial-commercial growth. The economic benefits provided by the proposed improvements should not differ between alternates. The No-Build Alternative has a negative economic effect on the county. The unacceptable level of service that results on this segment of US 340 if there are no improvements hinders industrial-commercial growth and has negative effects on tourism.

## **G. Air Quality Impacts**

### **1. Receptor Sites**

For each of the six build alternates, the roadway segment having the potential for generating the highest CO concentration was identified. This critical segment happens to be identical for all build alternates and is located north of Jefferson County 340/2 at the northern project limit. Since the alignment, traffic, and right of way are identical for all build alternates along this segment, only one analysis at one receptor site was required for the build alternates. The selected receptor site is located on the proposed right of way line as shown in Exhibit IV-1. Air quality projections were calculated for the year of project completion (2005), interim years after project completion (2010, 2015), and the design year (2020).

For comparison purposes, air quality projections were calculated for the No-Build Alternative using the existing alignment and traffic volumes projected for the same years as examined in the analysis of the build alternates. The critical segment having the highest volume and lowest estimated speed is located in Rippon, north of the intersection of US 340 and Jefferson County 21. The receptor used in the analysis is located at the edge of the existing right of way line as shown in Exhibit IV-1. Speeds were estimated based on expected congestion and low level of service.

## **2. Background Concentrations**

Carbon monoxide 1-hour and 8-hour concentrations of 2.0 parts per million (ppm) and 1.2 ppm, respectively, were used for background concentrations in the analysis. These values are normally assumed for background concentrations in suburban and rural areas.

## **3. Microscale Analysis Method and Model Description**

Microscale CO projections were made using the EPA-approved MOBILE5a and CAL3QHC (Version 2) computer models. MOBILE5a was used to determine CO emission factors which, in turn, were used in the CAL3QHC model to generate CO concentrations.

CAL3QHC is a versatile dispersion model that predicts CO concentration for roadway segments and intersections. The computed pollution concentration values represent combinations of both those levels generated by roadway traffic from CAL3QHC and assumed background concentrations.

Air pollutant concentrations are dependent upon factors such as meteorological and source characteristics, as well as the dispersion and distribution of emissions. The values for the factors that were used in the MOBILE5a and CAL3QHC computer simulations for the study are presented below.

### **a. Emission Factors-MOBILE5a Computer Model**

To develop emission factors which are representative of localized conditions for the investigated years, a number of variables were utilized. These variables include: inspection maintenance program, antitampering program, vehicle classification, vehicle operation in cold and hot transient modes, average operating speed, and region.

### **b. Predicted Concentrations - CAL3QHC Computer Model**

Table IV-4 contains a summary of all the variables, except traffic, that were used in the CAL3QHC model to compute predicted 1-hour CO concentrations at the investigated site.

To account for the variation in traffic and meteorological conditions over time, a persistence factor was used to convert the 1-hour concentration to a predicted 8-hour average concentration. A persistence factor of 0.61 for suburban and rural areas was used to convert the 1-hour concentrations to 8-hour average concentrations in this study.

**TABLE IV-4  
CAL3QHC MODEL VARIABLES**

<b>1. METEOROLOGICAL FACTORS:</b>	
<u>Classification</u>	<u>Factor</u>
Wind Speed	1 meter per second
Wind Direction	Program computes worst direction for each receptor.
Stability Class	D
Mixing Height	1,000 meters (3,280 feet)
<b>2. GENERAL FACTORS:</b>	
<u>Classification</u>	<u>Factor</u>
Averaging Time	60 minutes
Surface Roughness	108 cm (Single Family Residential)
<b>3. ROADWAY LINK DATA - For Freeflow Conditions:</b>	
<u>Classification</u>	<u>Factor</u>
Type/Height	Assume roadways are at grade.
Mixing Cell Width	Total width of freeflow lanes plus 20 feet (6 meters).
Traffic Volume	Traffic volumes were based on the design hourly volumes.
Emission Factors	Knowing the year of analysis and the anticipated average vehicle speed for the roadway under investigation, the emission factor for each roadway link was determined from the results of the MOBILE5a computer run.
Link Coordinates	Mapping that was used to identify the link coordinates is in the project file.
<b>4. RECEPTOR DATA:</b>	
Each receptor was assumed to be 5 feet (2 meters) above the ground elevation. They were identified utilizing the same coordinate system as the roadway links. They appear on the same maps with the roadway links.	

The results from the microscale analysis for the build alternates being investigated in this study are summarized in Table IV-5. This table includes the 1-hour and 8-hour concentrations for the analyzed receptor, for the four years investigated. Table IV-5 was developed from the 1-hour concentrations in the CAL3QHC printouts.

**TABLE IV-5  
MAXIMUM PREDICTED CARBON MONOXIDE CONCENTRATIONS  
(Parts Per Million)**

<b>1-HOUR CONCENTRATIONS (including 2.0 ppm background concentration)</b>		
Year	Concentration (ppm)	
	No-Build	All Build Alternates
Existing	2.8	N/A
2005 – Year of Project Completion	2.9	2.2
2010 - Interim Year	3.2	2.3
2015 - Interim Year	3.8	2.3
2020 - Design Year	4.2	2.3
<b>8-HOUR CONCENTRATIONS (including 1.2 ppm background concentration)</b>		
Year	Concentration (ppm)	
	No-Build	All Build Alternates
Existing	1.7	N/A
2005 – Year of Project Completion	1.8	1.3
2010 - Interim Year	2.0	1.4
2015 - Interim Year	2.3	1.4
2020 - Design Year	2.6	1.4

Note: National Ambient Air Quality Standards: 35 ppm (1-hour) & 9 ppm (8-hour)

#### **4. Evaluation of Results**

In comparing the projected CO concentration levels in Table IV-5 with the National Ambient Air Quality Standards, no violations of the 1-hour standard (35 ppm) or 8-hour standard (9 ppm) are expected for the No-Build Alternative or any of the build alternates. The 1-hour and 8-hour CO concentrations for the year 2020 are not expected to exceed 4.2 and 2.6 ppm (including background contributions), respectively, at the investigated sites.

### **H. Noise Impacts**

#### **1. Noise Abatement Criteria**

In order to determine whether highway noise levels are or are not compatible with various land uses, the Federal Highway Administration (FHWA) developed noise abatement criteria (NAC) and procedures to be used in the planning and design of highways. These abatement criteria and procedures are set forth in the aforementioned Federal reference (Title 23 CFR Part 772). A summary of the noise abatement criteria (NAC) for various land uses appears in Table IV-6. The NAC is presented in terms of Leq, equivalent sound level. Leq is the level of constant sounds which in a given situation and time period has the same energy, as does time-varying sound. In other words, the fluctuating sound levels of traffic noise are represented in terms of a steady noise level with the same energy content.

The FHWA procedures require the investigation of noise abatement measures when predicted project noise levels approach or exceed the NAC (Table IV-6), or when they substantially exceed the existing noise level. The West Virginia Division of Highways (WVDOH) defines approaching the NAC as values that are 1 dBA less than those appearing in Table IV-6. In addition, the WVDOH definition of substantial increase is when future noise levels exceed existing levels by 16 dBA. The State of Virginia defines a substantial increase as a 10 dBA or more increase over existing noise levels. A chart relating degree of impact to increase in future noise levels over existing is provided as a guide on the bottom of Table IV-6.

**TABLE IV-6  
NOISE ABATEMENT CRITERIA**

<b>Activity Category</b>	<b>Leq(h)</b>	<b>Description of Activity Category</b>
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residence, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	---	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.
Source: Title 23 code of Federal Regulations (CFR) Part 772, US Department of Transportation, Federal Highway Administration.		
<b>IMPACT BASED ON INCREASE IN NOISE LEVEL</b>		
<b>State</b>	<b>Increase in dBA from Existing Noise Levels to Future Noise Levels in Leq(H)</b>	<b>Subjective Descriptor</b>
West Virginia	16+	Substantial Increase Impact
Virginia	10+	Substantial Increase Impact

**2. Traffic Noise Impact Analysis**

**a. Receptors**

Potential noise sensitive areas that may be affected by noise from any of the build alternates were selected for acoustical analysis. Generally,

residential, institutional, and public areas are more sensitive to noise impacts than commercial and industrial sites. Examination of land use maps and aerial photographs, along with field investigations accomplished identification of such activities. Based on these evaluations, potential noise sensitive areas that would experience uniform noise conditions were identified along each build alternate. Within each noise sensitive area, a representative receptor was selected to represent all the sensitive properties in that area. A receptor may represent from one to more than five individual properties, depending on the density of dwellings or other noise sensitive facilities in a given area. In total there were 51 receptor sites selected for analysis. The general location of these 51 receptors is shown in Exhibit IV-2.

**b. Design Year Noise Levels**

Using the STAMINA 2.0 model, noise levels for the build alternates were predicted for all the potentially noise sensitive receptor sites identified on Exhibit IV-2. The worst case noise conditions, which were modeled, were defined as Year 2020 peak hour volumes. The speeds used reflect anticipated operating conditions. The West Virginia Division of Highways, as with all the traffic data utilized in this study, furnished medium and heavy truck percentages. The traffic data used to model the worst case conditions evaluated in this study are contained in the project file. All roadways that could potentially contribute to the overall noise level at the receptors were included in the analysis (i.e. crossroads and adjacent roadways).

**c. Results**

Table IV-7 lists the traffic noise levels at each of the investigated receptor sites for the existing and design year conditions. STAMINA 2.0 printouts from which much of Table IV-7 was developed are contained in the project file, along with work maps and other backup computations. Some of the existing values come from the field measurements obtained for this project.

**TABLE IV-7  
Leq TRAFFIC NOISE LEVELS**

Alternate	Receptor Information		Existing			Design Year - 2020		Change In Noise Level (dBA)
			Nearest Roadway		Noise Level (dBA)	Distance to Alternate (ft.)	Noise Level (dBA)	
	No.	Land Use	Name	Dist (ft)				
1, 3, 4, 5, 6, 8	1***	Residence - B	US 340	70	66*	140	68*	+2
1, 3, 4	5	Residence - B	US 340	220	61	255	65	+4
5	5	Residence - B	US 340	220	61	400	61	+0
6	5	Residence - B	US 340	220	61	215	66*	+5
8	5	Residence - B	US 340	220	61	180	67*	+6
1, 3, 4	6	Commercial - C	US 340	110	66	135	69	+3
5	6	Commercial - C	US 340	110	66	380	62	-4
6	14	Residence - B	Darke Lane (Rte. 340/1)	115	44**	430	61	+17*
8	14	Residence - B	Darke Lane (Rte. 340/1)	115	44**	335	63	+19*
1, 3, 4	16	Residence - B	Darke Lane (Rte. 340/1)	240	61	275	64	+3
6	16	Residence - B	Darke Lane (Rte. 340/1)	240	61	340	63	+2
8	16	Residence - B	Darke Lane (Rte. 340/1)	240	61	370	62	+1
1, 3, 4	17	Residence - B	Darke Lane, 340/1	100	60	285	64	+4
6	17	Residence - B	Darke Lane, 340/1	100	60	375	62	+2
8	17	Residence - B	Darke Lane, 340/1	100	60	425	61	+1
1, 3, 4	18	Commercial - C	US 340	85	67	120	69	+2
6	18	Commercial - C	US 340	85	67	445	61	-6
8	18	Commercial - C	US 340	85	67	460	60	-7
1, 3, 4	20	Residence - B	US 340	475	56	445	61	+5
6	22	Residence - B	Access Road	490	44**	230	65	+21*
8	22	Residence - B	Access Road	490	44**	310	63	+19*
6	23	Residence - B	Access Road	205	44**	220	65	+21*
8	23	Residence - B	Access Road	205	44**	360	62	+18*
8	24	Residence - B	Access Road	75	44**	435	61	+17*
6	28	Residence - B	Access Road	90	57	390	63	+6
1, 3	31	Residence - B	US 340	345	58	240	65	+7
1, 3	34	Residence - B	US 340	140	65	485	60	-5
1, 3	36	Residence - B	US 340	80	66*	470	62	-4
1, 3	37	Residence - B	US 340	160	62	480	61	-1
1, 3	38	Residence - B	US 340	305	57	380	62	+5
1, 3	39	Residence - B	US 340	420	56	235	65	+9
1, 3	40	Residence - B	US 340	520	54	215	65	+11
1, 3	41	Residence - B	US 340	400	56	385	62	+6
1, 3	42	Residence - B	US 340	300	57	505	60	+3
1, 3	45	Residence - B	US 340	470	54	480	60	+6
4	52	Residence - B	Meyerstown Road, (Rte. 21)	40	59	430	61	+2

Notes: Alternates 6 and 8 are the remaining build alternates under consideration.

Distances are from the centers of existing or proposed roadways.

All noise levels are hourly A-weighted.

\* Traffic noise impact

\*\* Measured Value

\*\*\* Located in the State of Virginia

**TABLE IV-7 (Continued)  
Leq TRAFFIC NOISE LEVELS**

Alternate	Receptor Information		Existing			Design Year - 2020		Change In Noise Level (dBA)
			Nearest Roadway		Noise Level (dBA)	Distance to Alternate (ft.)	Noise Level (dBA)	
	No.	Land Use	Name	Dist (ft)				
4	53	Residence - B	Meyerstown Road, (Rte. 21)	45	55	170	68*	+13
4	54	Residence - B	Meyerstown Road, (Rte. 21)	125	50**	435	61	+11
1	56	Residence - B	Rippon Road, (Rte. 19)	150	54**	265	64	+10
3	56	Residence - B	Rippon Road, (Rte. 19)	150	54**	240	65	+11
1	77	Residence - B	Rippon Road, (Rte. 19)	2065	47**	190	66*	+19*
6	77	Residence - B	Rippon Road, (Rte. 19)	2065	47**	435	61	+14
3	79	Residence - B	US 340	315	59	440	61	+2
3	80	Residence - B	US 340	405	57	275	64	+7
1	81	Residence - B	US 340	660	54	195	66*	+12
6	82	Residence - B	US 340	800	53	160	68*	+15
3	85	Residence - B	US 340	350	58	380	62	+4
4, 5	85	Residence - B	US 340	350	58	320	63	+5
3	86	Residence - B	US 340	180	63	210	66*	+3
4, 5	86	Residence - B	US 340	180	63	150	68*	+5
3	89	Residence - B	US 340	285	60	295	64	+4
4, 5	89	Residence - B	US 340	285	60	245	65	+5
1	90	Commercial - C	US 340	85	67	345	63	-4
6	90	Commercial - C	US 340	85	67	230	65	-2
8	91	Grubb Farm	Wheatland Road (Rte. 340/2)	240	49**	1050	56	+7
8	92	Grubb Farm	Wheatland Road (Rte. 340/2)	430	49**	855	57	+8
1	94	Residence - B	Wheatland Road (Rte. 340/2)	335	56	450	61	+5
1	95	Residence - B	Wheatland Road (Rte. 340/2)	180	59	250	65	+6
3	95	Residence - B	Wheatland Road (Rte. 340/2)	180	59	390	61	+2
4, 5	95	Residence - B	Wheatland Road (Rte. 340/2)	180	59	420	61	+2
6	95	Residence - B	Wheatland Road (Rte. 340/2)	180	59	355	62	+3
3	96	Commercial - C	US 340	125	65	215	66	+1
4, 5	96	Commercial - C	US 340	125	65	240	65	+0
6	96	Commercial - C	US 340	125	65	200	66	+1
1	97	Residence - B	US 340	175	63	180	67*	+4
3	97	Residence - B	US 340	175	63	255	64	+1
4, 5, 6	97	Residence - B	US 340	175	63	275	64	+1
4, 5	98	Residence - B	US 340	240	61	310	63	+2
6	98	Residence - B	US 340	240	61	340	63	+2
1	99	Commercial - C	US 340	430	57	445	61	+4
3	99	Commercial - C	US 340	430	57	465	60	+3
4, 5	99	Commercial - C	US 340	430	57	475	60	+3
1	100	Commercial - C	US 340	335	59	350	62	+3

Notes: Alternates 6 and 8 are the remaining build alternates under consideration.

Distances are from the centers of existing or proposed roadways.

All noise levels are hourly A-weighted.

\* Traffic noise impact

\*\* Measured Value

\*\*\* Located in the State of Virginia

**TABLE IV-7 (Continued)  
Leq TRAFFIC NOISE LEVELS**

Alternate	Receptor Information		Existing			Design Year - 2020		Change In Noise Level (dBA)
			Nearest Roadway		Noise Level (dBA)	Distance to Alternate (ft.)	Noise Level (dBA)	
	No.	Land Use	Name	Dist (ft)				
3	100	Commercial - C	US 340	335	59	360	62	+3
4, 5	100	Commercial - C	US 340	335	59	365	62	+3
6	100	Commercial - C	US 340	335	59	425	61	+2
1, 4, 5	102	Residence - B	US 340	180	63	205	66*	+3
3	102	Residence - B	US 340	180	63	210	66*	+3
6	102	Residence - B	US 340	180	63	245	65	+0
8	102	Residence - B	US 340	180	63	320	63	+0
1, 4, 5, 6	103	Residence - B	US 340	210	61	240	65	+4
3, 8	103	Residence - B	US 340	210	61	245	65	+4
5	104	Residence - B	US 340	1395	56**	660	58	+2
1	105	Residence - B	US 340	1715	47	405	61	+14
3	105	Residence - B	US 340	1715	47	350	63	+16*
3	106	Residence - B	US 340	45	70*	130	69*	-1
3	109	Residence - B	US 340	350	58	370	62	+4
4, 5	109	Residence - B	US 340	350	58	320	63	+5
8	110	Residence - B	Access Road	75	44**	275	64	+20*
6	111	Residence - B	Access Road	845	44**	330	63	+19*
8	111	Residence - B	Access Road	845	44**	275	64	+20*
8	113	Commercial - C	Access Road	675	54	235	65	+11

Notes: Alternates 6 and 8 are the remaining build alternates under consideration.

Distances are from the centers of existing or proposed roadways.

All noise levels are hourly A-weighted.

\* Traffic noise impact

\*\* Measured Value

\*\*\* Located in the State of Virginia

**d. Evaluation**

Based on the previously outlined NAC, noise impacts were determined for the No-Build and six build alternates. Except for seven receptors under various alternates, all receptors fall under Land Use Activity Category B (67 dBA) (see Table IV-7). The seven non-Category B receptors are Category C commercial properties.

Levels that exceed the noise criteria (NAC and/or substantial increase criteria) are denoted for individual receptors by a single asterisk behind the applicable values in Table IV-7. All of the predicted violations occurred at receptors designated as NAC Land Use Category B. The number of properties that

each of the violated receptors represent for each build alternate is presented in summary form in Table IV-8. A discussion of the noise impacts for each alternate follows.

**TABLE IV-8  
SUMMARY OF IMPACTED PROPERTIES**

Alternate	Number of Impacted Receptors				Approximate Number of Impacted Properties <sup>5</sup>
	Approach, Equal, or Exceed NAC <sup>2</sup>	Substantial Increase Impact <sup>3</sup>	Both Criteria Exceeded <sup>4</sup>	Total	
<b>No-Build</b>	4	0	0	4	4
<b>1<sup>1</sup></b>	4	0	1	5	5
<b>3<sup>1</sup></b>	4	1	0	5	5
<b>4<sup>1</sup></b>	4	0	0	4	4
<b>5<sup>1</sup></b>	3	0	0	3	3
<b>6<sup>1</sup></b>	3	4	0	7	10
<b>8<sup>1</sup></b>	2	6	0	8	11

- <sup>1</sup> All impacted receptors are categorized NAC Activity Category B.
- <sup>2</sup> Refer to top of Table IV-6 for description.
- <sup>3</sup> Refer to bottom of Table IV-6 for description.
- <sup>4</sup> Defined by both criteria in Table IV-6.
- <sup>5</sup> Properties include homes, individual apartments, mobile homes, etc.

Note: Alternates 6 and 8 are the remaining build alternates under consideration. There is no double counting of impacted receptors (i.e. if the noise level at a receptor exceeds NAC and there is also a substantial increase in noise at that receptor, the receptor is counted only in the "Both Criteria Exceeded" column).

**1) No-Build**

For the No-Build Alternative, the NAC is exceeded at four sites. The impacted receptors represent three residential properties and one commercial property.

**2) Alternate 1**

Assessment of Alternate 1 considered the anticipated noise impacts on 25 residential receptors and five commercial receptors. From Table IV-7, the existing 1997 values at the receptors range from 47 to 67 dBA and vary from 60 to 69 dBA under the build alternate for the year 2020. For Alternate 1, the NAC is exceeded at four sites. In addition, at one site both NAC and increase criteria are expected to be violated. The impacted receptors represent five residential properties.

**3) Alternate 3**

Assessment of Alternate 3 considered the anticipated noise impacts on 29 residential receptors and five commercial receptors. From Table IV-7, the existing 1997 values at the receptors range from 47 to 70 dBA and vary from 60 to 69 dBA under the build alternate for the year 2020. For Alternate 3, the NAC is exceeded at four sites, and substantial increase impacts are anticipated at one site. The impacted receptors represent five residential properties.

**4) Alternate 4**

Assessment of Alternate 4 considered the anticipated noise impacts on 17 residential receptors and five commercial receptors. From Table IV-7, the existing 1997 values at the receptors range from 50 to 67 dBA and vary from 60 to 69 dBA under the build alternate for the year 2020. For Alternate 4, the NAC is exceeded at four sites. The impacted receptors represent four residential properties.

**5) Alternate 5**

Assessment of Alternate 5 considered the anticipated noise impacts on 12 residential receptors and four commercial receptors. From Table IV-7, the existing 1997 values at the receptors range from 56 to 66 dBA and vary from 58 to 68 dBA under the build alternate for the year 2020. For Alternate 5, the NAC is exceeded at three sites. The impacted receptors represent three residential properties.

**6) Alternate 6**

Assessment of Alternate 6 considered the anticipated noise impacts on 16 residential receptors and four commercial receptors. From Table IV-7, the existing 1997 values at the receptors range from 44 to 67 dBA and vary from 61 to 68 dBA under the build alternate for the year 2020. For Alternate 6, the NAC is exceeded at three sites, substantial increase impacts are anticipated at four sites. The impacted receptors represent ten residential properties.

**7) Alternate 8**

Assessment of Alternate 8 considered the anticipated noise impacts on 14 residential receptors and two commercial receptors. From Table IV - 7, the existing 1997 values at the receptors range from 44 to 67 dBA and vary from 56 to 68 under the build alternate for the year 2020. For Alternate 8, the NAC is exceeded at two sites, substantial increase impacts are anticipated at six sites. The impacted receptors represent eleven residential properties.

**e. Summary**

Table IV-8 provides a summary of the properties impacted by noise for each alternate by type of impact. The No-Build Alternative impacts four properties. Of the six build alternates under consideration, Alternate 5 impacts the least number of properties at three, Alternates 8 impacts the most properties at eleven.

**3. Abatement Measures**

Noise abatement measures were considered for all cases where noise impacts are predicted to occur. The abatement measures considered included: shifts in highway alignment, traffic system management measures, landscaping, property acquisition, and sound barriers.

**a. Shifts in Highway Alignment**

Highway alignment selection involves the horizontal or vertical orientation of the proposed improvements in such a way as to minimize impacts and costs. The selection of alternate alignments for noise abatement purposes

must consider the balance between noise impacts and other engineering and environmental parameters. For noise abatement, horizontal alignment selection is primarily a matter of locating the roadway at a sufficient distance from noise sensitive areas. The alternates in this study were developed to minimize costs and environmental impacts. Hence, further alteration of the proposed horizontal alignments is not reasonable or feasible from a planning and design standpoint.

**b. Traffic System Management Measures**

Traffic management measures that limit vehicle type, speed, volume, and time of operations are often effective noise abatement measures. For this project, traffic management measures are not considered appropriate for noise abatement due to their effect on the capacity and level of service on the proposed roadway. Additionally, US 340 is a primary rural highway and elimination of truck traffic would not be in keeping with the function of the facility.

**c. Landscaping**

Although vegetation does not generally make an efficient sound barrier, the use of landscaping can have psychological effects on decreasing perceived sound levels. The design of landscaping for such a purpose is dependent upon location and site-specific criteria, and requires details beyond the scope of this analysis. Therefore, vegetation was not considered for noise mitigation purposes in this report.

**d. Property Acquisition**

WVDOH policy does not allow for the purchasing of properties for the purpose of noise abatement. Therefore, property acquisition was not considered for noise abatement purposes in this report.

**e. Sound Barriers**

As with all types of noise abatement measures, sound barriers must prove to be reasonable and feasible for them to be considered in the project design phase. This is the premise by which sound barriers were evaluated for this project. The following is a summary of the evaluation process.

Prior to assessing specific sound barriers, several impacted areas were dropped from consideration. The initial investigation revealed those barriers would not be reasonable and/or feasible due to access requirements or isolated receptors.

The barrier analyses revealed additional areas in which sound barriers would not be reasonable or feasible because of other dominant noise sources (i.e., other roadways) contributing to the overall noise levels or sound barriers that are ineffective (unable to attain a minimum 5 dBA insertion loss). Stamina 2.0/Optima computer printouts for the sound barrier analyses are in the project file at WVDOH.

The final barrier evaluation involved determination of the cost effectiveness of the remaining sound barriers. The three locations where sound barriers were evaluated are shown in Exhibit IV-3, and the findings of this evaluation are summarized in Table IV-9. The three barriers that were investigated were found to be unreasonable because of costs. Based on WVDOH policy, the cost per benefited receptor must not exceed \$15,000.

**TABLE IV-9  
EVALUATION OF NOISE BARRIERS**

<b>Alternate</b>	<b>Barrier No.</b>	<b>Location</b>	<b>Length</b>	<b>Height</b>	<b>Affected Receptors</b>	<b>Number of Protected Properties</b>	<b>Barrier Cost</b>	<b>Cost Per Property</b>
6	1	West of Proposed Alternate 6 Sta. 184+50 to Sta. 192+00	750' (229m)	18' (5.5m)	22, 23	5	\$202,500	\$40,500
1	2	West of Proposed Alternate 1 Sta. 301+00 to Sta. 310+00	900' (274m)	14' (4m)	95, 97, 98	6	\$189,000	\$31,500
8	3	East of Proposed Alternate 8 Sta. 116+10 to Sta. 127+85	1175' (358m)	20' (5m)	22, 23	0	\$352,500	N/A

Note: Alternates 6 and 8 are the remaining build alternates under consideration.  
Estimated unit cost for barriers = \$15/ft<sup>2</sup>

There are no impacted areas where a sound barrier proved to be a reasonable and feasible abatement measure. Table IV-10 summarizes the reasons why barriers are not feasible or reasonable for all the impacted receptors.

**TABLE IV-10  
LOCATIONS WHERE SOUND BARRIER CONSTRUCTION  
IS NOT FEASIBLE OR REASONABLE**

<b>Alternate</b>	<b>Receptor No.</b>	<b>Reasons Barriers are not Feasible or Reasonable</b>
1, 3, 4, 5, 6, 8	1	Access Requirements <sup>1</sup>
6, 8	5	Access Requirements <sup>1</sup>
6, 8	14	Isolated Receptor <sup>3</sup>
6	22, 23	Cost Prohibitive <sup>2</sup>
8	22, 23, 24	Ineffective <sup>4</sup>
4	53	Access Requirements <sup>1</sup>
1	77	Isolated Receptor <sup>3</sup>
1	81	Isolated Receptor <sup>3</sup>
6	82	Isolated Receptor <sup>3</sup>
3, 4, 5	86	Isolated Receptor <sup>3</sup>
1	97	Cost Prohibitive <sup>2</sup>
1, 3, 4, 5	102	Isolated Receptor <sup>3</sup>
3	105	Isolated Receptor <sup>3</sup>
3	106	Isolated Receptor <sup>3</sup>
8	110	Isolated Receptor <sup>3</sup>
6, 8	111	Isolated Receptor <sup>3</sup>

Note: Alternates 6 and 8 are the remaining build alternates under consideration.

- <sup>1</sup> "Access Requirements" indicates that a barrier would conflict with access to the impacted property(s).
- <sup>2</sup> "Cost Prohibitive" indicates the cost per effected receptor > \$15,000.
- <sup>3</sup> "Isolated Receptor" indicates that the impacted receptor is located at a distance far enough away from other receptors that a barrier is obviously not feasible, and no cost/benefit analysis was performed.
- <sup>4</sup> "Ineffective" indicates that a barrier cannot attain the necessary insertion loss to be considered effective.

#### **4. Construction Noise**

The major construction elements of this project are expected to be earth removal, hauling, grading, and paving. General construction noise impacts, such as temporary speech interference for passersby and those individuals living or working near the project, can be expected, particularly from paving operations and grading equipment. However, considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours, these impacts are not expected to be substantial. So that the impact from construction noise is minimal, the contractor will be required to follow specifications concerning construction noise as contained in *WVDOH's Standard Specifications*.

#### **5. Summary**

The noise investigation identified several locations where noise impacts are likely to occur along the six build alternates under investigation. Alternate 8 impacts the most properties at 11 and Alternate 5 impacts the least at 3. Based on the alignments developed, noise abatement measures do not appear to be feasible or reasonable for any of the impacted areas. If during final design, the conditions along the selected alignment change substantially, noise abatement measures will be re-evaluated.

#### **6. Coordination With Local Officials**

The 23 CFR Part 772 delegates to highway agencies the responsibility for taking measures that are prudent and feasible to assure that the location and design of highways are compatible with existing and planned land uses. It is WVDOH's policy to promote compatibility between land development and proposed highway facilities.

To assist local authorities in exercising land use control over the undeveloped lands adjacent to the alternate roadways proposed for this project, a land use compatibility table (Table IV-11) was developed. Table IV-11 provides the distances at which the 72 and 67 dBA noise levels occur for every roadway segment. In addition, Table IV-11 presents noise levels at set distances from the proposed segments.

**TABLE IV-11  
LAND USE COMPATIBILITY INFORMATION**

Roadway Segment			Maximum Predicted Leq Noise Levels (dBA)			Contour Distance (ft)	
From	To	Alternate	50' (15m)	100' (30m)	200' (61m)	72dBA	67dBA
Beginning of Project	Rte. 612	1	75	70	66	75	160
Rte. 612	Smiths Rd./Drake Ln.	1	75	70	66	80	165
Smiths Rd./Drake Ln.	Ex. US 340/ Access Rd.	1	75	70	66	80	165
Ex. US 340/ Access Rd.	Rippon Rd.	1	75	70	66	80	165
Rippon Rd.	Wheatland Rd.	1	75	71	66	80	175
Wheatland Rd.	End of Project	1	75	71	66	85	175
Beginning of Project	Rte. 612	3	75	70	66	75	160
Rte. 612	Smiths Rd./Drake Ln.	3	75	70	66	80	165
Smiths Rd./Drake Ln.	Ex. US 340/ Access Rd.	3	75	70	66	80	165
Ex. US 340/ Access Rd.	Rippon Rd.	3	75	70	66	80	165
Rippon Rd.	Ex. US 340	3	75	71	66	80	175
Ex. US 340	Wheatland Rd.	3	75	71	66	85	175
Wheatland Rd.	End of Project	3	75	71	66	85	175
Beginning of Project	Rte. 612	4	75	70	66	75	160
Rte. 612	Smiths Rd./Drake Ln.	4	75	70	66	80	165
Smiths Rd./Drake Ln.	Access Rd.	4	75	70	66	80	165
Access Rd.	Meyerstown Rd.	4	75	70	66	80	165
Meyerstown Rd.	Ex. US 340	4	75	71	66	80	170
Ex. US 340	Wheatland Rd.	4	75	71	66	85	175
Wheatland Rd.	End of Project	4	75	71	66	85	175
Beginning of Project	Rte. 612	5	75	70	66	75	160
Rte. 612	Ex. US 340	5	75	70	66	80	165
Ex. US 340	Smiths Rd.	5	75	70	66	80	165
Smiths Rd.	Meyerstown Rd.	5	75	70	66	80	170
Meyerstown Rd.	Ex. US 340	5	75	70	66	80	170
Ex. US 340	Wheatland Rd.	5	75	71	66	85	175
Wheatland Rd.	End of Project	5	75	71	66	85	175
Beginning of Project	Rte. 612	6	75	70	66	75	160
Rte. 612	Ex. US 340	6	75	70	66	80	165
Ex. US 340	Drake Ln.	6	75	70	66	75	165
Drake Ln.	Private Rd.	6	75	70	66	80	165
Private Rd.	Rippon Rd.	6	75	70	66	80	165
Rippon Rd.	Wheatland Rd.	6	75	71	66	80	175
Wheatland Rd.	End of Project	6	75	71	66	85	175
Beginning of Project	Smiths Rd./Drake Ln.	8	75	70	66	75	160
Smiths Rd./Drake Ln.	Access Rd.	8	75	70	66	80	165
Access Rd.	Meyerstown Rd.	8	75	70	66	80	165
Meyerstown Rd.	Wheatland Rd.	8	75	71	66	80	170
Wheatland Rd.	End of Project	8	75	71	66	85	175

Note: Alternates 6 and 8 are the remaining build alternates under consideration.

## **I. Water Quality**

Possible roadway construction impacts to streams include increased sedimentation and the removal of the streamside canopy. Impacts to stream crossings will be minimized to the maximum extent possible through strict adherence to best management practices. None of the alternates would impact protected drinking water supplies.

## **J. Permits**

Construction of this project along any of the build alternates would require a Section 404 Dredge and Fill Permit from the US Army Corps of Engineers; and National Pollutant Discharge Elimination System (NPDES) permits from the Department of Environmental Management (DEM).

## **K. Wetlands**

A field review of the project area was conducted to verify wetland determinations and to identify dominant vegetation at the potentially impacted wetland systems. Wetland determinations were made using the three parameter approach (soils, vegetation, and hydrology) detailed in the 1987 US Army Corps of Engineers *Manual for Identification and Delineation of Jurisdictional Wetlands*. A field review of the project area was conducted to verify wetland determinations and to identify dominant vegetation at the potentially impacted

Within the project area, the NWI mapping indicated three wetlands associated with Bullsken Run and two unnamed tributaries of Long Marsh Run. Exhibit IV-4 displays the locations of these wetlands relative to the build alternates. Exhibits IV-5 and IV-6 display wetland systems #2 and #3, respectively. Wetland system #1 will not be impacted by any of the build alternates. Table IV-12 summarizes the impacts to each wetland by each build alternate.

### **1. Wetland Impacts**

Wetland System #2 is along an unnamed tributary to Long Marsh Run and is east of existing US 340. At approximately Station 165+50, Alternates 1, 3, and 4 cross this second unnamed tributary to Long Marsh Run at existing US 340.

To the east of US 340, the creek is approximately 7 feet (2 meters) wide. Arrowhead (*Sagittaria sp.*) was observed just east of the existing roadway. Approximately 30 feet (9 meters) east of US 340, the wetland area widens to approximately 30 feet (9 meters). The dominant vegetation is panic grass (*Panicum sp.*). The classification for this wetland area is Palustrine, emergent, persistent, temporarily flooded (PEM1A). *Sagittaria sp.* and *Panicum sp.* were observed at the Alternate 5 crossing of this creek which is east of existing US 340. The creek is approximately 8 feet (2.4 meters) wide at this location. The classification at this location is Palustrine, scrub-shrub, broad-leaved deciduous/emergent, persistent, temporarily flooded (PSS1/EM1A). Overland flow and a natural spring (Lippett Springs on Olive Boy Farm) supply hydrology to this system. Indicators of hydrology include inundation and saturated soil conditions. This wetland system is part of the continuous connected stream system of a tributary to Long Marsh Run. Alternates 6 and 8 do not impact this wetland system.

**TABLE IV-12  
WETLAND IMPACTS**

	<b>Wetland System #2</b>	<b>Wetland System #3</b>	<b>Total Area</b>
Alternate 1	0.22 acres (0.09 ha.)	0.89 acres (0.36 ha.)	1.11 acres (0.45 ha.)
Alternate 3	0.22 acres (0.09 ha.)	1.49 acres (0.61 ha.)	1.71 acres (0.70 ha.)
Alternate 4	0.22 acres (0.09 ha.)	1.82 acres (0.74 ha.)	2.04 acres (0.83 ha.)
Alternate 5	0.15 acres (0.06 ha.)	1.82 acres (0.74 ha.)	1.97 acres (0.80 ha.)
Alternate 6	0.00 acres (0.00 ha.)	0.65 acres (0.26 ha.)	0.65 acres (0.26 ha.)
Alternate 8	0.00 acres (0.00 ha.)	0.00 acres (0.00 ha.)	0.00 acres (0.00 ha.)

Note: Alternates 6 and 8 are the remaining build alternates under consideration.

Wetland System #3 is along Bullskin Run. On the east side of existing US 340, the Joseph Bell Farm spring begins flowing southeast into the main channel of Bullskin Run. The area between these two channels is also part of the wetland. Watercress (*Nasturtium officinale*) dominates the two channels. Sycamore (*Platanus occidentalis*) is the dominant tree between the two channels. Sphagnum moss (*Sphagnum sp.*) was also observed in this area. On the east side of existing US 340, watercress (*Nasturtium officinale*) also dominates. Rushes (*Juncus sp.*) are also on the east side. This wetland system is part of the continuous connected stream system of Bullskin Run. Alternates 3, 4, and 5 cross Bullskin Run at the location of existing US 340.

Alternates 1 and 6 cross Bullskin Run west of the existing US 340. This area is also dominated by watercress (*Nasturtium officinale*) within the channel. In the wetland area adjacent to the channel, sycamores (*Platanus occidentalis*) and red maple (*Acer rubrum*) are the dominant trees. *Sphagnum sp.* and wild onion (*Allium sp.*) are also at this location.

Classifications for the Bullskin Run System include Palustrine, forested/scrub-shrub, broad-leaved deciduous, temporarily flooded (PFO/SS1A); Palustrine, emergent, persistent, temporarily flooded (PEM1A); and Palustrine, scrub-shrub, broad-leaved deciduous/emergent, persistent, seasonally flooded (PSS1/EM1C). Hydrology is supplied to this wetland system by overland flow and by several natural springs along the length of Bullskin Run. Indicators of hydrology include saturated soil conditions and water-stained leaves.

Alternate 8 does not impact any wetlands. In comparison to the other five alternates, Alternate 6 has the least area of wetlands within the proposed right of way, with less than one acre, 0.65 acres (0.26 hectares). Alternate 4 has the greatest area of wetlands within the proposed right of way with 2.04 acres (0.81 hectares).

## **2. Wetland Avoidance and Minimization**

Because the wetland systems within the project area are linear and generally perpendicular to the project, avoidance of all wetland areas is not

possible. Minimization of wetland impacts was incorporated into the engineering studies for this project. Wetland areas were mapped and given consideration during the development of alternate alignments. The linear wetlands found in the project area were crossed at perpendicular or near perpendicular angles to minimize impacts. The acreage of wetlands provided are those within the proposed right of way. During final design, it is possible to further minimize impacts to wetlands.

### **3. Wetland Mitigation**

Conceptual mitigation for unavoidable wetland impacts typically involves enhancement and/or replacement. One option for enhancement of the existing streams in the area is replanting the banks adjacent to the streams with indigenous species. In many areas, little vegetation remains along the streams due to the surrounding agriculture. Replacement of wetland losses is accomplished adjacent to streams with minimal excavation, followed by planting with indigenous wetland species.

## **L. Water Body Modification and Wildlife Impacts**

### **1. Vegetational Community and Wildlife Impacts**

Since the project area is predominantly agricultural, impacts to natural communities and wildlife habitat is minimal and does not vary between alternates.

### **2. Water Resources**

Two unnamed tributaries of Long Marsh Run and Bullskin Run exist within the project study area. All six alternates need to cross stream runs; however, the location of crossing varies by alternative. The first tributary of Long Marsh Run is located in Clarke County, Virginia. It is located at the beginning of the project and is crossed by all six alternates at the existing crossing of US 340. No impacts to this tributary are anticipated from any of the build alternates.

Table IV-13 summarizes the stream impacts for each alternate. Alternates 1, 3, and 4 cross the second unnamed tributary of Long Marsh Run at approximately Station 163+50 near the existing alignment. These alternates will

impact between 440 to 450 feet (134 to 137 meters) along the stream. Alternate 5 crosses this unnamed tributary at approximately Station 155+00 at a location downstream (east) of the existing alignment and will impact approximately 420 feet (128 meters). Alternates 6 and 8 will cross the unnamed tributary at a location upstream of the existing alignment. Alternate 6 crosses at approximately Station 160+00 and will impact 400 feet (122 meters). Alternate 8 will cross at approximately Station 95+00 and will impact approximately 250 feet (76 meters).

**TABLE IV-13  
STREAM IMPACTS**

	<b>Long Marsh Run Tributary</b> feet (meters)	<b>Bullskin Run</b> feet (meters)	<b>Total</b> feet (meters)
Alternate 1	445 (136)	540 (165)	985 (301)
Alternate 3	440 (134)	570 (174)	1010 (308)
Alternate 4	450 (137)	670 (204)	1120 (341)
Alternate 5	420 (128)	670 (204)	1090 (332)
Alternate 6	400 (122)	470 (143)	870 (265)
Alternate 8	250 (76)	375 (114)	625 (190)

Note: Alternates 6 and 8 are the remaining build alternates under consideration.

Alternates 1 and 6 cross Bullskin Run at approximately Station 301+00. The location of the crossing is similar for these two alternates, slightly upstream of the existing alignment. Alternates 1 and 6 will impact approximately 540 and 470 feet (165 to 143 meters), respectively. Alternate 8 crosses Bullskin Run at Station 233+00 west of Alternates 1 and 6 and will impact approximately 375 feet (114 meters). Alternates 3, 4, and 5 cross Bullskin Run near the existing alignment. Alternate 3 crosses Bullskin Run at approximately Station 298+00 and will impact approximately 570 feet (174 meters). Alternate 4 crosses Bullskin Run at approximately Station 303+50 and Alternate 5 crosses Bullskin Run at approximately Station 300+00. Both Alternates 4 and 5 will impact approximately 670 feet (204 meters).

All stream-runs are contained within box or pipe culverts located to minimize channel modifications. As necessary, channel lining is utilized to minimize erosion at the culvert ends.

Two man-made excavated ponds have been identified within the project vicinity. Pond #1 is located on the north side of Jefferson County 21. Pond #2 is located on the east side of Jefferson County 21 which turns in a northerly direction east of Pond #1. A third pond, Pond #3, was identified on the south side of Access Road east of the railroad tracks. The locations of these ponds in relation to the various build alternates are depicted in Exhibit IV-7. Ponds #1 and #2 are partially impacted by Alternate 5. The impact to Pond #1 is 0.1 acres (less than 0.1 hectares) and the impact to Pond #2 would be 0.2 acres (0.1 hectares). Alternate 8 is the only alternate in the vicinity of Pond #3 and is not anticipated to have any impacts. Alternates 1, 3, 4, and 6 do not impact any ponds.

Three springs were identified within the project vicinity. Lippett spring on Olive Boy Farm is located along the second unnamed tributary of Long Marsh Run. The Henry Baker Farm spring and the Joseph Bell Farm spring are located along Bullsken Run. The Henry Baker Farm spring lies west of US 340 and the Joseph Bell Farm spring lies adjacent to the east side of US 340. The locations of these springs relative to the build alternates are depicted in Exhibit IV-8. Alternates 3, 4, and 5 impact the Joseph Bell Farm spring. These alternates include construction east of existing US 340 where this spring is located. The Baker Farm spring is located adjacent to Alternate 8 and may be impacted by the right of way. None of the other springs are impacted by any of the build alternates. Impacts to wetlands associated with these stream runs are discussed in Section IV-K-1.

## **M. Floodplain Impacts**

A floodplain evaluation was conducted in accordance with Executive Order 11988 "Floodplain Management" and 23 CFR Chapter 1, Subpart A. This evaluation is based on the results of the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Mapping for the study area. The Community Panel used to determine the 100-year floodplain boundaries is 540065 0065B in West

Virginia. Exhibit IV-9 depicts the 100-year floodplain limits in relation to the build alternates.

### **1. Floodplain Encroachments and Risk**

Encroachment on floodplains by structures and fill can reduce flood-carrying capacity, increase flood height and velocities, and increase flood hazards beyond encroachment itself. As part of the National Flood Insurance Program, FEMA has determined floodway boundaries as a tool for floodplain management. Based on FEMA's definition, the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent floodplain areas that need to be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to one foot, provided that hazardous velocities are not produced. The area between the floodway and the 100-year floodplain is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water surface elevations above FEMA's published floodway elevation.

Location studies and conceptual design have taken into consideration all factors to minimize impacts to floodplains. All six proposed alternates cross the floodplain that is associated with Bullskin Run. All six alternates cross this floodplain at perpendicular or near perpendicular angles. Alternates 3, 4, and 5 cross the floodplain near the location of the existing US 340 alignment while Alternates 1, 6, and 8 cross upstream of the existing alignment resulting in greater floodplain impacts. Table IV-14 contains the floodplain impacts for each build alternate. Alternate 4 has the least effect on floodplains with 5.3 acres (2.2 hectares) of impact. Alternate 8 has the greatest impact on floodplains with 9.1 acres (3.8 hectares). The No-Build Alternative has no floodplain impacts.

### **2. Floodplain Values**

Construction of any of the build alternates increases the amount of impervious surface area within the study area, thereby increasing stormwater runoff. The area impacted by this increased runoff is minor in relation to the

remaining pervious surface areas. The increased amount of road surface draining into the area is very small in relation to overall drainage areas.

**TABLE IV-14  
FLOODPLAIN IMPACTS**

<b>Alternate</b>	<b>Floodplain Impacts</b>	
	<b>acres</b>	<b>hectares</b>
Alternate 1	7.6	3.1
Alternate 3	5.5	2.2
Alternate 4	5.3	2.2
Alternate 5	5.4	2.2
Alternate 6	7.7	3.2
Alternate 8	9.1	3.8

Note: Alternates 6 and 8 are the remaining build alternates under consideration.

Detailed hydraulic surveys and studies are performed during the design phase of the project. The effect of the new roadway on stormwater discharge is evaluated to insure no substantial increase in downstream flooding occurs when residences are present along the stream.

It is expected that backwater elevations and velocity increases at floodplain encroachments are nonexistent or minimal. Limits within which activity could take place are restricted to that necessary for the conduct of work and are defined. Under the conditions described herein, any impacts to the natural and beneficial floodplain values associated with the project are negligible.

### **3. Floodplain Development**

The adopted comprehensive plan of Jefferson County, West Virginia defines floodplains as a natural resource which needs to be protected from development, deforestation, salutation from adjoining uses, and draining or filling

of wetland areas. No incompatible floodplain development is anticipated in conjunction with the build alternates.

#### **4. Mitigation**

The location and conceptual design of the build alternates at floodplain involvement were carefully addressed to successfully mitigate increases in flooding risk and substantial environmental impacts. Potential impacts to the floodplains throughout the project area as a result of erosion are mitigated through strict adherence to best management practices.

#### **N. Wild and Scenic Rivers**

There are no wild or scenic rivers within the project study area.

#### **O. Threatened or Endangered Species**

Under federal law, any action which is likely to result in a negative impact to federally protected plants or animals is subject to review by the US Fish and Wildlife Service (USFWS), under one or more provisions of the Endangered Species Act (ESA) of 1973. Even in the absence of federal actions, the USFWS has the power, through Section 9 of the ESA, to exercise jurisdiction on behalf of a protected plant or animal.

There is the potential for the project to impact the Indiana bat (*Myotis sodalis*) a federally listed endangered species. No other federally listed or proposed threatened/endangered species are known to exist in the project area with the possible exception of occasional transient species. However, according to correspondence received from the US Fish and Wildlife Service, the loggerhead shrike (*Lanius ludovicianus*), a species of concern, may utilize the project area.

A Biological Assessment for the Indiana Bat was prepared to determine if any of the six build alternates would have an effect on this endangered species. To date, no Indiana bats have been located in the Jefferson County or the Shenandoah Valley of West Virginia. Therefore, there will be no impacts to existing Indiana bat hibernacula.

Land cover and land use of the areas around the six build alternates were evaluated to determine if potential roosting and foraging areas exist within a two mile radius of the build alternates. The biological assessment study area encompasses 21,961 acres (8,958 hectares) or 34.3 square miles (88.8 square kilometers). Vegetation communities within the study area range from remnant forest to agricultural lands. Agricultural lands consisting of row crop, orchard and pasture comprise approximately 91 percent of biological assessment area. Remnant forested stands are located sporadically along fence rows, minor drainages and Bullskin Run. Forested areas in the study area cumulatively comprise only 1,932 acres (788 hectares) or approximately 3 square miles (8 square kilometers) and are generally comprised of the oak-hickory forest type. There is some residential development with the study area concentrated in the Village of Rippon and immediately north of the proposed improvements. The percentages of residential as well as commercial and industrial development within the study area is minute.

Given the composition of land cover in the study area, and reported summer habitat requirements of the species, it is unlikely that the Indiana bat would be found in an area mostly devoid of trees and water such as the project study area. The assessment of the study area for potential roost and forage habitat shows that with any of the alternates under consideration, less than one tenth of a percent of the available habitat would be impacted. Therefore, none of the six build alternates will impact the Indiana bat. Based on the Biological Assessment for the Indiana Bat, the U.S. Fish and Wildlife Service concluded that 17 acres of habitat will not be taken with any of the alternates and therefore the project will not have an adverse effect on the Indiana bat. The U.S. Fish and Wildlife Service correspondence stating that no further Section 7 Consultation is required for the project is included in Appendix B.

The West Virginia Division of Natural Resources was contacted for information on rare and protected species that may occur in the study area. The only record within the vicinity of the project is of a loggerhead shrike (*Lanius ludovicianus*) nest at the intersection of Jefferson County 19 and Jefferson County 13/2, west of the study area. The loggerhead shrike was a former federal

candidate for listing but is not currently federally listed. The state rank is S1. The S1 rank is based on five or fewer documented occurrences, or very few remaining individuals within the state. It is considered extremely rare or critically imperiled. The West Virginia Natural Heritage Program ranks this species as G4G5. The G4 rank applies to species that are common and apparently secure globally, though it may be rare in parts of its range, especially at the periphery. The G5 rank applies to species that are very common and demonstrably secure; though it may be rare in parts of its range, especially at the periphery.

The loggerhead shrike typically occupies closely grazed pastures with scattered shrubs and trees. Shrubs and trees along fence lines are often used for perching, nesting, and roosting. The loggerhead shrike feeds chiefly on invertebrates. The preferred habitat of the loggerhead shrike is open land near brushy areas and thickets. Impacts by the proposed project to the habitat of the loggerhead shrike are minimal and do not vary between alternates.

## **P. Historic and Archaeological Preservation**

In accordance with the National Historic Preservation Act of 1966, the requirements of 36 CFR 800, and Executive Order 11593, historic and archaeological resources were identified and the impacts evaluated for the six build alternates under consideration.

Based on consultation with the West Virginia Division of Culture and History, State Historic Preservation Officer (SHPO), a preliminary determination of effect and adversity was made for each individual property and district listed or eligible for listing on the National Register (See Appendix B for correspondence). One of three possible preliminary determinations is provided for each build alternate in conjunction with each historic resource: no effect, no adverse effect, or adverse effect.

An alternate is considered to have an effect on a historic resource whenever any condition of the alternate causes or may cause any change, beneficial or adverse, in the quality of the characteristics that qualify the property to meet the criteria of the National Register. An adverse effect will occur when an alternate

diminishes the integrity of the location, design, setting, materials, workmanship, feeling, or association of the property or district that contributes to its significance in accordance with the National Register criteria. Adverse effects on National Register sites may occur under any one or more of the following conditions:

- Criterion 1: Physical destruction, damage, or alteration of all or part of the property.
- Criterion 2: Isolation of the property from or alteration of the character of the property's setting when the character contributes to the property's qualification for the National Register.
- Criterion 3: Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting.
- Criterion 4: Neglect of a property resulting in its deterioration or destruction.
- Criterion 5: Transfer, lease, or sale of a property without adequate conditions or restrictions regarding preservation of the property's significant historic features.

The effects of an alternate that would otherwise be found to be adverse may be considered as being not adverse under the following conditions:

- When the historic property is of value only for its potential contribution to archaeological, historic, or architectural research, and when such value can be substantially preserved through the conduct of appropriate research, and such research is conducted in accordance with applicable professional standards and guidelines.
- When the undertaking is limited to the rehabilitation of buildings and structures and is conducted in a manner that preserves the historic and architectural value of affected historic property through conformance with the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*.
- When the undertaking is limited to the transfer, lease, or sale of a historic property, and adequate restrictions or conditions are included to ensure preservation of the property's significant features.

The preliminary effect determinations identified for each historic and archaeological resource are summarized in Table IV-15 and discussed in the following sections. The correspondence from SHPO is included in Appendix B. After the selection of the Preferred Alternative, the SHPO will be coordinated with to agree on the final determinations of effect for each historic resource.

**TABLE IV-15  
PRELIMINARY DETERMINATION OF EFFECT**

<b>Historic Resource</b>	<b>*EFFECT BY BUILD ALTERNATE</b>					
	Alternate 1	Alternate 3	Alternate 4	Alternate 5	Alternate 6	Alternate 8
Ripon Lodge Archaeological Sites	No Adverse Effect	No Effect	No Effect	No Effect	No Adverse Effect	No Effect
Wheatlands Farm Archaeological Site	No Adverse Effect	No Effect	No Effect	No Effect	No Adverse Effect	No Effect
Long Marsh Run Rural Historic District	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect
Kabletown Rural Historic District	Adverse Effect	Adverse Effect	Adverse Effect	Adverse Effect	Adverse Effect	Adverse Effect
Village of Rippon Historic District	No Adverse Effect	No Adverse Effect	Adverse Effect	No Adverse Effect	No Adverse Effect	No Effect
Balclutha	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect
Olive Boy Farm	Adverse Effect	Adverse Effect	Adverse Effect	Adverse Effect	Adverse Effect	Adverse Effect
Glenwood	No Effect	No Effect	No Adverse Effect	Adverse Effect	No Effect	No Effect
Wayside Farm	No Effect	No Effect	No Adverse Effect	Adverse Effect	No Effect	No Effect
Ripon Lodge	Adverse Effect	Adverse Effect	No Effect	No Effect	Adverse Effect	No Adverse Effect
Byrdland	No Effect	Adverse Effect	Adverse Effect	Adverse Effect	No Effect	No Effect
Straithmore	Adverse Effect	Adverse Effect	Adverse Effect	Adverse Effect	Adverse Effect	No Effect
William Grubb Farm	No Adverse Effect	No Effect	No Effect	No Effect	No Adverse Effect	No Adverse Effect

Note: Alternates 6 and 8 are the remaining build alternates under consideration.

\* The Preliminary Determinations of Effect for the project were prepared prior to the implementation of the revised Section 106 Guidelines on January 11, 2001.

## **1. Archaeological Sites**

The West Virginia Division of Culture and History reviewed the “Phase I Cultural Resource Investigation Architectural Survey and Archaeological Assessment, Proposed Improvements to US 340 Jefferson County, West Virginia” and the “Predictive Model Addendum”. In accordance with Section 106 of the National Historic Preservation Act, both documents were approved.

Based on the approval of the predicted model, the model was tested and a sample survey was performed and reviewed by the SHPO. The findings of the model testing and survey were documented in the “Archaeological Sample Survey Report” dated August 1999. The survey report and findings were concurred with by the SHPO with on November 23, 1999 and December 7, 1999. See Appendix B for the correspondence.

The findings of this survey recommend further investigations for four archaeological sites. These four sites have the potential to provide early historic settlement information for the project area. Three of the four sites are located within the Ripon Lodge National Register property, and the remaining site is located on the Wheatlands Farm.

The three sites within the Ripon Lodge National Registered property appear to be contributing elements to the Ripon Lodge property. The measures to minimize harm and the avoidance alternates for these sites are discussed in the Section 4(f) Evaluation located in Section V.

Two of the sites are impacted from right of way acquisition associated with Alternate 6, and one is impacted by right of way acquisition associated with Alternate 1. Alternate 3 impacts the Ripon Lodge property but will not likely impact these three archaeological sites. Alternates 4, 5, and 8 will not impact the Ripon Lodge property or the sites.

Based on the current site information, the preliminary determination of effect for these three sites from Alternates 1 and 6 is a “no adverse effect”. The preliminary determination of effect for Alternates 3, 4, 5, and 8 is “no effect”.

The Wheatlands Farm contains one site that is considered eligible for listing on the National Register as an historic archaeological site. The measures to minimize harm and the avoidance alternates for this site are discussed in the Section 4(f) Evaluation located in Section V.

Alternates 1 and 6 will impact the Wheatlands Farm by land acquisition for the conceptual right of way. Alternates 3, 4, 5, and 8 will not impact this Farm. Based on coordination with the WVDOT, Alternates 1 and 6 have been preliminarily determined by the SHPO to have a “no adverse effect” on the Wheatlands Farm. Where as, a “no effect” determination is preliminarily considered for Alternates 3, 4, 5, and 8.

If a build alternate is selected as the Preferred Alternative, additional testing of these four sites will be conducted to determine eligibility and the final determinations of effect. A detailed archaeological survey of all medium and high probability locations along the Preferred Alternative will also be conducted. WVDOT will develop a programmatic agreement with the SHPO concerning these archaeological investigations for the Preferred Alternative. Mitigation measures for any impacts to archaeological sites will be reviewed and coordinated with the State Historic Preservation Office. These measures may include but will not be limited to data recovery.

## **2. Historic Architecture**

Numerous historic resources within the project area were identified in the Architectural Survey and Architectural Evaluation technical reports and Addendum for the proposed project. The recommendations made in these reports for the eligible historic properties and their associated boundaries were concurred with by the SHPO on January 7, 2000 and June 2, 2000.

The Ripon Lodge and the William Grubb Farm are listed on the National Register of Historic Places. Another, Balclutha, is partially located in Clarke County, Virginia. It is included on the National Register and the Virginia Landmarks Register as a contributing resource in the Long Marsh Run Rural Historic District of Clarke County, Virginia. The Long Marsh Run Rural Historic

district is listed on the National Register. Existing US 340 extends through this district which encompasses over 16 square miles of land.

There are two historic districts and five individual properties eligible for listing on the National Register in the study area. The two eligible historic districts include the Kabletown Rural Historic District and the Village of Rippon Historic District. The individual eligible historic properties include Olive Boy Farm, Glenwood, Wayside Farm, Byrdland, and Straithmore.

Table IV-15 lists the preliminary determinations of effect from the six alternates on each historic resource. The measures to minimize harm to these historic resources and avoidance alternatives are discussed in the Section 4(f) Evaluation of this document (Section V).

The Kabletown Rural Historic District encompasses approximately 18 square miles (4,500 hectares) from the Shenandoah River to US 340. Alternates 1, 3, 4, 5, 6, and 8 will impact the western edge of this district by land acquisition for the conceptual right of way. A preliminary determination reveals all six of these alternates will have an “adverse effect” on the historic resource. The southern end of Alternate 8 at the state line extends along the western edge of the Kabletown Rural Historic District along existing US 340. This alternate was initially developed as an avoidance alternative for the Kabletown Rural Historic District. However, the design constraints introduced by remaining within the existing right of way in Clarke County, Virginia to avoid impacting the Long Marsh Run Rural Historic District and the Clarke County Agricultural District made avoiding the Kabletown Rural Historic District unfeasible. Approximately 6.1 acres (2.5 hectares) of right of way will be required from the Kabletown Rural Historic District at the state line between Virginia and West Virginia. This area is located at the most western edge of the Rural Historic District boundary along existing US 340.

The Village of Rippon Historic District includes thirty-two recorded properties as contributing elements to the eligible historic district. The district is located along the existing US 340 and encompasses the junctures with Jefferson County 21 and Jefferson County 19. Alternate 4 impacts the southeast edge of the

district by land acquisition for the conceptual right of way. Further, Alternates 1, 3, 4, 5, and 6 visually impact the district. Alternate 8 will not impact this district since it is located west of the railroad. A preliminary determination reveals that Alternate 4 is considered to have an “adverse effect” on the historic resource. A preliminary determination reveals that Alternates 1, 3, 5, and 6 are considered to have “no adverse effect” on the historic resource. Alternate 8 is considered to have “no effect” on the Village of Rippon.

Existing US 340 extends through the Long Marsh Run Rural Historic District at the south end of the project in Clarke County, Virginia. The Long Marsh Run Rural Historic District encompasses 16 square miles in the northern area of Virginia. The improvements proposed for all six of the build alternates at this location will be constructed within the existing right of way. No property will be acquired from the Rural Historic District. The alternates are not anticipated to have any visual impacts to the Rural District since existing US 340 already extends through the district and the location of the roadway will not change in this area. A preliminary determination reveals that all six alternates are considered to have a “no adverse effect” on the Long Marsh Run Historic Rural District.

Balclutha is located at the south end of the project, on the west side of US 340. It is located in both Virginia and West Virginia. None of the Alternates impact the Balclutha property with land acquisition for the conceptual right of way. Alternates 6 and 8 may have some visual impacts to the property. These potential visual impacts will not alter the historic features of Balclutha that make it eligible for the National Register. The preliminary determination of effect for all six of the Alternates on Balclutha is a “no adverse effect”.

The Olive Boy Farm property is located along Jefferson County 38, east of US 340. It is directly impacted by land acquisition for the conceptual right of way by all six of the build alternates. Alternates 1, 3, 4, and 5 also visually impact the Olive Boy Farm. A preliminary determination reveals that Alternates 1, 3, 4, 5, 6, and 8 are considered to have an “adverse effect” on the historic resource.

The Glenwood property is located south of the community of Rippon. The property is on the east side of US 340. Glenwood is directly impacted under Alternate 5 by land acquisition for the conceptual right of way. In addition, Alternates 1, 3, 4, and 5 visually impact the property with Alternate 4 in the closest proximity. Alternate 5 is considered to have an “adverse effect” on the property and Alternate 4 a “no adverse effect”. All of the other alternates are considered to have “no effect” on the historic resource.

The Wayside Farm property is located southeast of the community of Rippon. The property is on the east side of US 340. It is directly impacted under Alternate 5 by land acquisition for the conceptual right of way. In addition, Alternates 4 and 5 visually impact the property. A preliminary determination reveals that Alternate 4 is considered to have “no adverse effect” on the historic resource while Alternate 5 will have an “adverse effect”. All of the other alternates are considered to have “no effect” on the historic resource.

The Ripon Lodge is located along existing US 340 just north of the Village of Rippon. The Ripon Lodge is one of the most prominent properties within the area. Cultural resource investigations indicate that the National Register boundaries for the Ripon Lodge property were expanded in 1998 to include important outbuildings. The property is directly impacted under Alternates 1, 3, and 6 by land acquisition for the conceptual right of way. Alternates 1, 3, and 6 also visually impact the property. Alternate 8 extends west of the railroad immediately behind and west of the Ripon Lodge property. This alternate will not be visible from the main house but may be seen from the barns in the back of the property. A preliminary determination reveals that Alternates 1, 3, and 6 are considered to have an “adverse effect” on the historic resource. Alternate 8 is considered to have a “no adverse effect” and Alternates 4 and 5 have “no effect” on the historic resource.

Byrdland is located at the north end of the project, along the east side of US 340. It is directly impacted under Alternates 3, 4 and 5 by land acquisition for the conceptual right of way. In addition, these three alternates visually impact the property. A preliminary determination reveals that Alternates 3, 4, and 5 are

considered to have an “adverse effect” on the historic resource. Alternates 1, 6, and 8 have “no effect” on the historic resource.

The Straithmore property is located on the north end of the project along the existing US 340. All of the proposed build alternates lie west of the historic property. However, the property is impacted by land acquisition for driveway realignment associated with Alternates 3, 4, and 5 and conceptual right of way under Alternates 1 and 6. In addition, all of these alternates have a visual impact to the property. Alternate 8 is located further west than the other five alternates and will not impact the Straithmore property. A preliminary determination reveals that Alternates 1, 3, 4, 5, and 6 are considered to have an “adverse effect” on the historic resource and Alternate 8 will have “no effect”.

The William Grubb Farm is located on the north end of the project along Wheatland Road. The property is on the west side of the existing US 340. All the proposed build alternates except Alternate 8 are located east of the historic property. It is not directly impacted by land acquisition under any of the alternates. However, Alternates 1, 6, and 8 do visually impact the property. Alternates 1 and 6 will visually impact the property to the west where it connects to existing US 340. Alternate 8 will visually impact the property with the embankment required for the bridge over the railroad. A preliminary determination reveals that Alternates 3, 4, and 5 are considered to have “no effect” on the historic resource and Alternates 1, 6, and 8 are considered to have a “no adverse effect”.

If any of the historic properties or districts, included on or eligible for the National Register of Historic Places, are adversely effected by the selected Preferred Alternative, the Advisory Council on Historic Preservation may become a consulting party for the project in accordance with Section 106 of the Historic Preservation Act. Measures to mitigate the adverse effects will be identified and set forth in a Memorandum of Agreement (MOA). This MOA will be signed by the State Historic Preservation Office, the Federal Highway Administration, the West Virginia Department of Transportation, other invited signatories, and, if participating, the Advisory Council on Historic Preservation.

## **Q. Potential Hazardous Material Sites**

An initial assessment of potential contamination sites was conducted for the six alternates. This review consisted of a field visit to determine business names, types, and site characteristics of parcels that were within the project vicinity and review of computer data base files from the West Virginia Division of Environmental Protection. In general, the sites discussed are contained within the proposed right of way or within 500 feet (150 meters) of the proposed right of way for the six alternates under consideration. The Division of Environmental Protection's data base files provided information on known hazardous waste generators, underground storage tanks, and reported contamination incidents. The Jefferson County Planning Commission and the County Engineer were consulted for any available information on potential contamination sites. They did not have information relevant to the project study area. Research into past land uses was conducted. Past land uses may present a concern since contaminants can remain in the environment for many years. Historic aerial photography from 1979 was available from the Jefferson County Planning Commission for the study area but did not indicate any additional potential contamination sites. Long-time residents of the area were also questioned regarding past land uses. A few gas stations formerly existed in the community of Rippon; however, these are too far from the locations of the proposed alternates to be of concern.

After review of the available information on each site, a determination was made of the risk of encountering unknown contamination at that site. These assessments were based on the likelihood that contamination exists at the site and on the degree of concern this presents relative to the build alternates under consideration.

The risk system identifies four degrees of risk: No, Low, Medium, and High. This categorization is for general purposes. Sites where known spills or leaks have occurred may not necessarily present a high degree of concern if the environmental agencies are aware of the situation, enforcement actions are being taken, and remedial activities are either completed or underway. The degrees of risk are defined as follows:

**No Risk** means that the observed condition of the site, the state records, and the current or previous business activity does not support a contamination risk.

**Low Risk** means that the business handles hazardous materials or petroleum products but has a clean appearance and no violations. An example of such a business might be a gas station with new underground storage tanks, monitoring wells, leak prevention system, no automotive maintenance, and a clean record in the environmental agency's files.

**Medium Risk** indicates there is a higher concern or may include sites of known contamination. Medium risk sites may require some follow-up prior to right of way acquisition.

**High Risk** suggests that additional studies are recommended and that soil and groundwater sampling and laboratory analysis may be required.

## **1. Rainbow Road Club**

This facility is located just north of the state line between Virginia and West Virginia on the west side of the existing US 340. Upon field review, there was a lot of farm equipment to the rear of the building with a large garage on the property. It appears that light repair work is done at this location. Two rusted tanks were also observed to the rear of the property, of the size typically used for home heating oil. Alternates 1, 3, 4, 6, and 8 are located adjacent to the property along the existing US 340. Alternate 5 is approximately 200 feet (61 meters) to the east of the property. This property is given an assessment of low risk for all of the six alternates based on the minimal quantities of hazardous materials likely to be utilized on-site.

## **2. Residence**

One residence of concern is located on the west side of the existing US 340, east of Chapmans Trailer Court and west of the community of Rippon. An underground storage tank was identified on this property. During field review, an antique gas pump was visible. The house was built around 1920. The owner was questioned about the gas pump. It was there when he bought the property in the 1970's and he was unaware if there was an underground storage tank on the property. There was no record of this site in the West Virginia Division of Environmental Management's underground storage tank database. Right of way is

required from this property for Alternates 1 and 3. The edge of the proposed right of way is approximately 50 feet (15 meters) away from the gas pump. Alternate #6 is approximately 450 feet (137 meters) from the gas pump. This site is given a high risk assessment for Alternates 1 and 3 due to their proximity and a low risk assessment for Alternate 6. The site poses no risk to Alternates 4, 5, and 8 due to their distance from the site.

### **3. Ripon Lodge**

This residence is located north of the community of Rippon, west of the existing US 340. An underground storage tank located next to the Ripon Lodge. Upon field review, the only possible indication of this tank was a hill that appeared to have been created by fill. There was no evidence to confirm that a tank once existed or exists on this property. The West Virginia Division of Environmental Management database did not have any information on this site. Alternate 1 is approximately 200 feet (61 meters) west of the indicated tank location and Alternate 3 is approximately 200 feet (61 meters) east of the location. This site is given a high-risk assessment for Alternates 1 and 3 based on the lack of information available. The site poses no risk to Alternates 4, 5, 6, and 8.

### **4. Byrdland**

This residence is located on the east side of the existing US 340, south of Bullskin Run. Another antique gas pump was observed at this residence during field review. No information is available on if the underground storage tank associated with this pump has been removed. This site could not be found in the West Virginia Division of Environmental Management's database. Alternates 4 and 5 are located approximately 400 feet (122 meters) from the gas pump. Despite the lack of information on a potential underground storage tank at this site, it is given an assessment of low risk for Alternates 4 and 5 due to the distance from the proposed right of way. This site poses no risk to Alternates 1, 3, 6, and 8.

### **5. Dave's Auto Sales**

This facility is located on the east side of the existing US 340, just north of Bullskin Run in the Wheatland area. There is currently a 275 gallon

(1041 liters) used oil tank on-site that is picked up and recycled by a company operating out of Baltimore. The building was formerly Baney's Mill Garage. It was a gas station at one time. According to the current business owner, the tanks were removed approximately 8 years ago and there are no known contamination problems on-site related to these tanks. The US Environmental Protection Agency Hazardous Waste Identification Number is WVD988786414. Records indicate that the facility generates less than 100 kg (220 lbs.) per month of hazardous materials. Alternates 1 and 6 are located adjacent to this property. The facility lies directly within the proposed right of way for Alternates 3, 4, and 5. This site is given an assessment of medium risk for Alternates 1, 3, 4, 5, and 6 based on the available information. The site is given no risk for Alternate 8.

## **R. Visual Impacts**

A rating scale was used to qualify the relative degree of project impact based on the importance of the visual resource, existing landscape, sensitivity of the viewer, and the visual contrast imposed by a new facility to the existing visual surroundings. The ratings are characterized as follows:

**No Impact** - The view of the proposed action has minor implications to the existing landscape or there is no impact at all.

**Low Impact** - The view of the project is limited, the visual resource is limited in importance, there are dominating visual intrusions in the viewshed from other sources, or there is a weak visual contrast between the facility and the landscape. If any of the proposed actions are closer to the resource than the existing facility, but do not necessarily create a visual impact, per se, due to visual intrusions, it has been rated as having a low impact.

**Moderate Impact** - The view of the proposed action is a moderate intrusion into the visual environment with greater contrast than the low impact but not as great as a high impact.

**High Impact** - The proposed action is in proximity and visible to viewers, has a strong contrast with the landscape, is in an area of importance with limited visual intrusions, or involves substantial viewer sensitivity.

**1. Site Impacts**

Based on these definitions, each site was evaluated for visual impacts as a result of the proposed action. Table IV-16 summarizes the degree of impact for each visually sensitive resource. Photographs were taken in reference to each site to show the relation of the proposed action to each private historic property.

**TABLE IV-16  
VISUAL IMPACT RATINGS**

<b>Visually Sensitive Resource</b>	<b>IMPACT RATING BY ALTERNATE</b>					
	Alternate 1	Alternate 3	Alternate 4	Alternate 5	Alternate 6	Alternate 8
Kabletown Rural Historic District	Low	Low	Moderate	Moderate	Low	Low
Village of Rippon	Moderate	Moderate	Moderate	Low	Low	No
Long Marsh Run Rural Historic District	Low	Low	Low	Low	Low	Low
Balclutha	Low	Low	Low	Low	Low	Low
Olive Boy Farm	Low	Low	Low	High	Low	Low
Glenwood	Low	Low	Moderate	Moderate	No	No
Wayside Farm	No	No	Moderate	High	No	No
Ripon Lodge	High	High	Low	Low	High	Moderate
Byrdland	No	Low	Moderate	Moderate	No	No
Straithmore	Low	Low	Low	Low	Low	No
William Grubb Farm	Low	No	No	No	Low	High

Note: Alternates 6 and 8 are the remaining build alternates under consideration.

**a. Kabletown Rural Historic District**

The Kabletown Rural Historic District includes approximately 18 square miles (4,500 hectares). Existing US 340 currently provides a two-lane road extending north to south through the western edge of this district. A majority of the large farms and country estates contributing to the pristine agricultural landscape are located east of existing US 340. Alternates 1, 3, and 6 are located west of US 340 and considered to have a low visual impact to the district due to their close proximity to US 340. Alternate 8 extends to the west of the district and is also considered to have a low visual impact to the district. Alternate 4 and 5 are located east of US 340. These alternates introduce a visual intrusion into the agricultural landscape by dividing this landscape from some of the other contributing elements, such as Wayside Farm and the Village of Rippon, by a new four-lane roadway. Alternates 4 and 5 are considered to have a moderate visual impact on the district.

**b. Village of Rippon Historic District**

Currently, US 340 is a two-lane road through the village. Improvements route traffic west or east of the village. Alternates 1, 3, 6, and 8 bypass the village to west. Alternates 1 and 3 are located approximately 250 feet (76 meters) from the western boundary of the Village of Rippon Historic District. Alternate 6 is located approximately 1,100 feet (335 meters) and Alternate 8 is located west of the railroad approximately 2,000 feet (610 meters) from the western boundaries of the historic district. Alternates 1 and 3 have a moderate impact to the visual environment looking west of the village because of the close proximity of the alignments to the village and the contrast of the new facility with the existing landscape. Alternate 4 has also been evaluated as having a moderate impact to the visual environment of the village for the same reasons as stated for Alternates 1 and 3. Alternate 5 bypasses Rippon approximately 1,500 feet (457 meters) east of the existing alignment. Alternate 5 has been evaluated as having a low impact due to the visual contrast that is created by the introduction of the proposed facility with the existing landscape. Alternate 6 has been evaluated as having a low impact because of the contrast with the existing landscape created by the new facility, and Alternate 8 is evaluated as having no visual impact due to its location west of the railroad.

**c. Long Marsh Run Rural Historic District**

Existing US 340 extends through the Long Marsh Run Rural Historic District in Clarke County, Virginia. The proposed improvements for all six of the build alternates will remain within the existing right of way. All six of the alternates are evaluated as having a low visual impact to this historic resource. There will be no grade or elevation changes made to US 340 in this area. The visual change for this area will include the modification of the existing two-lane roadway to a new four-lane divided roadway, and this change will occur at the same location as existing US 340.

**d. Balclutha**

US 340 is located approximately 2,000 feet (610 meters) east of the house and out buildings. Alternates 1, 3, 4, 5, 6, and 8 are approximately 1,950 feet (594 meters) east of the historic buildings. Visual impacts to Balclutha, as a contributing element to the Long Marsh Run Rural Historic District, is limited. The existing four-lane section of US 340 just south of the Virginia/West Virginia State line currently transects the historic district. All of the proposed alternates have been evaluated as having a low impact to this historic resource. This designation is based on the visual obstruction imposed by the topography and distance of the new facility relative to the existing historic farm facilities.

**e. Olive Boy Farm**

The farm complex is located approximately 1,500 feet (460 meters) from existing US 340. Alternates 1, 3, and 4 will traverse the western most edge of the property and lie approximately 1,300 feet (400 meters) west of the historic house. Alternate 5 is proposed to be 650 feet (198 meters) east of the farm complex; however, the alternate will bisect the historic boundaries under consideration. Alternates 6 and 8 are proposed to be west of the existing US 340 and are approximately 1,500 feet (450 meters) west of the property. A clear view of Alternates 1, 3, 4, 6 and 8 are obstructed due to the existing landscape. Visually, these alternates have been evaluated as having a low impact to the property based on their close relationship to the existing facility. Alternate 5 is the only alternate which bisects the property. Alternate 5 has been evaluated as having a high visual

impact to the property. This evaluation is based on the visibility of the facility and the contrast between the existing landscape and the new facility.

**f. Glenwood**

The main residence faces south with the existing US 340 approximately 1,800 feet (550 meters) west of the house. Under Alternates 1 and 3, the alignment remains a distance of approximately 1,800 feet (550 meters) west of the historic property. Alternate 4 lies approximately 950 feet (290 meters) west of Glenwood. Alternate 5 lies approximately 900 feet (275 meters) east of the house. Alternate 6 is located approximately 2,600 feet (793 meters) west of property. Alternate 8 is located the furthest to the west, west of the Norfolk and Western Railroad, approximately 3,300 feet (1000 meters). Alternates 1 and 3 have been evaluated as having a low impact to the property based on three factors: the location of these alternates is approximately the same as the existing facility; the view of existing US 340 is mostly obstructed by the existing landscape; and even though the facility is in approximately the same location, the introduction of a four-lane facility imposes some impact.

Alternate 4 has been evaluated as having a moderate impact to the property. This evaluation is based on the close proximity of the proposed alternate to the property and the contrast of the new facility with the existing landscape. Alternate 5 has been evaluated as having a moderate impact to the visual environment because the introduction of this new alignment contrasts with the surrounding landscape and the proximity of this alignment to the property. Alternates 6 and 8 have been evaluated as having a no impact to the visual environment based on the distance away from the property and the visual intrusion induced by the existing landscape.

**g. Wayside Farm**

The main residence sits at an elevation of approximately 500 feet (150 meters) above mean sea level and faces southwest. Alternates 1, 3, 6, and 8 bypass the Wayside Farm to the west. These alignments lie considerably further west than the existing alignment. This location combined with the visual intrusions caused by various other elements makes these alignments difficult, if

not impossible, to see. Alternates 1, 3, 6, and 8 have been evaluated as having no impact to the visual environment of this property.

Alternate 4 also lies to the west of the house, approximately 410 feet (125 meters) at an elevation of 510 feet (155 meters) above mean sea level and imposes upon the existing landscape as seen from the house. Based on the close proximity to the property and the high contrast of this facility with the landscape, this alternate has been evaluated as having a moderate impact on the visual environment. Alternate 5 lies approximately 700 feet (213 meters) east of the main residence. This alignment has been evaluated as having a high impact because of the open landscape and the contrast between the existing landscape and a new roadway facility at this location.

**h. Ripon Lodge**

The Ripon Lodge faces east, towards existing US 340, and is approximately 1,700 feet (520 meters) west of the roadway. Alternates 1, 3, and 6 each transect this historic property in different locations, any of which will have adverse implications to the visual setting of the property as a whole. Alternate 1 is proposed to cross the proposed expansion of the property approximately 300 feet (90 meters) west of the main house. Alternate 3 lies approximately 210 feet (65 meters) east of the main residence. Because of the historic designation of this property, the proximity of Alternates 1, 3 and 6 to the Ripon Lodge, and the disturbance of the existing landscape, these three alternates have been evaluated as having a high impact to the visual characteristics associated with the property. Alternate 6 lies approximately 900 feet (275 meters) west of the main house and is in close proximity to an active railroad.

Alternate 8 is located behind the property, west of the railroad tracks approximately 245 feet (75 meters) from the historic boundaries. This alternate will be visible from the barns located in the back of the property but not from the main house. Alternate 8 is located approximately 1,600 feet (489 meters) from the main house and is considered to have a moderate visual impact to Ripon Lodge.

Alternates 4 and 5 will be located east of existing US 340 by 1,600 feet (488 meters) and 2,700 feet (823 meters), respectively. Both of these alternates disturb the existing landscape and are somewhat visible from the Ripon Lodge because of open fields associated with this area of the project study area. As a result, these alternates have been evaluated as having a low impact to the perceived visual environment.

**i. Byrdland**

The Byrdland property is located on a hill surrounded by mature trees. The main house is situated at an elevation of about 525 feet (160 meters) above mean sea level and faces west, towards the existing roadway. This house is approximately 750 feet (230 meters) east of the existing roadway. All of the proposed alignments lie west of the main house. Alternates 1, 6, and 8 are located further west than the existing alignment. The view of these alternates is obstructed from the main house by topography and natural vegetation. Therefore, Alternates 1, 6, and 8 have been evaluated as having no visual impact to the property. Alternate 3 introduces a four-lane road along the boundaries of this rural property and is evaluated as having a low visual impact to Byrdland.

Alternates 4 and 5 transect the western edge of the historic boundary of the property. The natural characteristics of the land surrounding the main house preclude a clear view of the existing alignment; however, the introduction of a four-lane facility within the historic boundaries will have some visual implications. For this reason, these two alternates have been evaluated as having a moderate visual impact to the Byrdland property.

**j. Straithmore**

US 340 is the western boundary for Straithmore. Alternates 1, 3, 4, 5, and 6 are in the same approximate location along existing US 340 in this area of the project. Since the alternates will introduce a modern four-lane roadway along the historic boundary, Alternates 1, 3, 4, 5, and 6 have been evaluated as having a low impact to the visual environment of this property. Alternate 8 is located west of the railroad and connects to existing US 340 north of Straithmore.

Alternate 8 will not be visible from the property and is considered to have no visual impact to this historic property.

**k. William Grubb Farm**

From the front of the main house, existing US 340 is not visible because of the natural topography and vegetation. The house sits at an approximate elevation of 490 feet (150 meters). Elevations vary from the house to the roadway by about 30 feet (9 meters). All of the alternates, except Alternate 8, lie east of the historic property. Alternates 1 and 6 lie approximately 1,100 to 1,150 feet (335 to 350 meters) east of the property. Alternates 3, 4, and 5 are located about 1,450 feet (440 meters) east of the Grubb Farm. Alternates 1 and 6 are located just west of existing US 340. The terrain and vegetation between the farm and the roadway obstruct any view of the current US 340. Alternates 1 and 6 have been evaluated as having a low impact because they are slightly closer to the William Grubb Farm property. Alternates 3, 4, and 5 have been evaluated as having no impact due to the fact that they are east of existing US 340 and any view of the facility is obstructed.

Alternate 8 is located west of the property and will require a bridge over the Norfolk and Western Railroad. The embankment for the bridge over the railroad will be visible from the main house on the William Grubb Farm. Alternate 8 is considered to have a high visual impact to this property since a modern four-lane roadway and bridge will be introduced on the western side of the historic boundary.

**2. Mitigation**

In compliance with the Federal Highway Administration's Guidelines with respect to the visual environment, mitigation measures are addressed for proposed build alternates that will have visual effects on the study area. Mitigation includes the enhancement of positive effects as well as the minimization or elimination of negative effects. In an attempt to minimize or eliminate impacts associated with any of the build alternates, the following mitigation measures will be incorporated, as appropriate, during final design:

- Final roadway design and engineering attempts to blend the new road into the existing topography and natural landscape.
- In the areas where the alternate is aligned with an existing road, the horizontal and vertical alignments of the existing road are followed, consistent with design criteria.
- Selective clearing of trees along the right of way is used to minimize the loss of vegetation.
- An aesthetically pleasing highway is provided, with gently rounded grassed shoulders beyond the edge of paving to enhance the view of the road and the view from the road.
- Native vegetation will be planted to screen highway from surrounding project area.

## **S. Energy**

The short-term energy requirement for construction of the proposed project is greater than the energy requirements for the No-Build Alternative. However, the post-construction, operational energy requirement of the facility is less with the Build Alternative than with the No-Build Alternative. The savings in operational energy requirements offset construction energy requirements and thus, in the long-term, result in net savings in energy usage. The proposed facility reduces traffic congestion, thereby reducing overall vehicular energy consumption.

## **T. Construction Impacts**

All of the build alternates under consideration have similar construction impacts. All of the construction impacts listed below are temporary in nature. Construction activities for the proposed project impacts air quality, noise, water quality, and traffic flow. There are also visual impacts for those residents and travelers within the immediate vicinity of the project.

The air quality impact is temporary and primarily consists of emission from diesel powered construction equipment, dust from embankment and the haul road area, and burning of debris.

Noise and vibration impacts are created through heavy equipment movement and other construction activities such as pile driving. Water quality impacts from erosion and sedimentation are controlled through Best Management Practices.

Maintenance of traffic and sequence of construction are scheduled to minimize traffic delays throughout the project. Signs are utilized where appropriate to provide notice of road closures and other pertinent information to the traveling public. The local news media is notified in advance of road closings and other construction related activities that could excessively inconvenience the community so that motorists, residents, and businesses could plan their day and travel routes in advance.

Access to all businesses and residences is maintained to the extent practical through controlled construction scheduling. Traffic delays are minimized to the extent possible where many construction operations are in progress at the same time. For residents living along the proposed facility, some of the materials stored for project construction may be displeasing visually; however, this condition is only temporary.

Construction of the roadway and bridges may require excavation of unsuitable material, placement of embankments, and use of materials such as asphalt concrete and portland cement concrete. Disposal is on-site in a retention area or off-site. The removal of structures and debris is in accordance with local and state regulations. The contractor is responsible for the methods of controlling pollution on haul roads, in borrow pits, other material pits, and areas used for disposal of waste materials from the project. Temporary erosion control features will comply with Best Management Practices and will be designed in accordance with the WVDOT Erosion and Sediment Control Manual.

## **U. Cumulative and Secondary Impacts**

In accordance with the National Environmental Policy Act, potential secondary and cumulative impacts related to the proposed project have been identified. Guidelines prepared by the Council on Environmental Quality (CEQ) for implementing NEPA broadly defined secondary impacts as those that are “caused

by an action and are later in time or farther removed in distance but are still reasonably foreseeable” (40 CFR 1508.8). Cumulative impacts are those that “result from the incremental impacts of an action when added to other past and reasonably foreseeable future actions” (40 CFR 1508.7). They are similar to secondary impacts in the geographic context. However, cumulative impacts consider past, present, and future trends.

The proposed project is intended to meet the transportation needs of the area including capacity, safety, and road deficiencies. The proposed project is not intended for the encouragement of economic development. The assessment of secondary and cumulative land use growth caused by the project in the reasonably foreseeable future can be assessed through a review of the Jefferson County Comprehensive Plan (initially adopted in 1986 and updated in 1994) as it relates to existing zoning (last reviewed in 1996) and future land use planning. As shown on Exhibit I-7 in Chapter 1, the project area consists of primarily rural land use with most zoned as rural agricultural. Development is primarily expected to occur within the industrial-commercial, residential growth-light industrial-commercial and Rippon Village District land use designations.

With or without the proposed project, land uses are not anticipated to change dramatically. There is the potential for secondary and cumulative impacts on water resources, wetlands, floodplains, stormwater runoff, and natural communities. Secondary and cumulative impacts are mitigated by the requirement for all future development to comply with existing regulations and ordinances.

The difference in land that is developed following the completion of the proposed project compared to the area of land that is developed without the proposed project is likely to be minimal. This difference is attributable as a secondary impact of the proposed project. The effects of this secondary development on water resources, wetlands, floodplains, stormwater runoff, and natural communities will be minimal. Future development in this area will need to comply with all existing applicable regulations.

Cumulative impacts to the social or natural environment are viewed as a whole. The project study area has not drastically changed within the past twenty years. It is predominantly agricultural. The majority of the development occurred prior to 1980. The cumulative impacts are very similar to the secondary impacts discussed in the previous section. Development is expected to occur in areas zoned for residential, industrial, and commercial development with or without the completion of the proposed project. There have been few impacts in recent years to water resources, wetlands, floodplains, and natural communities. Including those potential impacts discussed as secondary impacts, the cumulative impacts to these resources are expected to be minimal.

Through compliance with the Federal Clean Water Act, the West Virginia State Code of Regulations Title 46, and the Groundwater Protection Act, adverse impacts to water resources will be minimized. The incorporation of Best Management Practices is often used to minimize water resource impacts.

The Federal Clean Water Act regulates impacts to wetlands. A Section 404 permit is required for any project that impacts wetlands. The permitting process requires that wetland impacts have been avoided or minimized. Wetland mitigation may be required to compensate for unavoidable wetland losses.

Jefferson County has a floodplain ordinance in effect that requires compliance with FEMA regulations. FEMA requires that residential structures be elevated to the base-flood elevation, non-residential structures to be flood proofed to the base flood elevation, and no construction is permitted within any floodway that will increase the 100-year flood elevation. Jefferson County's ordinance also prohibits construction within floodplains on new lots. According to the Jefferson County Subdivision Ordinance, a stormwater management plan must be developed that is capable of controlling the two-year storm, passing the ten-year storm through the principal control structure, and providing an emergency spillway or routing for the 100-year storm.

There are no current regulations requiring mitigation of natural communities. The Jefferson County Comprehensive Plan identifies sensitive natural resources. No sensitive natural resources are identified within the project vicinity.

## **V. Short-Term Uses Versus Long-Term Productivity**

The six build alternates under consideration would have similar impacts on local short-term uses of resources and enhancement of long-term productivity. There are limited adverse short-term effects on the human environment during project construction. There is minor siltation of local surface waters during construction. This is minimized by strict adherence to Best Management Practices. Increased noise levels due to construction would also be short-term.

The proposed project is classified as a long-term productive facility. This project, with its desirable design characteristics, provides for safe and efficient vehicle operation for future, as well as, present travel time. The benefits such as reduced operating costs, reduced travel time, increased safety, and general economic enhancement of the area offered by the long-term productivity of this project should more than offset the short-term inconvenience and adverse effects on the human environment.

## **W. Irreversible and Irretrievable Commitment of Resources**

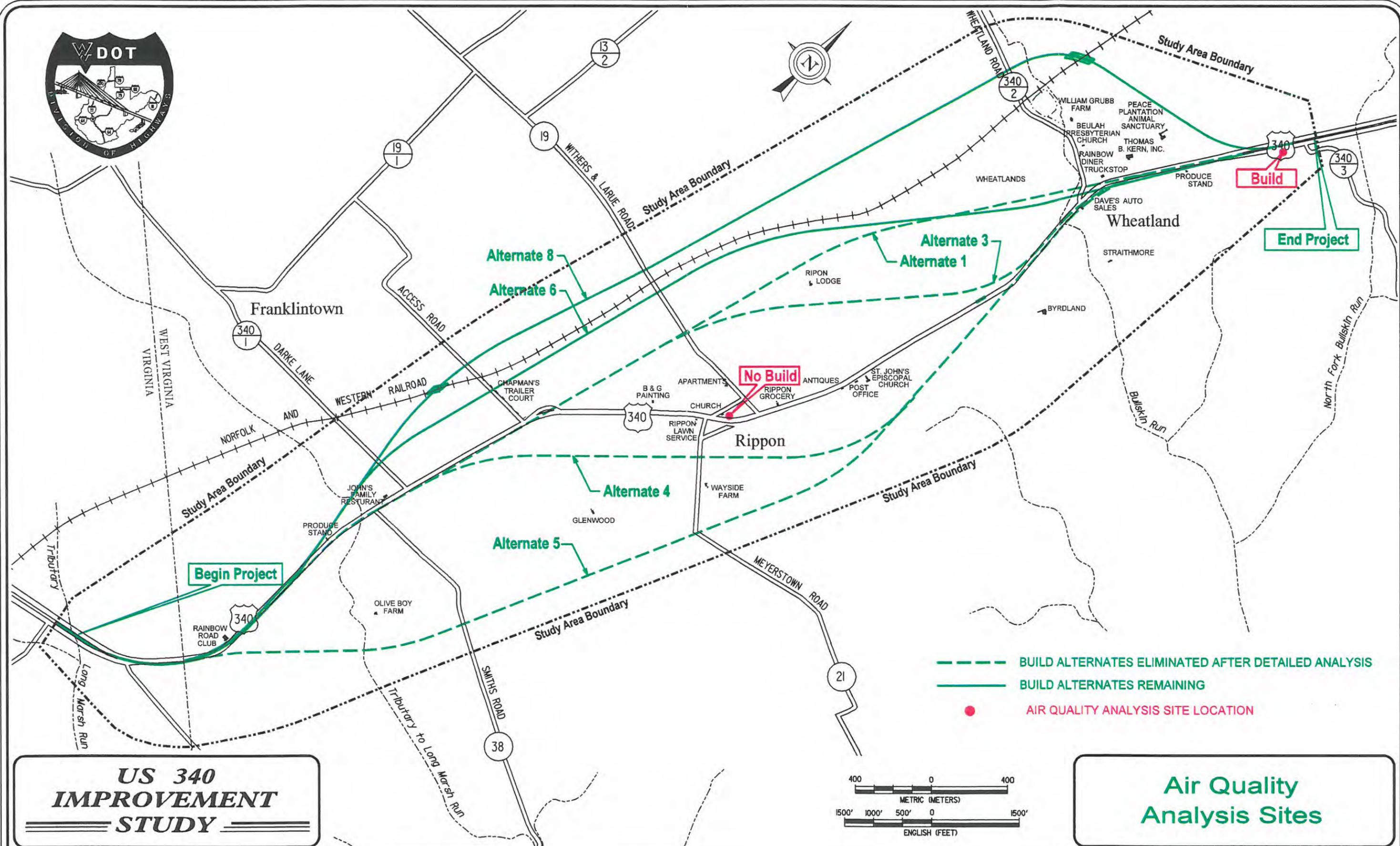
Implementation of the proposed project involves a commitment of the range of natural, physical, human, and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion will be necessary or desirable.

Considerable amounts of fossil fuels, labor, and highway construction materials such as cement, aggregate, and bituminous material are expended. Additionally, large amounts of labor and natural resources are used in the fabrication and preparation of construction materials. These materials are

generally not retrievable. They are not in short supply and their use does not have an adverse effect upon continued availability of these resources. Any construction would also require a substantial one-time expenditure of state funds that are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, region, and state benefit by the improved quality of the transportation system. These benefits consist of improved quality, accessibility and safety, savings in time, and greater availability of quality services that are anticipated to outweigh the commitment of these resources.

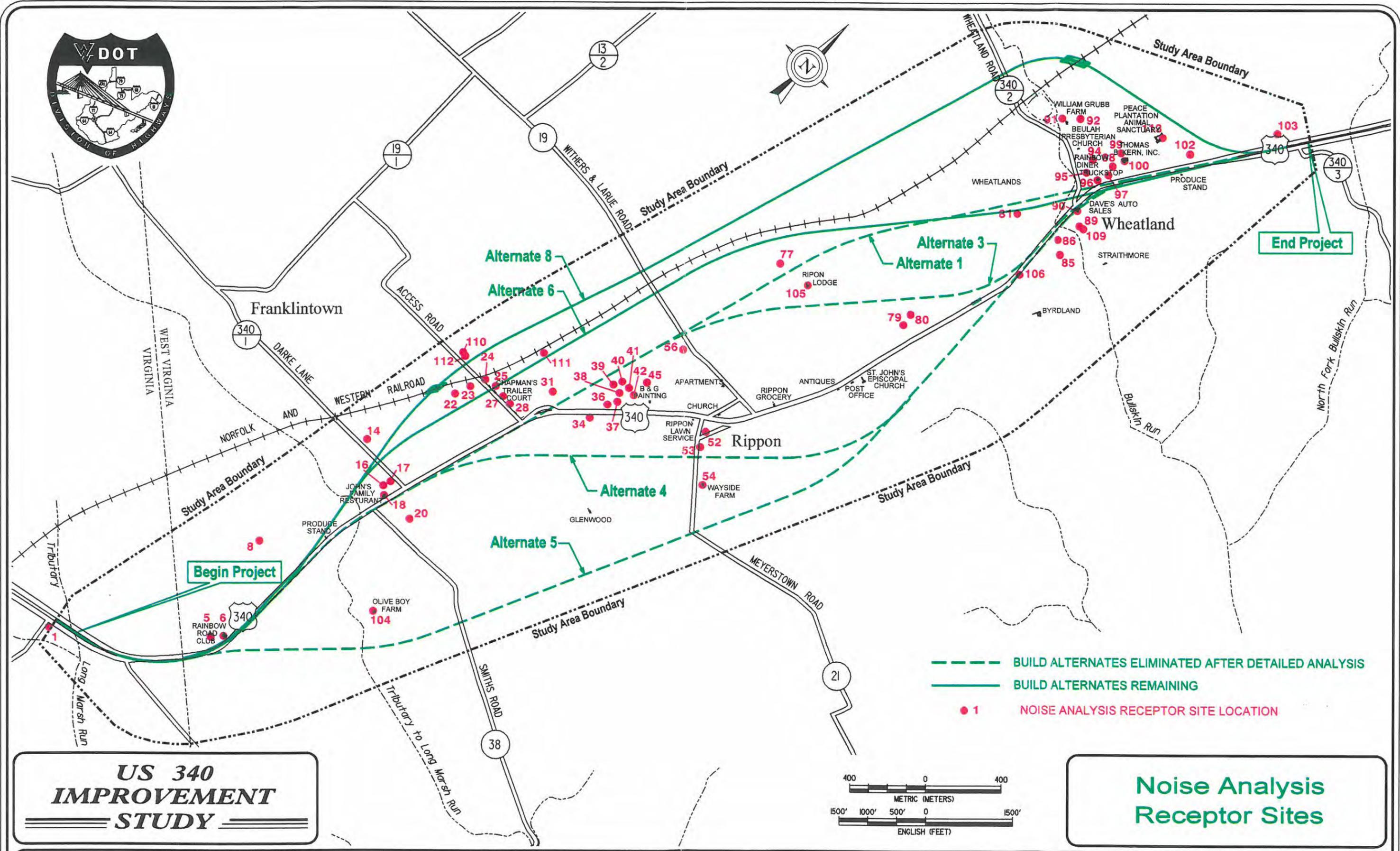




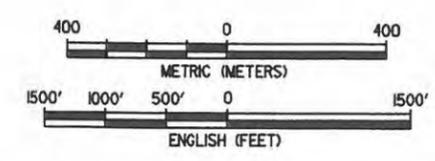
**US 340  
IMPROVEMENT  
STUDY**

**Air Quality  
Analysis Sites**

Exhibit IV-1



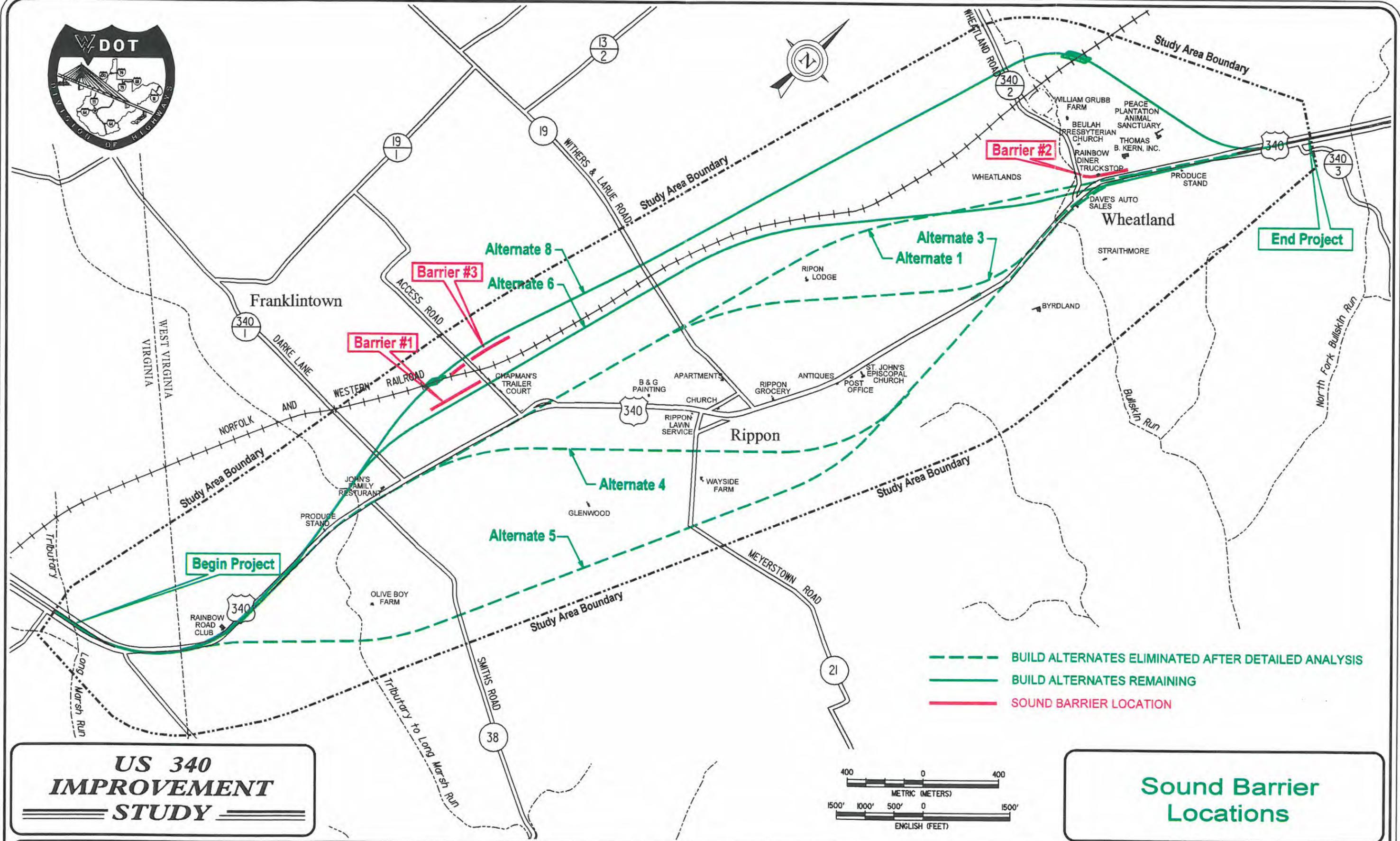
-  BUILD ALTERNATES ELIMINATED AFTER DETAILED ANALYSIS
-  BUILD ALTERNATES REMAINING
-  1 NOISE ANALYSIS RECEPTOR SITE LOCATION



**US 340  
IMPROVEMENT  
STUDY**

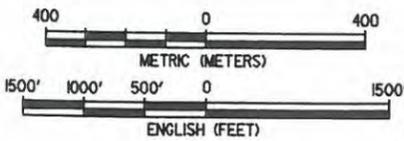
**Noise Analysis  
Receptor Sites**

Exhibit IV-2



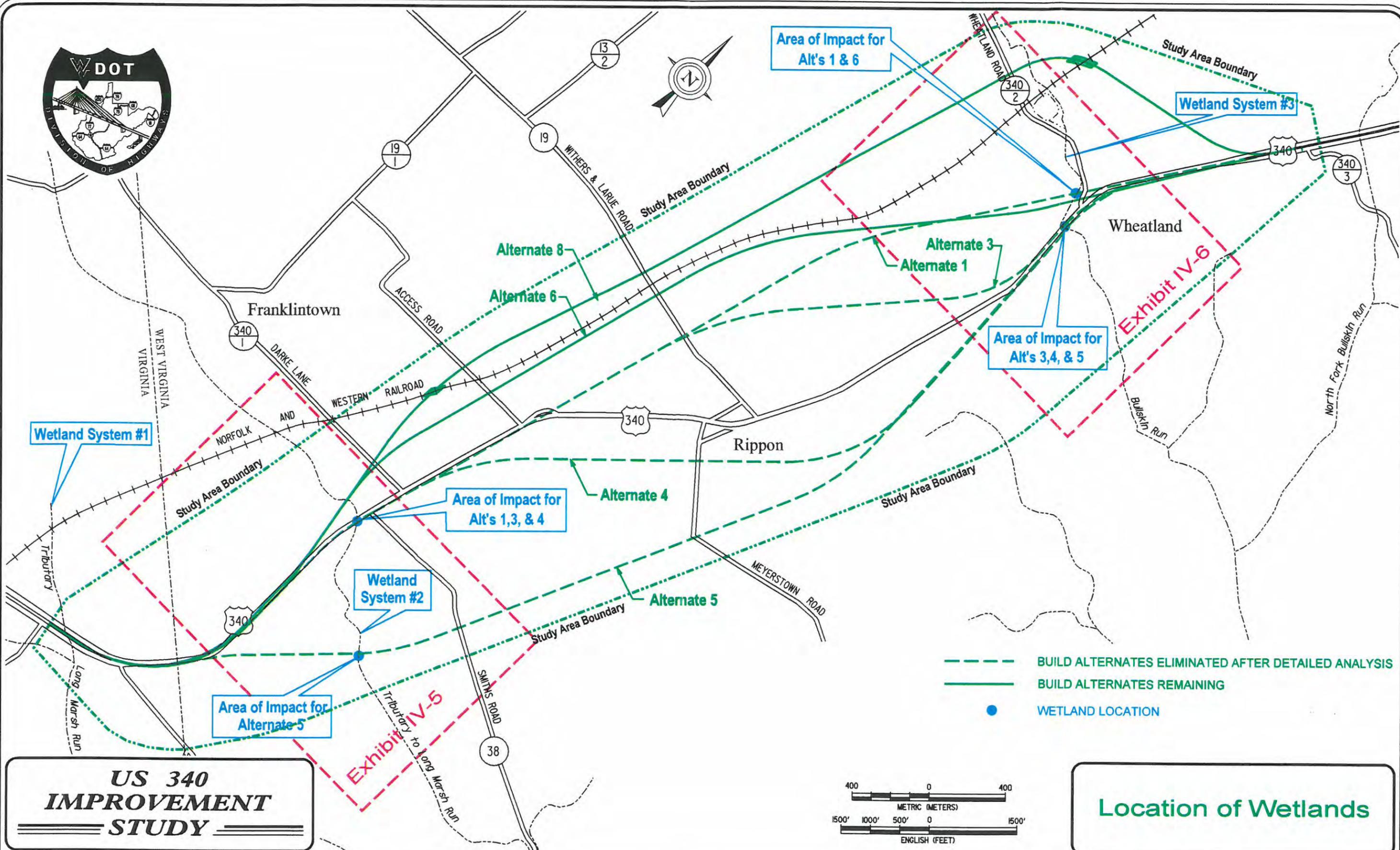
- BUILD ALTERNATES ELIMINATED AFTER DETAILED ANALYSIS
- BUILD ALTERNATES REMAINING
- SOUND BARRIER LOCATION

**US 340  
IMPROVEMENT  
STUDY**



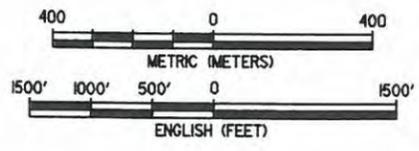
**Sound Barrier  
Locations**

Exhibit IV-3



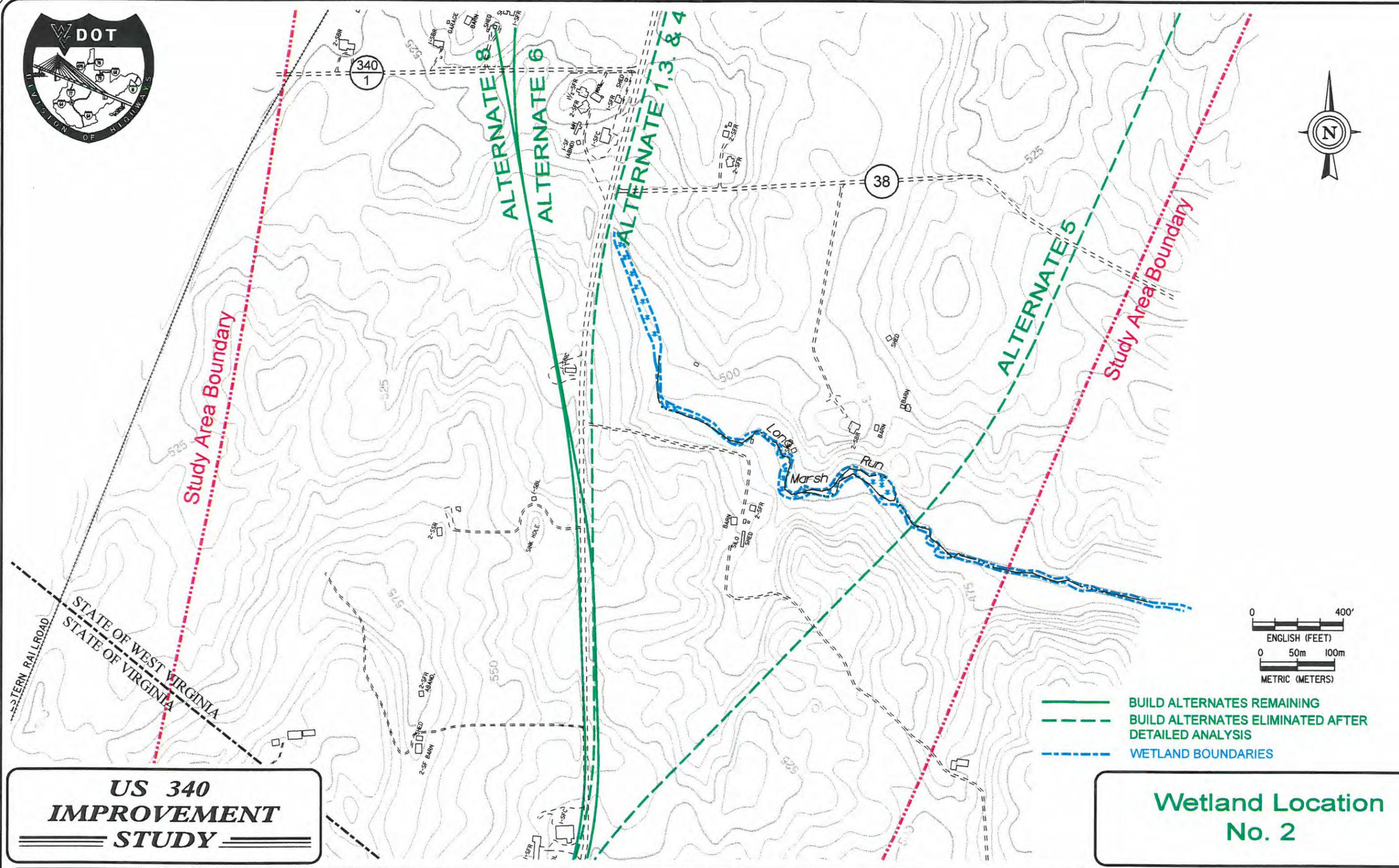
- BUILD ALTERNATES ELIMINATED AFTER DETAILED ANALYSIS
- BUILD ALTERNATES REMAINING
- WETLAND LOCATION

**US 340  
IMPROVEMENT  
STUDY**



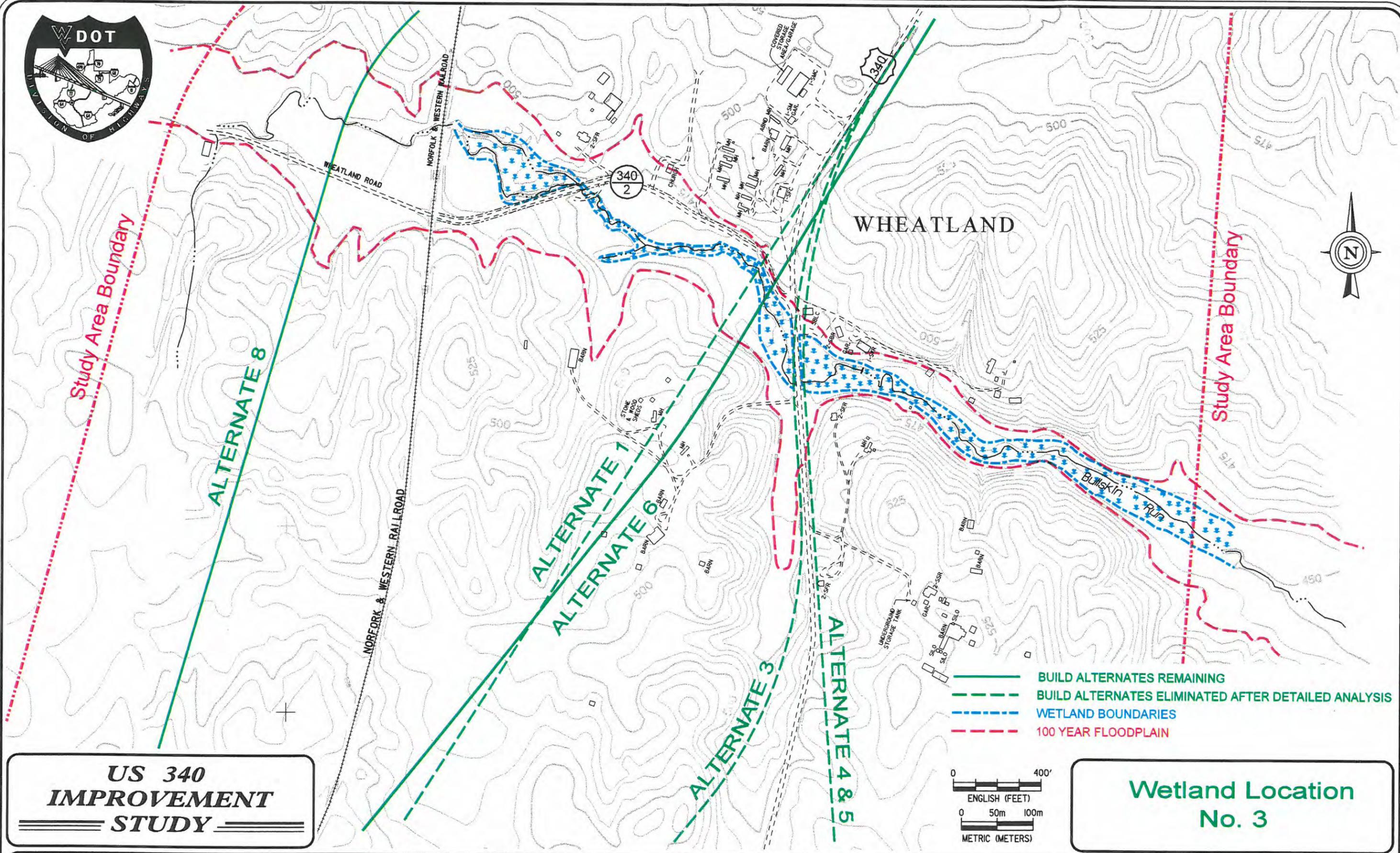
**Location of Wetlands**

**Exhibit IV-4**



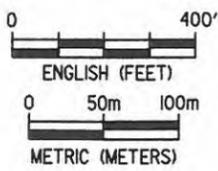
**US 340  
IMPROVEMENT  
STUDY**

**Wetland Location  
No. 2**

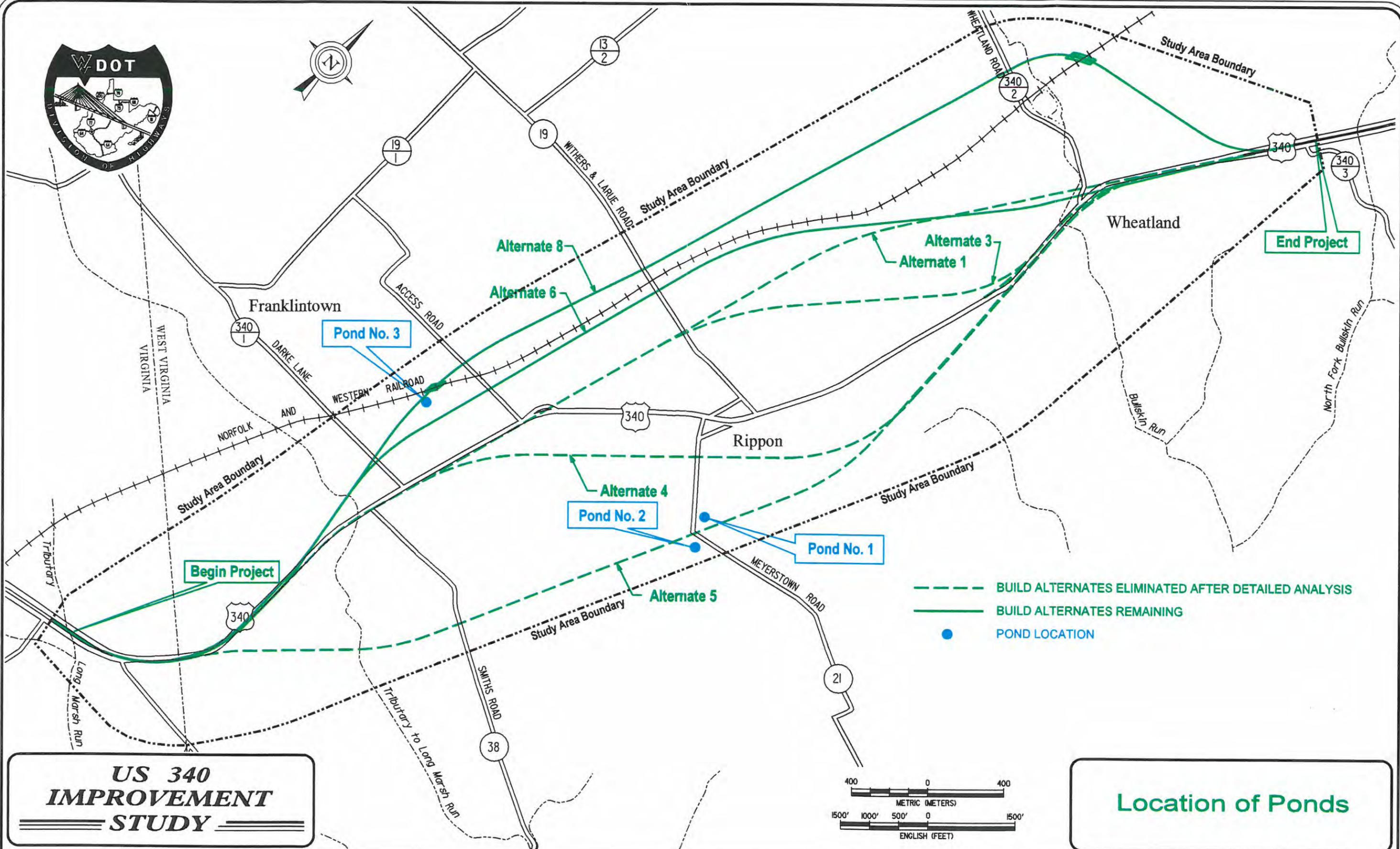


**US 340  
IMPROVEMENT  
STUDY**

**Wetland Location  
No. 3**

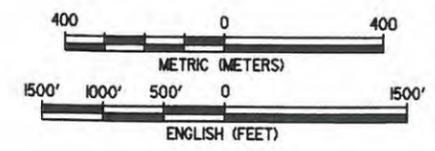


**Exhibit IV-6**

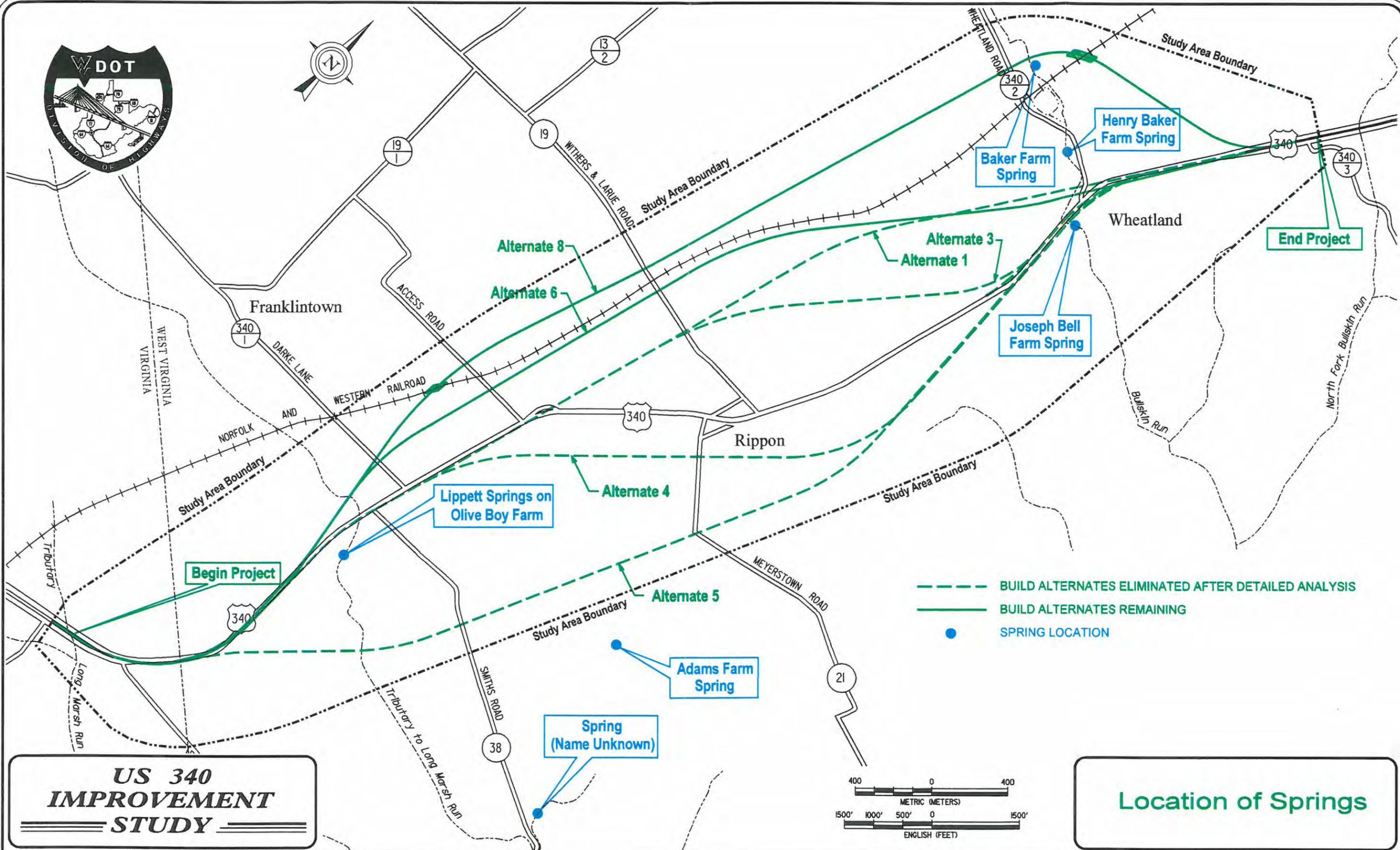


- BUILD ALTERNATES ELIMINATED AFTER DETAILED ANALYSIS
- BUILD ALTERNATES REMAINING
- POND LOCATION

**US 340  
IMPROVEMENT  
STUDY**



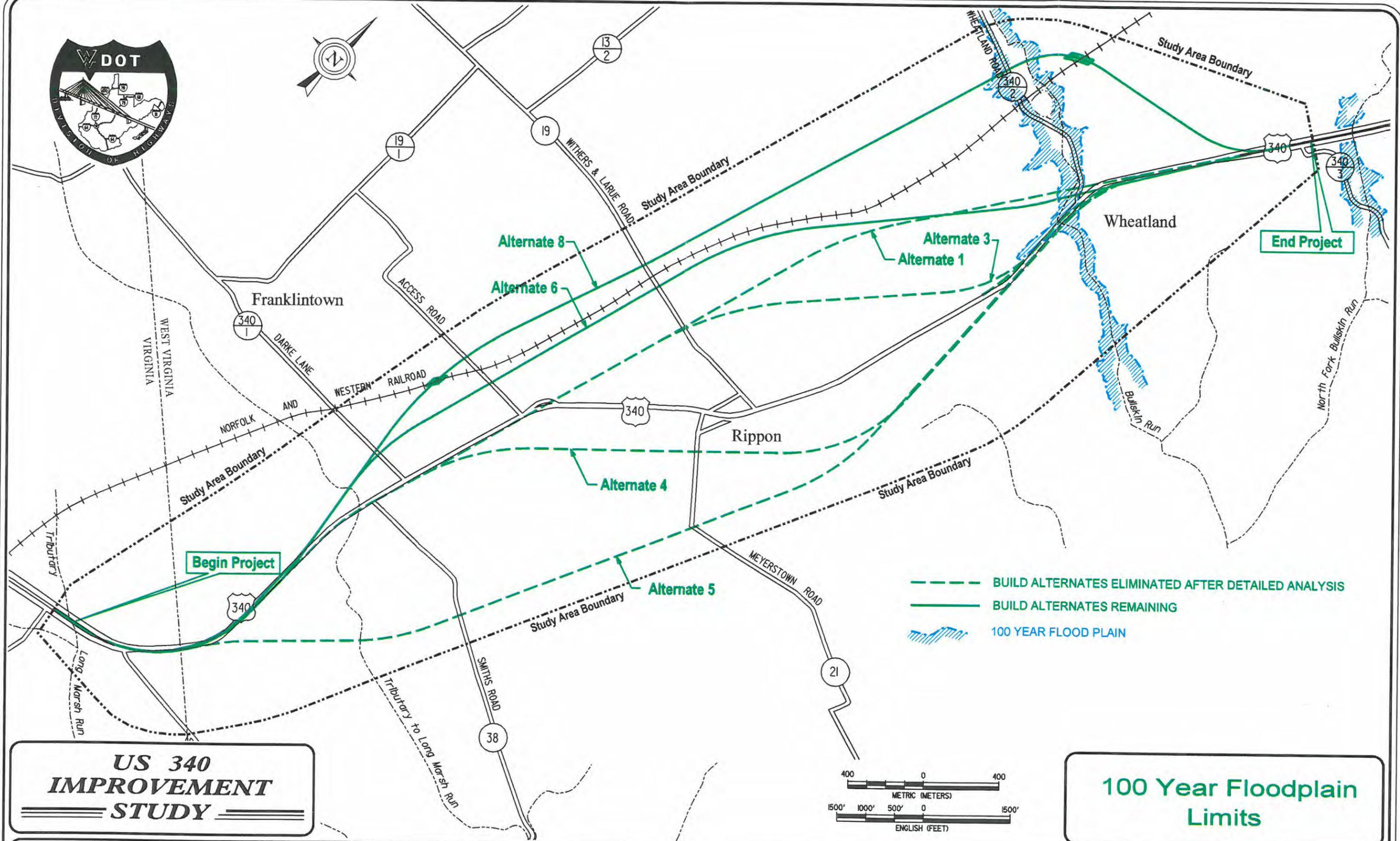
**Location of Ponds**



**US 340  
IMPROVEMENT  
STUDY**

**Location of Springs**

Exhibit IV-8



**US 340  
IMPROVEMENT  
STUDY**

**100 Year Floodplain  
Limits**

Exhibit IV-9

## **V. SECTION 4(f) EVALUATION**

In accordance with Section 4(f) of the Department of Transportation Act of 1966, as amended (49 U.S.C. 303), Section 138 of the Federal Aid Highway Act of 1968, and FHWA Regulation 23 CFR 771.135, an evaluation of the project area was conducted for properties determined to be qualified for Section 4(f) evaluation. This requires that no publicly owned land from a public park, recreation area, wildlife refuge or land from a significant historic site be used for federal-aid highways unless there is no feasible and prudent alternative. Specific alternatives and actions to minimize harm must be considered.

### **A. INTRODUCTION**

#### **1. Section 4(f) Properties**

Within the project area, shown on Exhibit V-1, there are no public parks, recreation areas, or wildlife refuges. There are, however, numerous historic resources within the project area. The historic architectural resources include two properties and one district listed on the National Register of Historic Places, two eligible historic districts, and six eligible historic properties. One archaeological site, considered eligibility for listing on the National Register, was also identified in the project area.

The Ripon Lodge and the William Grubb Farm are listed on the National Register of Historic Places. Balclutha, partially located in Clarke County, Virginia, is listed on the National Register and the Virginia Landmarks Register as a contributing resource in the National Register listed Long Marsh Run Rural Historic District of Clarke County, Virginia. Long Marsh Run Rural Historic District is located at the south end of the project on both sides of existing US 340.

The two historic districts eligible for the National Register include the Kabletown Rural Historic District and the Village of Rippon Historic District. The Kabletown Rural Historic District boundaries, shown in Exhibit V-2, encompass a large area surrounding and including over half of the project study area. All of the historic resources in the project area, excluding the Long Marsh Run Rural Historic

District and Balclutha, are located within and are contributing elements to the Kabletown Rural Historic District. Five of these historic resources are also individually eligible for listing on the National Register based on each of their unique historic contributions to West Virginia. These five properties eligible for listing on the National Register include the Olive Boy Farm, Glenwood, Wayside Farm, Byrdland, and Straithmore.

The archaeological site considered eligible is the Wheatlands Farm. The decision for preservation in place or recovery of this site will be reviewed by the State Historic Preservation Office following additional archaeological testing for the Preferred Alternative. Therefore, this site is currently being considered a Section 4(f) property.

## **2. Project Purpose and Need**

The proposed project will improve the existing two-lane section of US 340 from the existing four-lane section in Clarke County, Virginia to the existing four-lane section of the Charles Town Bypass in Jefferson County, West Virginia. Improvements to US 340 are needed to address capacity and safety deficiencies along the existing facility. Currently, sections of US 340 operate at capacity, with an unacceptable Level of Service E, during daily peak travel periods. By the design year of 2020, the entire two-lane facility would operate over capacity during peak travel periods with a Level of Service F. Existing roadway deficiencies also create undesirable driving conditions along these sections of US 340. These deficiencies include variable shoulder widths, narrow travel lanes, limited passing zones, steep side slopes, and unprotected fixed objects such as culvert headwalls and trees.

## **3. Project Alternates and Summary of Impacts to Historic Properties**

Six build alternates, Alternates 1, 3, 4, 5, 6, and 8, were studied in detail for the project. Based on the detail study, Alternates 1, 3, 4, and 5 were eliminated and Alternate 6 and Alternate 8 were identified as the Reasonable Feasible Alternatives for the project. The No-Build Alternative is not consistent with the purpose and need of the project but is retained for comparison purposes.

The Preferred Alternative will be selected following the receipt of comments on this document and from the public hearing.

Exhibits V-3 and V-4 show the location of the Section 4(f) properties in relation to the remaining Build Alternates 6 and 8. No right of way acquisition will be required from the Long Marsh Run Rural Historic District, Village of Rippon Historic District, William Grubb Farm, Glenwood, Wayside, or Byrdland. In addition, the visual impacts to these properties do not substantially impair the historic integrity of the historic sites. Therefore, these properties are not included in the Section 4(f) Evaluation.

Table V-1 shows a comparison summary of the Section 4(f) Impacts for the alternates. The No-Build Alternate will not require right of way from any of the historic resources in the project area. There are five historic resources impacted by one or both of Alternates 6 and 8. These five resources include the Kabletown Rural Historic District, Olive Boy Farm, Ripon Lodge, Straithmore Farm, and Wheatlands Farm. Alternate 6 will impact all five of these historic resources and Alternate 8 will impact two, the Kabletown Rural Historic District and the Olive Boy Farm. Specific impacts to each Section 4(f) property are discussed in more detail in Sections B through F of this evaluation.

**TABLE V-1  
COMPARATIVE SUMMARY OF SECTION 4(f) IMPACTS**

<b>Property</b>	<b>No-Build</b>	<b>Right of Way Acquisition for Remaining Build Alternates</b> acres (hectares)	
		<b>Alternate 6</b>	<b>Alternate 8</b>
Kabletown Rural Historic District*	0	50.4 (20.4)	6.1 (2.5)
Olive Boy	0	5.4 (2.2)	3.7 (1.5)
Ripon Lodge	0	15.9 (6.4)	0
Straithmore	0	6.1 (2.5)	0
Wheatlands Farm	0	6.6 (2.7)	0
Total *	0	50.4 (20.4)	6.1 (2.5)

\* All 4(f) properties, as well as the Village of Rippon Historic District, are contained within the Kabletown Rural Historic District.

#### **4. Avoidance Alternatives**

Avoidance Alternatives are discussed in this evaluation to determine if there are any feasible and prudent alternatives which would avoid impacting the Section 4(f) resources. The No-Build Alternative does not impact the Kabletown Rural Historic District or any of the individual Section 4(f) properties. Although the No-Build Alternative avoids the Section 4(f) properties and districts, it is not considered a prudent alternative since it would not meet the purpose and need for the project.

Both Alternates 6 and 8 impact the western edge of the Kabletown Historic District and the Olive Boy Farm. As shown on Exhibit V-3, Alternate 8 impacts the Rural Historic District at the south end of the project at the state line between Virginia and West Virginia. The impacts to the Olive Boy Farm are located a little further north along the edge of the property along existing US 340. Alternate 8 then extends west of the Norfolk and Western Railroad, beyond the Kabletown Rural Historic District boundaries, to avoid the remaining historic resources in the project area.

Alternate 8 was initially developed to avoid all the historic resources in the study area. But in order to avoid impacting the Long Marsh Run Rural Historic District and the Clarke County Agricultural District in Virginia, Alternate 8 was revised. Alternate 8 starts at the existing four-lane section of US 340 in Virginia and extends north following the existing alignment. The improvements to US 340 in Virginia will be constructed within the existing right of way to avoid impacting both the Long Marsh Run Rural Historic District and the Clarke County Agricultural District. With these design constraints within Virginia and at the state line, it was not feasible to avoid the edge of the Kabletown Rural Historic District in West Virginia.

Several design configurations including incorporating a reduced typical section, barriers within the median, and retaining walls were developed in an effort to avoid the Kabletown Historic District. Even with these design variations, right of way was still required on the east side of existing US 340 within the Kabletown

Rural Historic District. Therefore, there are no feasible and prudent alternatives under consideration in this Section 4(f) Evaluation for avoiding the Kabletown Rural Historic District. Alternate 8 would still provide an avoidance alternative for the Ripon Lodge, Straithmore, and Wheatlands Farm.

In an effort to minimize the impact and amount of right of way needed from the Kabletown Historic District, the alignments of Alternates 6 and 8 are located where right of way is required from the Olive Boy Farm. Prior to the completion of the Final Environmental Impact Statement, the location of the preferred alternative, either Alternate 6 or 8, will be reviewed to minimize or avoid impacts to the Olive Boy Farm. Although these revisions to the preferred alternative may require some additional property from the Kabletown Rural Historic District near the state line, the preferred alternative could likely avoid impacting the Olive Boy Farm.

## **5. Minimization of Harm**

For the unavoidable impacts to the Section 4(f) resources, efforts will be made to modify the designs and locations where feasible to minimize harm to the resources. The determination of where the alternates could be adjusted or modified would be made following the selection of the Preferred Alternative and during design.

## **B. THE KABLETOWN RURAL HISTORIC DISTRICT**

### **1. Description of the Kabletown Historic District**

#### **a. Size and Location**

The Kabletown Rural Historic District is eligible for listing on the National Register of Historic Places. The district boundaries, as shown on Exhibit V-2, encompass approximately 18 square miles (4,500 hectares). The district boundaries are generally defined by the West Virginia State line to the south, the Kabletown magisterial district to the north, the Shenandoah River to the east, and existing US 340 to the west until the Village of Rippon where the boundaries roughly follow the railroad tracks.

**b. Relationship to Alternatives**

Exhibit V-3 shows the location of the Kabletown Rural Historic District in relation to the alternates. Both Alternates 6 and 8 impact the Rural Historic District. Alternate 6 will extend through two areas of the western side of the Kabletown Rural Historic District and Alternate 8 will impact a small area along the historic boundary at the state line between Virginia and West Virginia.

Alternate 6 is generally located on the west side of US 340. This alternate requires property along the district boundary but from the state line to just south of Jefferson County 340/1. Alternate 6 extends north re-entering the district north of Jefferson County 19 in the vicinity of the Ripon Lodge for about one-mile (1.6 kilometers). Alternate 6 then continues north and re-enters the district south of Wheatland and extends through the district to existing US 340.

**c. Ownership and Type of Section 4(f) Property**

The Kabletown Rural Historic District has multiple owners. The district encompasses several very large private farms and parts of four communities, Kabletown, Meyerstown, Rippon, and Wheatland. The very large farms are located to the east of US 340 extending to the Shenandoah River. The two communities of Rippon and Wheatland are within the project area and include various commercial businesses, churches, and private residences. These communities are located along existing US 340.

The Kabletown Rural Historic District is unique to West Virginia because it represents a Virginia landscape. The district includes the agricultural landscape and architectural resources of an area distinctively rural. It contains numerous large antebellum and postbellum estates, several small 19<sup>th</sup> and early 20<sup>th</sup> century farms, and rural communities. The main type of architectural resource in the district is the farm, estate dwelling, and its related outbuildings. In addition, several mills, mill sites, schools, and churches also contribute to the diversity of this district.

**d. Function**

There are no public activities in areas of the Kabletown Rural Historic District crossed by any of the build alternates.

**e. Facilities**

There are no public facilities located in the areas of the Kabletown Rural Historic District crossed by any of the build alternates.

**f. Access**

The primary roads accessing the Kabletown Rural Historic District include US 340, and the Jefferson County roads 340/1, 340/2, 19, 21, 38, and 25. This existing roadway network provides the major vehicular, pedestrian, and bicycle access to the district.

**g. Relationship to Similarly Used Lands**

The Long Marsh Run Rural Historic District in Clarke County, Virginia, is a similar historic district. It is located at the southern end of the project area. This historic district encompasses roughly 16 square miles (4,000 hectares) and is noted for its remarkably unaltered and picturesque rural land in north central Clarke County. It contains 366 contributing architectural resources that cover a period of over 175 years. These resources are primarily farm and estate residences and their associated outbuildings. Also included are three small African-American communities, several schools, churches, and mills.

**h. Applicable Clauses Affecting Ownership**

There are no known special covenants, restrictions, or deed conditions that would preclude the use of property within the Kabletown Rural Historic District for highway purposes.

**i. Unusual Characteristics**

There are no unusual characteristics associated with this historic district.

## **2. Impacts On The Section 4(f) Kabletown Rural Historic District**

Alternates 6 and 8 will directly impact the Kabletown Rural Historic District with land acquisition. Both alternates will impact the most western edge of the district. Alternate 6 will require approximately 50.4 acres (20.4 hectares) for permanent right of way. Alternate 8 will require approximately 6.1 acres (2.5 hectares) for permanent right of way. As shown on Exhibit V-3, the small area impacted by Alternate 8 is located at the state line between Virginia and West Virginia.

Air quality in the region is not adversely affected from the project. In fact, air quality improves when comparing the build alternates with the No-Build Alternate. Noise impacts will occur along the build alternates. Considering the alignments developed in this early phase of the project, noise abatement measures do not appear to be feasible or reasonable for the Kabletown Rural Historic District.

The major construction elements of this project are expected to be earth removal, hauling, grading, and paving. General noise impacts, such as temporary speech interference for passerby and those individuals living or working near the project, can be expected, particularly from paving operations and grading equipment. However, considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours, these impacts are not expected to be substantial. So that the impact from construction noise is minimal, the contractor will be required to follow specifications concerning construction noise as contained in WVDOT's Standard Specifications.

The district currently includes US 340. Alternate 6 is located on the western edge of the district. Alternate 8 is located west of the district except at the state line, but would still introduce a modern roadway facility into the surrounding landscape and is considered to have a low visual impact to the rural district. Alternate 6 has been evaluated as having a low visual impact to the district. This determination was made based on the close proximity of the alternate to existing US 340 in relation to the entire district. The visual impacts to this historic district would not substantially impair the historic integrity of the district.

### **3. Avoidance Alternates**

The No-Build Alternative would not require land acquisition from the Kabletown Rural Historic District. However, Alternates 6 and 8 will impact this district. Although the No-Build Alternative would not impact the district, it is not considered a prudent alternative since it would not meet the purpose and need for the project.

Alternate 8 was initially developed as an avoidance alternative for the Kabletown Rural Historic District. However, the project limits for this alternate were revised to tie into the existing four-lane section of US 340 in Clarke County, Virginia. The Long Marsh Run Rural Historic District and Clarke County Agricultural District are located on both sides of existing US 340 in Virginia. In order to avoid impacting the Rural Historic District and Agricultural District in Virginia, the improvements proposed for Alternate 8 will remain within the existing right of way. The design constraints created by following the same road elevation and alignment as the existing US 340 in this area prevents Alternate 8 from extending west and avoiding the Kabletown Rural Historic District at the Virginia/West Virginia State Line.

The design speed for the project is 60 miles per hour (102 kilometers per hour). With this design speed and the existing right of way location, there was a limit to the sharpness in the horizontal curvature of the roadway that could be used. Dropping the design speed is not an option since it would not be consistent with the other sections of the four-lane facility. Several median options and barrier walls were evaluated to minimize the amount of right of way required from the Kabletown Rural Historic. However, even with the narrowed median and barrier, the typical section would not fit within the existing right of way. Therefore, there is no feasible and prudent avoidance alternative for this rural historic district.

### **4. Measures To Minimize Harm**

Minimizing harm to the historic district may be accomplished by using additional design measures. Among the design measures to be considered could include alignment shifts during the design of the proposed road. Alternate 6, as

shown on Exhibit V-3, is located the furthest to the west in comparison to Alternates 1 and 3. Alternate 6 could potentially be shifted further west to follow the railroad and minimize the impacts to the rural historic district.

The location of Alternate 8 incorporates all feasible design measures to minimize harm to the rural historic district. Several iterations were reviewed with the use of barrier walls and reducing the median width to avoid or minimize the impacts. Additional minimization measures for the rural historic district could include providing landscaped screening to reduce visual impacts.

## **5. Coordination**

Coordination with the West Virginia Division of Culture and History, State Historic Preservation Officer (SHPO) and other agencies has taken place throughout the course of the study. Coordination and meetings with SHPO and other agencies included discussions concerning the determination of Section 4(f) properties, avoidance alternatives, and measures to minimize harm.

## **C. OLIVE BOY SECTION 4(f) PROPERTY**

### **1. Description of the Olive Boy Farm**

#### **a. Size and Location**

The Olive Boy Farm is eligible for listing on the National Register of Historic Properties and is located on the east side of US 340. The historic property boundaries encompass approximately 181.6 acres (74 hectares) and represent the previous ownership boundaries of the Olive Boy Farm. The current farm contains about 16.9 acres (6.8 hectares) with the remainder of the historic property being part of another larger farm.

#### **b. Relationship to Alternatives**

Alternates 6 and 8 extend into the historic property boundaries. These alternates border the western boundary of the property along US 340 and are located approximately 1,500 feet (450 meters) from the main house. Exhibits V-4 and V-5 show the location of the Olive Boy property in relation to these build alternate.

**c. Ownership and Type of Section 4(f) Property**

The Olive Boy property is privately owned. The property was constructed by Dr. Blackburn sometime in the 1840's. The main house is a fine example of the Italianate style as expressed by local craftsmen. The setting is pristine and includes several outbuildings. These outbuildings include: a stone springhouse, the Blackburn cemetery, a one-story kitchen/slave quarters, a small frame barn, a 1990 tenant house, and a 1970 turn-out shed. According to the Phase I Architectural Reconnaissance Survey completed for this project, the property possesses sufficient architectural and historical importance to meet the National Register Criteria under Criteria C.

**d. Function**

There are no public activities on the Olive Boy property.

**e. Facilities**

There are no public facilities on the Olive Boy property. The private facilities include the main house and other associated buildings.

**f. Access**

Access to the Olive Boy property is by private drive. The driveway to the tenant house is from existing US 340. The driveway to the main house on Olive Boy Farm is accessed from Jefferson County 38.

**g. Relationship to Similarly Used Lands**

In Jefferson County, West Virginia, there are other privately owned farm properties that have been either listed or determined eligible for listing in the National Register of Historic Places. The William Grubb Farm, located on the north side of Jefferson County 340/2, west of US 340, is listed on the National Register. Two other historic properties in the project area include the Wayside Farm and the Glenwood Farm. These two farms are located east of US 340 and north of the Olive Boy Farm. As with the Olive Boy Farm, these farms are eligible for listing on the National Register. These similar properties are discussed elsewhere in this document.

**h. Applicable Clauses Affecting Ownership**

There are no known special covenants, restrictions, or deed conditions that would preclude the use of the Olive Boy Farm for highway purposes.

**i. Unusual Characteristics**

There are no unusual characteristics of the Section 4(f) property.

**2. Impacts On The Section 4(f) Olive Boy Property**

The Olive Boy property is impacted by land acquisition for conceptual right of way with both Alternates 6 and 8. As shown on Exhibit V-5, Alternates 6 and 8 follow approximately the same alignment in this location along the edge of the western boundary of Olive Boy. Alternate 6 will require 5.4 acres (2.2 hectares). Alternate 8 will require less property, 3.7 acres (1.5 hectares), since the alignment for Alternate 8 turns sharper, west away from existing US 340 at this location. No standing structures will be directly impacted with either of these alternates.

Air quality in the region is not adversely affected from the project. In fact, air quality improves when comparing the six build alternates with the No-Build Alternate. Based on proximity, noise impacts may occur along each of the build alternates. Considering the alignment developed in this phase of the project, noise abatement measures do not appear to be feasible or reasonable for the Olive Boy Farm.

The major construction elements of this project are expected to be earth removal, hauling, grading, and paving. General noise impacts, such as temporary speech interference for passerby and those individuals living or working near the project, can be expected, particularly from paving operations and grading equipment. However, considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours, these impacts are not expected to be substantial. So that the impact from construction noise is minimal, the contractor will be required to follow specifications concerning construction noise as contained in WVDOT's Standard Specifications.

Both Alternates 6 and 8 are visible from within the boundaries of this historic property. These alternates are evaluated as having a low impact to the visual environment of this property. These alternates are low impact from these alternates is due to the alternate's location in relation to the existing roadway and the historic property.

### **3. Avoidance Alternates**

The No-Build Alternative avoids impacting the Olive Boy Farm. Although the No-Build Alternative would not impact the Olive Boy property, it is not a prudent alternative since it would not meet the purpose and need for the project.

Alternates 6 and 8, as shown on Exhibit V-5, impact the edge of the Olive Boy Farm. A preliminary location for Alternate 8 initially avoided the Olive Boy Farm. However, this location required changes in the location to incorporate the two-lane section of existing US 340 into the project. The two-lane section of US 340 in Virginia extends through the Long Marsh Run Rural Historic District and the Clarke County Agricultural District. In order to avoid impacting these two properties, the proposed improvements in Virginia will be constructed within the existing right of way. In an effort to minimize the impact and amount of right of way needed from the Kabletown Historic District, the alignments of Alternates 6 and 8 are located where right of way is required from the Olive Boy Farm. Prior to the completion of the Final Environmental Impact Statement, the location of the preferred alternative, either Alternate 6 or 8, will be reviewed to minimize or avoid impacts to the Olive Boy Farm can be avoided. Although these revisions to the preferred alternative may require some additional property from the Kabletown Rural Historic District, the preferred alternative could likely avoid impacting the Olive Boy Farm.

### **4. Measures To Minimize Harm**

Minimizing harm to the Section 4(f) property may be accomplished by additional design measures. Among the measures to be considered will be alignment shifts during the final design of the proposed roadway. Alternates 6 and

8 will be reviewed to determine if shifting away from the property to minimize harm or perhaps to even avoid the Olive Boy Farm is feasible based on the design limitations in Virginia. Additional measures to minimize harm include providing screening to reduce visual impacts.

## **5. Coordination**

Coordination with the West Virginia State Historic Preservation Office (SHPO) and other agencies has taken place throughout the course of the study. Coordination and meetings with SHPO and other agencies included discussions concerning the determination of Section 4(f) properties, avoidance alternatives, and measures to minimize harm.

## **D. THE RIPON LODGE SECTION 4(f) PROPERTY**

### **1. Description of the Ripon Lodge Property**

#### **a. Size and Location**

The National Register listed Ripon Lodge property consists of approximately 195 acres (79 hectares). It is located along existing US 340 just north of the community of Rippon. The Ripon Lodge is one of the most prominent properties within the area. The lodge dates back to 1833. The lodge was placed on the National Register of Historic Places in 1984. In addition, the property includes many nineteenth and early-twentieth century outbuildings. Cultural resource investigations indicate that the National Register boundaries for this property were expanded in 1998 to include these significant outbuildings and parcel limits. This expansion is located between the main house and the Norfolk & Western Railroad to the west, WV 19 to the south, the existing US 340 to the east, and the parcel limit to the north. The historic property is used as a private residence.

The Ripon Lodge is situated at an elevation of about 540 feet (165 meters) above mean sea level. The surrounding landscape consists of gentle hills, with variations in elevation of about 5 feet (1.5 meters), and planted trees and shrubs. Surrounding land is used for grazing livestock and other agricultural purposes.

**b. Relationship to Alternatives**

The Ripon Lodge faces east, towards the existing US 340, and is approximately 1,700 feet (520 meters) west of the roadway. Alternate 8 is located west of the property approximately 245 feet (75 meters) from the historic property boundary. Alternate 6 transects the historic property approximately 900 feet (275 meters) west of the main house in close proximity to the active Norfolk and Western Railroad. Exhibits V-4 and V-6 show the location of the Ripon Lodge property in relation to the alternates.

**c. Ownership and Type of Section 4(f) Property**

The Ripon Lodge property is privately owned. The stone house was supposedly constructed by Henry S. Turner in 1833 and given to his son, William F. Turner. The property was originally part of the Wheatlands estate, now located to the north. The Turners were a prominent nineteenth-century Jefferson County family. William T. Turner was a justice of the peace and a member of the Virginia House of Delegates. The property passed out of the Turner-family ownership in 1916. Architecturally, Ripon Lodge is one of the most prominent properties in the area. The property was originally listed on the National Register of Historic Places in 1984. The property limits were expanded in a 1998 National Register boundary increase.

The house is constructed of native limestone and possesses great integrity of design and workmanship, particularly in its interior woodwork. It appears that the right two bays of this 2-story, 3-bay stone dwelling were constructed first, perhaps earlier than 1833. The right bay appears to be a late addition, making the house a symmetrical, single-pile, central-passage-plan. An enclosed frame breezeway attaches the north end of the house to a 1 1/2-story stone slave quarters/summer kitchen that dates to the original part of the house. The property also contains a fine collection of nineteenth and early twentieth-century outbuildings. This includes a stone pyramidal roofed smokehouse (early nineteenth century); a frame carriage house with later additions (mid-nineteenth century); a tenant house of the American Foursquare form (circa 1910's); a frame bank barn on stone foundation with an 1852 inscription; a frame corncrib (late

nineteenth century); a framed, 1-room, Gothic Revival-style schoolhouse (mid-nineteenth century); a privy; a pigsty; a vacant tenant house; and five modern outbuildings.

**d. Function**

There are no public activities on the Ripon Lodge property.

**e. Facilities**

There are no public facilities on the Ripon Lodge property. The private facilities include the farmhouse and other associated buildings.

**f. Access**

Access to the Ripon Lodge property is by private drive. The main driveway to the house is from US 340.

**g. Relationship to Similarly Used Lands**

In Clarke County, Virginia, and Jefferson County, West Virginia, there are other privately owned farm properties that have been either listed or determined eligible for listing in the National Register of Historic Places. One of these is the William Grubb Farm located on the north side of Jefferson County 340/2, west of US 340 in West Virginia. This similar property is discussed elsewhere in this document.

**h. Applicable Clauses Affecting Ownership**

There are no known special covenants, restrictions, or deed conditions that would preclude the use of the Ripon Lodge property for highway purposes.

**i. Unusual Characteristics**

The Ripon Lodge property is bounded by US 340 to the east, WV 19 to the south, and the Norfolk and Western Railroad to the west. Therefore, the property is bounded on three sides by transportation facilities.

## **2. Impacts On The Section 4(f) Ripon Lodge Property**

The Ripon Lodge property is directly impacted by Alternate 6 by land acquisition. Alternate 6 will acquire approximately 15.9 acres (6.4 hectares) of land from the expanded limits of the historic property, at the back of the property near the railroad tracks. Alternate 6 will not directly impact any standing structures.

Air quality in the region is not adversely affected from the project. In fact, air quality improves when comparing the six build alternates with the No-Build Alternate. Due to the project, noise impacts occur along the build alternates. Considering the alignments developed in this phase of the project, noise abatement measures do not appear to be feasible or reasonable for the Ripon Lodge property.

The major construction elements of this project are expected to be earth removal, hauling, grading, and paving. General noise impacts, such as temporary speech interference for passerby and those individuals living or working near the project, can be expected, particularly from paving operations and grading equipment. However, considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours, these impacts are not expected to be substantial. So that the impact from construction noise is minimal, the contractor will be required to follow specifications concerning construction noise as contained in WVDOT's Standard Specifications and in VDOT's Road and Bridge Specifications.

Alternate 6 transects this historic property and will have adverse implications to the visual setting of the property as a whole. Alternate 6 has been evaluated as having a high impact to the visual characteristics associated with the property. This is due to the historic designation of this property, the proximity of these alternates to the Ripon Lodge, and the disturbance of the existing landscape. Alternate 8 will not be visible from the house but will be visible from the barns located in the back of the property. Alternate 8 is considered to have a moderate visual impact to Ripon Lodge. The visual impacts to the property do not substantially impair the historic integrity of the historic site.

**3. Avoidance Alternates**

The No-Build Alternative and Alternate 8 avoid a land acquisition impact to the Section 4(f) property of the Ripon Lodge. Exhibit V-4 shows the relationship of Alternate 8 to the historic property. Although the No-Build Alternative would not impact the Ripon Lodge property, it is not considered a prudent alternative for the project. The No-Build Alternative would not meet the purpose and need for the project. Therefore, Alternate 8 is considered the avoidance alternative for the Ripon Lodge Section 4(f) property.

**4. Measures To Minimize Harm**

Minimizing harm to this Section 4(f) property may be accomplished by additional design measures. Among the measures to be considered will be altering the roadway typical section to reduce takings of the historic sites and providing landscaped screening to reduce visual impacts. In addition, Alternate 6 could be shifted further to the west along the railroad tracks to minimize the amount of property required for right of way.

**5. Coordination**

Coordination with the West Virginia State Historic Preservation Office (SHPO) and other agencies has taken place throughout the course of the study. Coordination and meetings with SHPO and other agencies included discussions concerning the determination of Section 4(f) properties, avoidance alternatives, and measures to minimize harm.

**E. THE STRAITHMORE SECTION 4(f) PROPERTY**

**1. Description of the Straithmore Property**

**a. Size and Location**

The Straithmore property is eligible for listing on the National Register of Historic Properties. The property consists of approximately 160 acres (65 hectares). The Straithmore property is located on the north end of the project along the existing US 340. It is a Federal-style house that was constructed in 1827. Also located on the property are the ruins of a stone mill and other stone

and wood remnants from various buildings. The house faces west and is situated on top of a hill that grades down to Bullskin Run Creek.

The main residence is at an elevation of 510 feet (155 meters) above mean sea level. Existing US 340 is about 1,150 feet (350 meters) west of the main house. The topography between the house and the roadway varies in elevation, making it difficult, if not impossible, to see the existing roadway.

**b. Relationship to Alternatives**

Alternate 6 is located west of the historic property at approximately the same location as existing US 340. Existing US 340 is located approximately 1,300 feet (397 meters) west of the main house. Alternate 8 is located further west of the railroad. Exhibits V-4 and V-7 show the location of the Straithmore property in relation to the alternates.

**c. Ownership and Type of Section 4(f) Property**

The Straithmore property is privately owned. This land originally belonged to Henry L. Turner of Wheatland. He sold it to John Jacob Myers in 1827. It is presumed that Myers constructed the house. In 1848 the Straith family inherited it. Later, it passed into the Brisco Family. The mill predates the house and was not originally part of the property. The setting at Straithmore is beautiful. An old road trace is evident in the front yard. The house faces west on a hill above Bullskin Run.

Straithmore possesses great integrity of design and workmanship and is a fine example of a brick Federal-style dwelling with an attached brick service wing (Jefferson County Historical Society). It is composed of a 5-bay, 2-story brick section with a recessed 1 1/2-story, 2-bay service wing. The mill ruins (Turner's Mill and, later, Baney's Mill) further enhance the property's significance. Other outbuildings include two frame barns (circa 1900), a brick 2-story smokehouse with gable roof (circa 1827), and a modern, 3-bay, 1 1/2-story log building under construction using logs from a house on the neighboring property. According to the Phase I Architectural Reconnaissance Survey completed for this

project, the property possesses sufficient architectural and historical importance to meet the National Register Criteria under Criterion A and C.

**d. Function**

There are no public activities on the Straithmore property.

**e. Facilities**

There are no public facilities on the Straithmore property. The private facilities include the farmhouse and other associated buildings.

**f. Access**

Access to the Straithmore property is by private drive. The main driveway to the house is accessed from Jefferson County 340/2, east of US 340.

**g. Relationship to Similarly Used Lands**

In Jefferson County, West Virginia, there are other privately owned farm properties that have been either listed or determined eligible for listing in the National Register of Historic Places. One of these is the William Grubb Farm located on the north side of Jefferson County 340/2, west of US 340 in West Virginia. This similar property is discussed elsewhere in this document.

**h. Applicable Clauses Affecting Ownership**

There are no known special covenants, restrictions, or deed conditions that would preclude the use of the Straithmore property for highway purposes.

**i. Unusual Characteristics**

There are no unusual characteristics of the Section 4(f) property.

**2. Impacts On The Section 4(f) Straithmore Property**

The Straithmore property is impacted by land acquisition under Alternate 6 but not Alternate 8. Alternate 6 will require approximately 6.1 acres (2.5 hectares) for right of way. The property to be acquired is located along existing US 340, the western edge of the historic property.

Air quality in the region is not adversely affected from the project. In fact, air quality improves when comparing the six build alternates with the No-Build Alternate. Due to the project, noise impacts may occur along the build alternates. Considering the alignments developed in this phase of the project, noise abatement measures do not appear to be feasible or reasonable for the Straithmore property.

The major construction elements of this project are expected to be earth removal, hauling, grading, and paving. General noise impacts, such as temporary speech interference for passerby and those individuals living or working near the project, can be expected, particularly from paving operations and grading equipment. However, considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours, these impacts are not expected to be substantial. So that the impact from construction noise is minimal, the contractor will be required to follow specifications concerning construction noise as contained in WVDOT's Standard Specifications.

Both Alternates 6 and 8 lie west of this property. The natural landscape and vegetation obstruct any view of the existing roadway from the main house. Alternate 8 is considered to have no visual impact to the property. However, Alternate 6 has been evaluated as having a low visual impact to the property. Alternate 6 will introduce a new four-lane divided roadway along the historic property. Visual impacts to the Straithmore property will not substantially impair the historic integrity of this historic property.

### **3. Avoidance Alternates**

The No-Build Alternative and Alternate 8 would not impact the Section 4(f) property of Straithmore. Exhibits V-4 and V-7 show the relationship of the alternates to the property. Although the No-Build Alternative would not impact the Straithmore property, it is not considered a prudent alternative. The No-Build Alternate would not meet the purpose and need for the project. Therefore, Alternate 8 is considered the avoidance alternative for this property.

**4. Measures To Minimize Harm**

Minimizing harm to the Section 4(f) property may be accomplished by additional design measures. The design of the selected alternate will be coordinated with the West Virginia State Historic Preservation Office (SHPO).

**5. Coordination**

Coordination with the West Virginia State Historic Preservation Office (SHPO) and other agencies has taken place throughout the course of the study. Coordination and meetings with SHPO and other agencies included discussions concerning the determination of Section 4(f) properties, avoidance alternatives, and measures to minimize harm.

**F. THE WHEATLANDS SECTION 4(f) PROPERTY**

**1. Description of the Wheatlands Farm**

**a. Size and Location**

The Wheatlands Farm is considered eligible for listing on the National Register of Historic Properties as an archaeological site. The estimated site boundaries encompass approximately 16.8 acres (7 hectares). The Wheatlands Farm site is located on the north end of the project area south of Jefferson County 340/2 and west of existing US 340.

**b. Relationship to Alternatives**

Alternate 6 crosses into the Wheatlands Farm 1,300 feet (390 meters) west of existing US 340. Alternate 8 is located over 1,600 feet (489 meters) west of the site. Exhibit V-4 shows the general location of the Wheatlands Farm in relation to the build alternates.

**c. Ownership and Type of Section 4(f) Property**

The Wheatlands Farm is privately owned and is located on a low hill overlooking Bullskin Run. The archaeological site encompasses the original location of the Wheatlands Farm main house and surrounding features. The original house on this property was constructed in the 1830's by Henry L. Turner,

a prominent citizen and large landholder. His limestone house was torn down in this century. The Wheatlands estate was originally called Castle Thunder and included a very large geographic area. All that survives from the period of the house are three stone buildings and three stone foundations. However, the archaeological remains on this site are extensive.

The presence of the three extant outbuildings and three stone foundations appear to comprise the farm complex as it existed toward the end of the nineteenth-century. The Wheatlands Farm site is considered eligible for the National Register under Criterion A, as one of the early settlement sites in the regions, Criterion B, for its association with the Turner family, and Criterion D, for its ability to yield important historic information.

**d. Function**

There are no public activities on the Wheatlands Farm.

**e. Facilities**

There are no public facilities on the Wheatlands Farm. The private facilities include three modern turn-out sheds for horses, a large modern barn, and a modern trailer.

**f. Access**

Access to the Wheatlands Farm is by private drive. The main driveway to the property is from US 340.

**g. Relationship to Similarly Used Lands**

In Jefferson County, West Virginia, there are other privately owned farm properties that have been either listed or determined eligible for listing in the National Register of Historic Places. The William Grubb Farm listed on the National Register and is located on the north side of Jefferson County 340/2, west of US 340 in West Virginia. Five other farms in the project area are eligible for the National Register and are discussed elsewhere in this document.

**h. Applicable Clauses Affecting Ownership**

There are no known special covenants, restrictions, or deed conditions that would preclude the use of the Wheatlands Farm site for highway purposes.

**i. Unusual Characteristics**

There are no unusual characteristics of the Section 4(f) property.

**2. Impacts On The Section 4(f) Wheatlands Farm**

The Wheatlands Farm would be impacted by land acquisition for conceptual right of way with Alternate 6. Approximately 6.6 acres (2.7 hectares) of right of way would be acquired for Alternate 6. This alternate would require the removal of two of the three existing stone buildings and the stone foundation of the main house. Alternate 8 will not require any property from the historic site.

The Wheatlands Farm would be impacted during the construction of this project since the major elements during construction include earth removal, hauling, grading, and paving. Air quality in the region is not adversely affected from the project. In fact, air quality improves when comparing the six build alternates with the No-Build Alternate. Due to the project, noise impacts occur along the build alternates, however since the site does not meet the National Register Criteria for standing structures, noise abatement measures were not considered for the Wheatlands Farm.

Alternate 6 is evaluated as having high visual impact to this site since a modern roadway would be introduced through the middle of its farm setting. Alternate 8 will have no visual impact to the site since it will not be clearly visible from the site.

**3. Avoidance Alternates**

The No-Build Alternative and Alternate 8 would not impact the Section 4(f) Wheatlands Farm site. Alternate 6 does impact this archaeological site. Exhibit V-4 shows the relationship of the alternates to the property. Although the No-Build Alternative would not impact the Wheatlands Farm, it is not considered a

prudent alternative because it would not meet the purpose and need for the project. Therefore, Alternate 8 is considered the avoidance alternatives for this archaeological site.

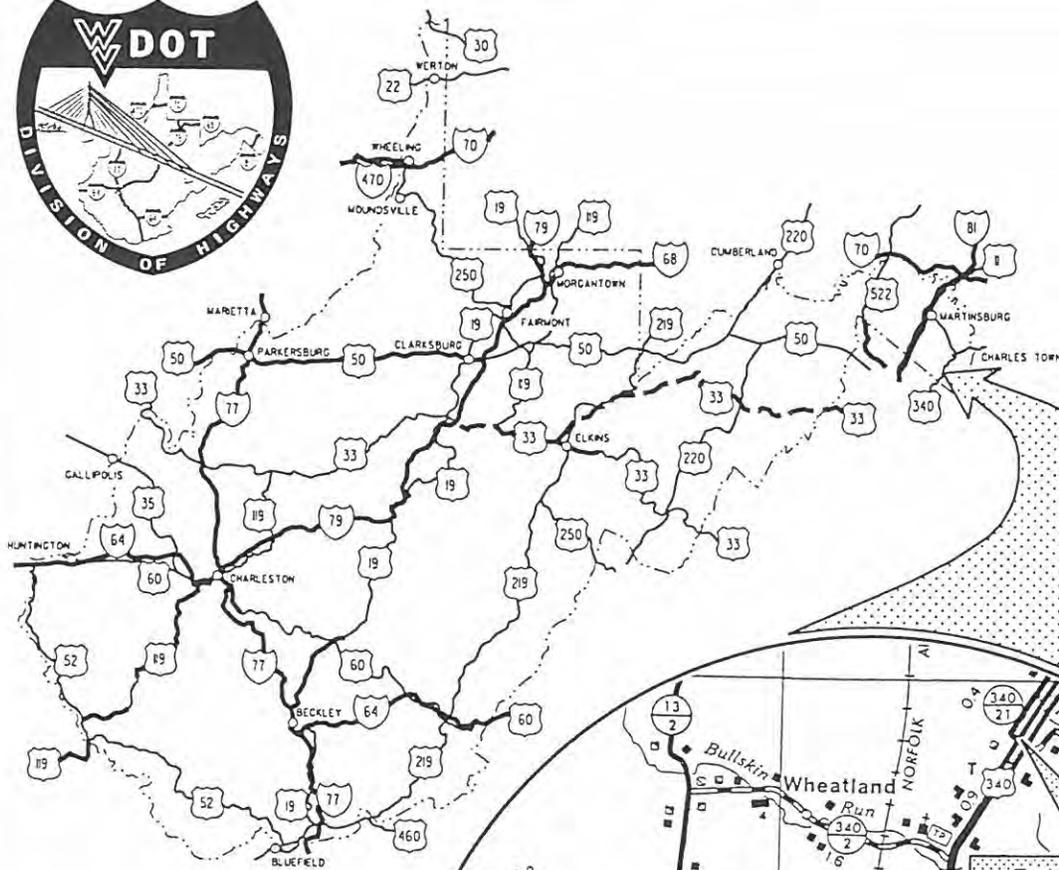
**4. Measures To Minimize Harm**

Minimizing harm to the Section 4(f) property may be accomplished with data recovery in the areas impacted by the proposed roadway. If preservation in place is considered for the site, specific measures to preserve the site would be considered where practical and will be coordinated with the West Virginia State Historic Preservation Officer, (SHPO).

**5. Coordination**

Coordination with the SHPO and other agencies has taken place throughout the course of the study. Coordination and meetings with SHPO and other agencies included discussions concerning the determination of Section 4(f) properties, avoidance alternatives, and measures to minimize harm.

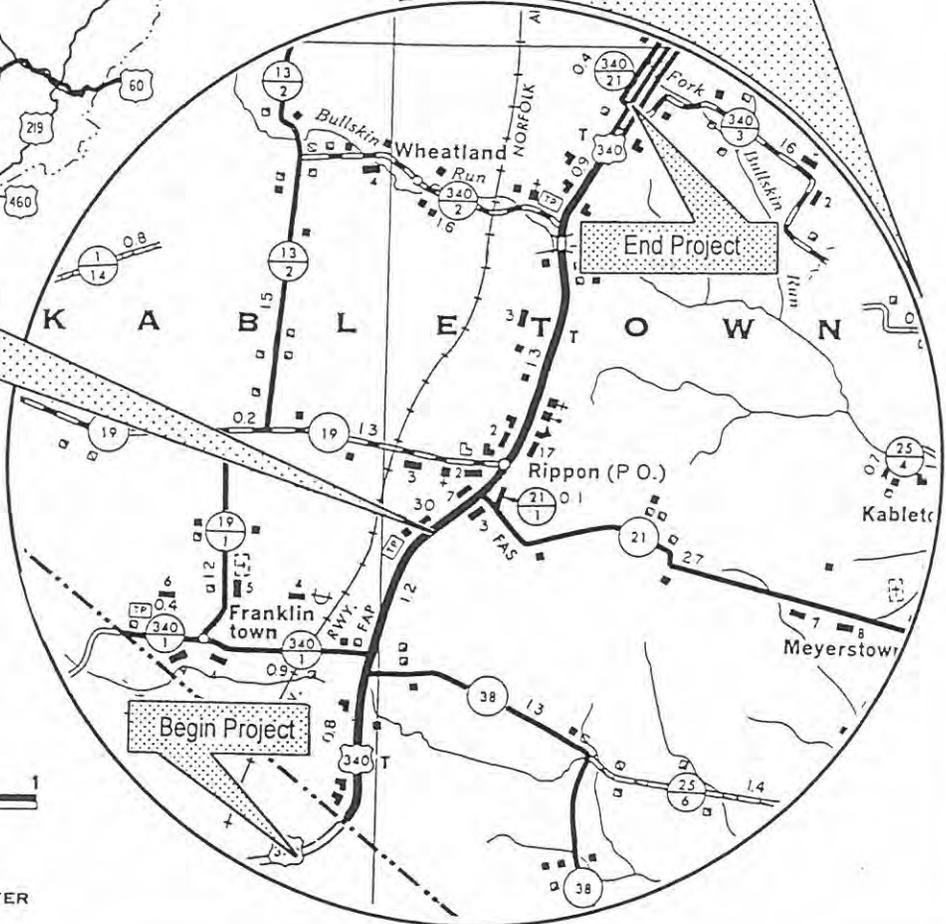
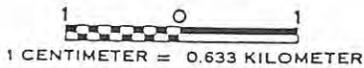
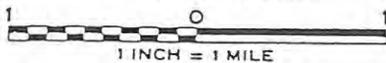




Project Location

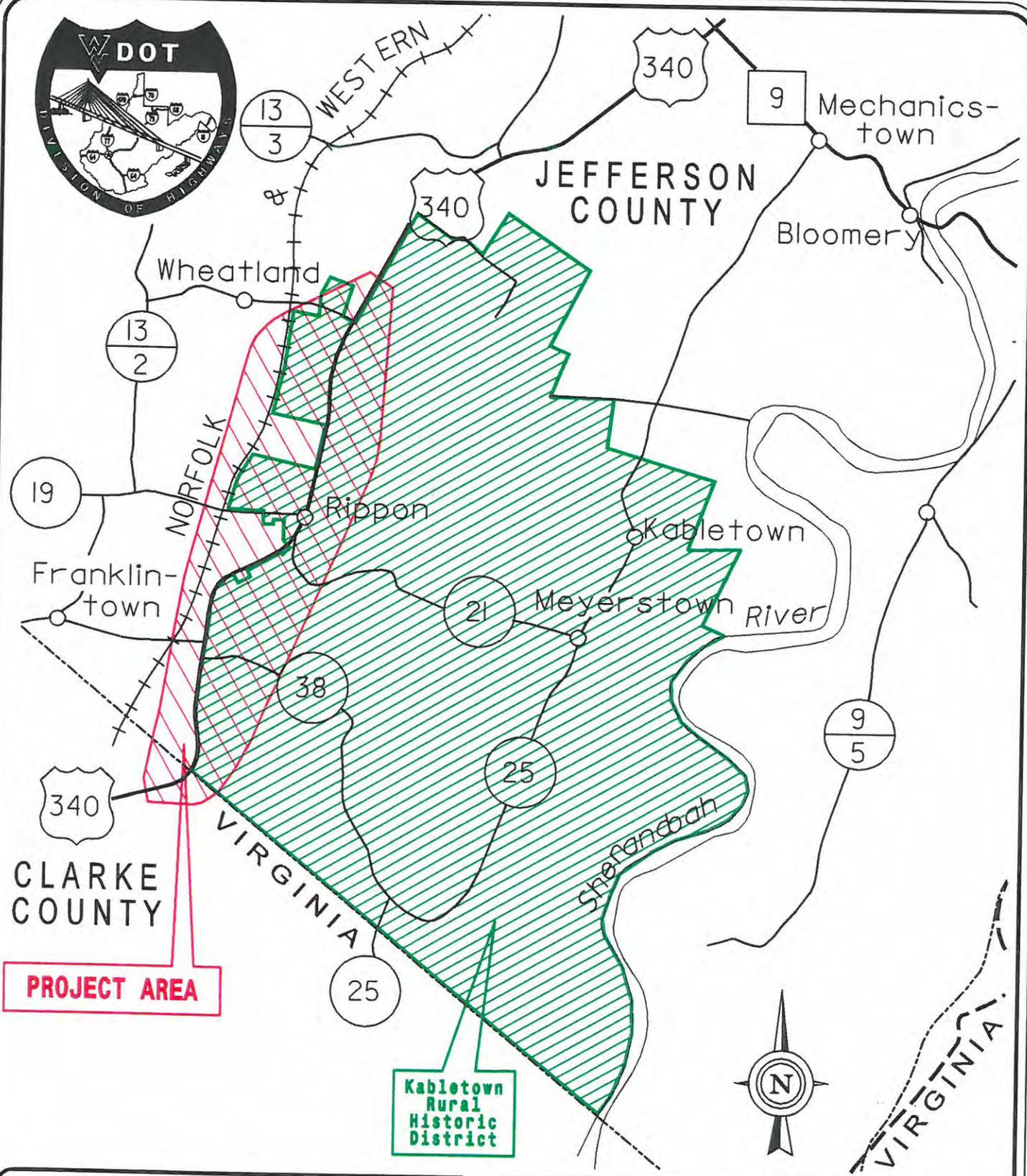


Scale for Vicinity Detail



# US 340 IMPROVEMENT STUDY

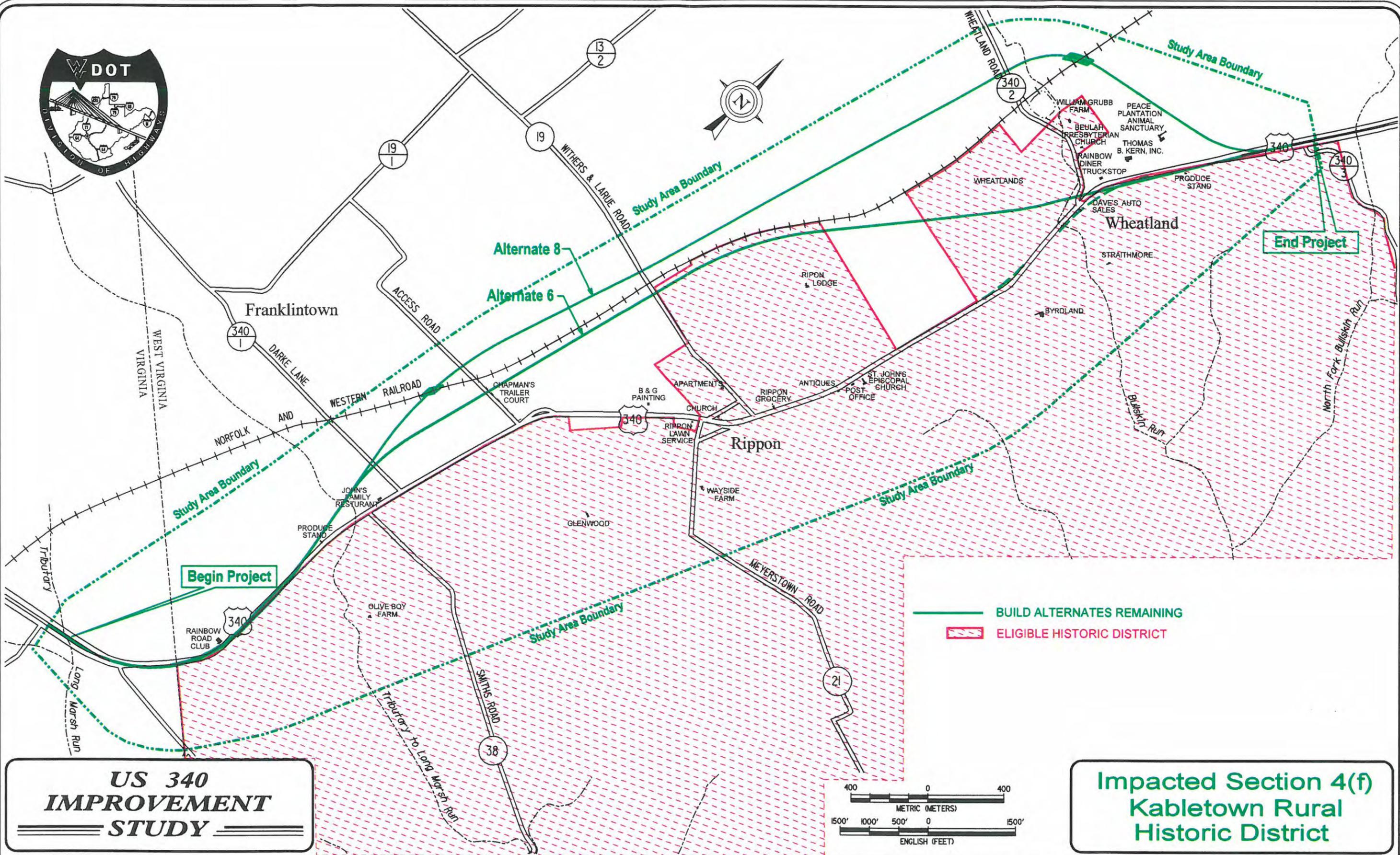
## Project Vicinity



**US 340  
IMPROVEMENT  
STUDY**

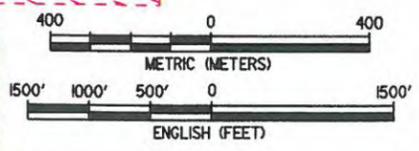
**Kabletown Rural  
Historic District  
Boundaries**

**Exhibit V-2**

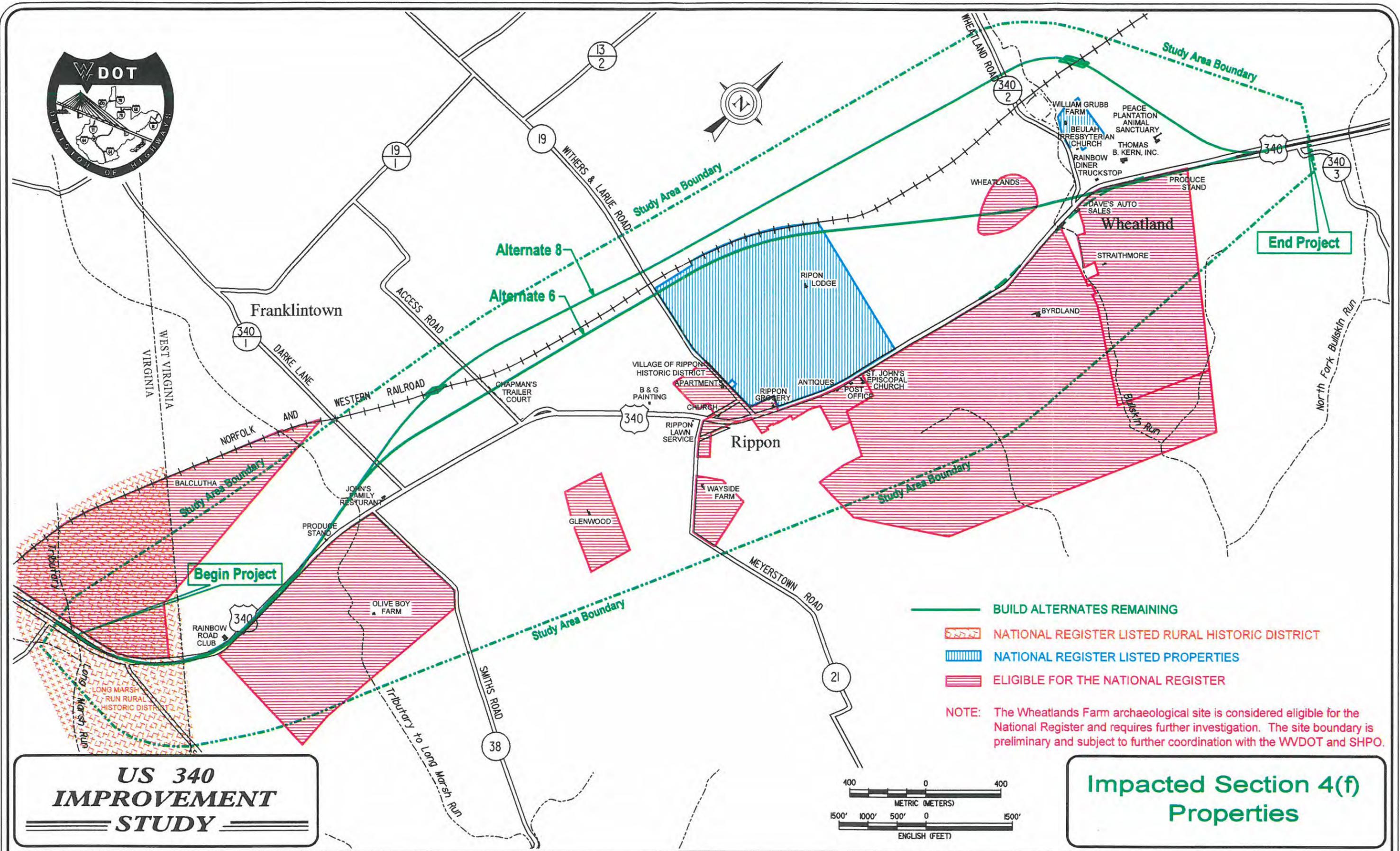


**US 340  
IMPROVEMENT  
STUDY**

**BUILD ALTERNATES REMAINING**  
**ELIGIBLE HISTORIC DISTRICT**



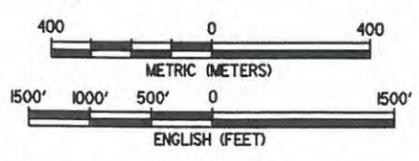
**Impacted Section 4(f)  
Kabletown Rural  
Historic District**



# US 340 IMPROVEMENT STUDY

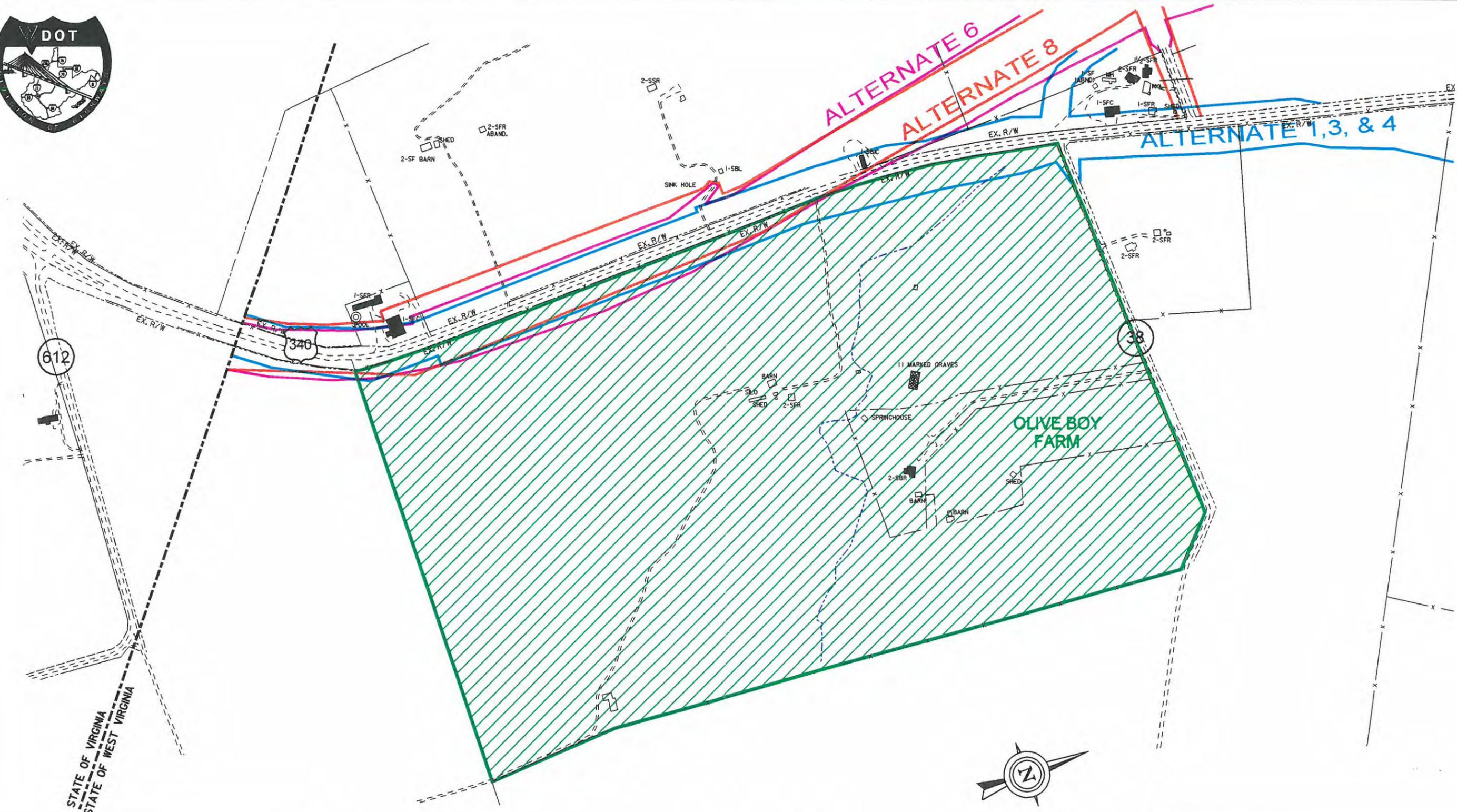
- BUILD ALTERNATES REMAINING
- NATIONAL REGISTER LISTED RURAL HISTORIC DISTRICT
- NATIONAL REGISTER LISTED PROPERTIES
- ELIGIBLE FOR THE NATIONAL REGISTER

NOTE: The Wheatlands Farm archaeological site is considered eligible for the National Register and requires further investigation. The site boundary is preliminary and subject to further coordination with the WVDOT and SHPO.

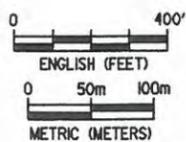


## Impacted Section 4(f) Properties

Exhibit V-4



**US 340  
IMPROVEMENT  
STUDY**



**Impacted  
Olive Boy Farm  
Property**



ALTERNATE 8

NORFORK & SOUTHERN RAILROAD  
EX. R.R. RW.

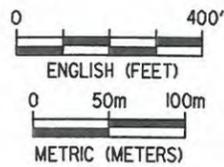
ALTERNATE 6

ALT. 6

ALT. 1

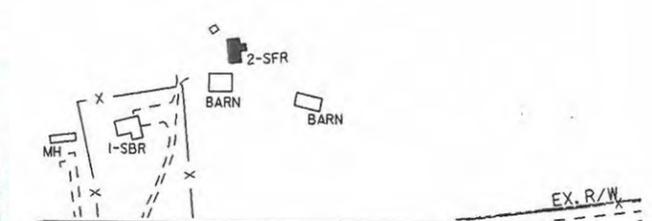
ALTERNATES 1 & 3

RIPON LODGE



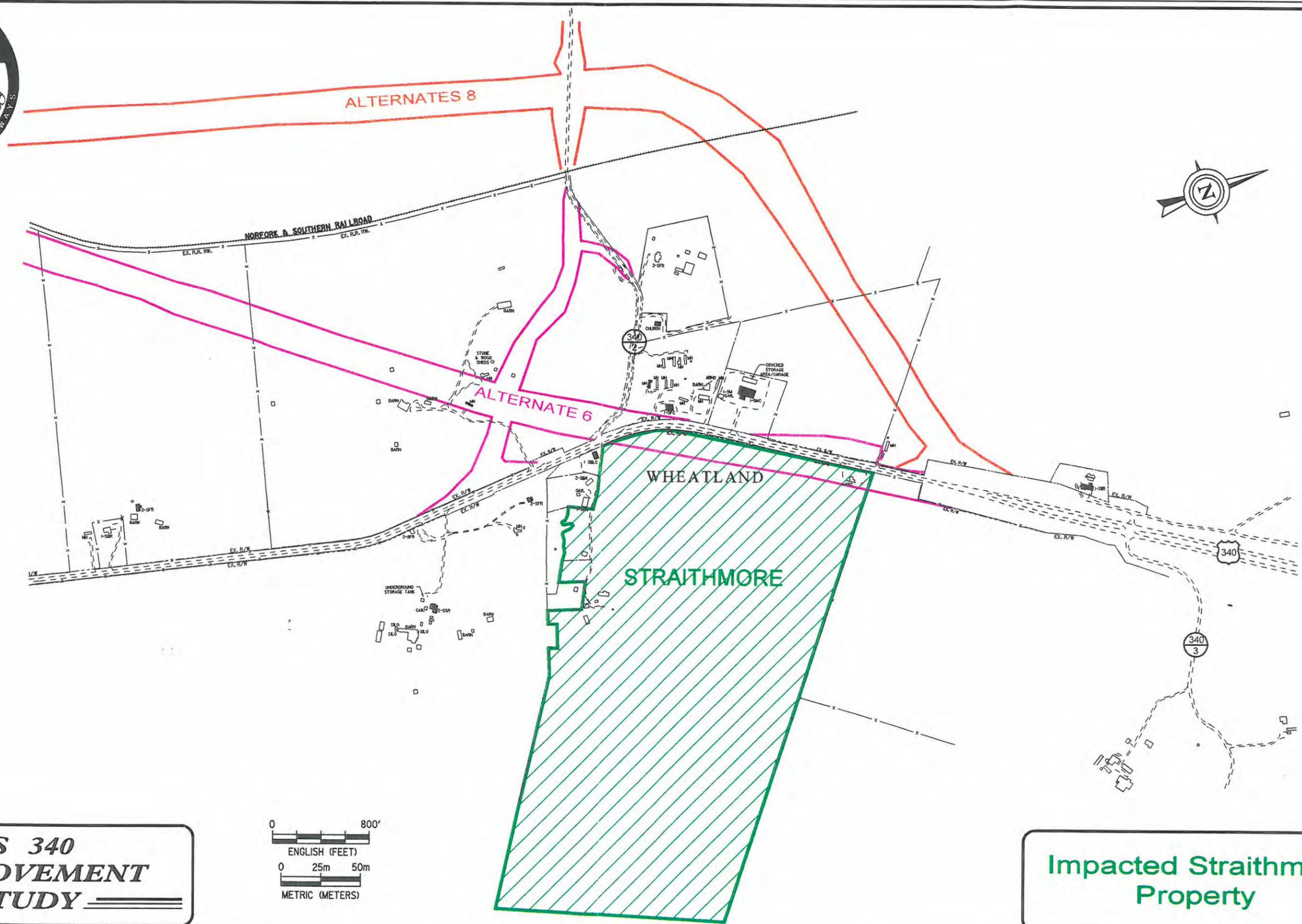
**US 340  
IMPROVEMENT  
STUDY**

RIPPON

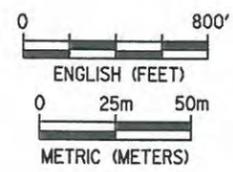


**Impacted  
Ripon Lodge  
Property**

Exhibit V-6



**US 340  
IMPROVEMENT  
STUDY**



**Impacted Straithmore  
Property**

## **VI. LIST OF PREPARERS**

This document was prepared by the West Virginia Department of Transportation and the Federal Highway Administration with assistance from H. W. Lochner, Inc. in cooperation with Coastal Carolina Research, Inc. The following persons contributed to this document:

### **West Virginia Department of Transportation**

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Norse B. Angus Environmental Analysis	B.S. degree in Biology
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Seventeen years experience as an archaeologist, seven as president of Coastal Carolina Research.

Maral S. Kalbian  
Principal Investigator

Nine years experience in conducting cultural resource studies.

Mary Ann Holm, Ph.D.  
Field Director/Principal Investigator

Fifteen years experience in directing archaeological excavations, specializing in faunal analysis.



**VII. LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS  
TO WHOM COPIES OF THIS STATEMENT ARE SENT**

**FEDERAL AGENCIES**

Mr. Fred Pozzutto  
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Pittsburgh District  
1000 Liberty Avenue  
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Mr. Dave Rider  
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Region 3  
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Philadelphia, Pennsylvania 19103

Mr. Lynn Shutts  
Natural Resources Conservation  
Service  
US Department of Agriculture  
75 High Street  
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Mr. Thomas Smith  
Division Administrator  
Federal Highway Administration  
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Dr. Willie R. Taylor  
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Office of Environmental Affairs  
US Department of Interior  
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Washington, DC 20240

Mr. Jeffrey Towner  
Field Supervisor  
US Fish and Wildlife Service  
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Elkins, West Virginia 26241-9475

Ms. Pearl Young  
US Environmental Protection Agency  
Office of Federal Activities, NEPA  
Compliance Division  
EIS Filing, Room 7241  
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Office  
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Northwest  
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**STATE AGENCIES**

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25305-0315

Mr. Lyle Bennett  
WV Department of Environmental  
Protection  
Water Resources Section  
1201 Greenbrier Street  
Charleston, West Virginia 25311

Mr. Michael Callaghan  
Director  
Division of Environmental  
Protection  
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Nitro, West Virginia 25143-2506

Mr. Ed Hamrick  
Director  
Division of Natural Resources  
Building 3, Room 669  
1900 Kanawha Boulevard, East  
Charleston, West Virginia  
25305-0660

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Director of Engineering  
West Virginia Division of Highways  
District Five  
P.O. Box 99  
Burlington, West Virginia 26710

Mr. Edward Kropp  
Office of Air Quality  
7012 MacCorkle Avenue, Southeast  
Charleston, West Virginia 25304

Ms. Susan Pierce  
Deputy State Historic Preservation  
Officer  
West Virginia Division of Culture  
and History  
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Charleston, West Virginia  
25305-0300

**LOCAL AGENCIES**

Region 9 - Eastern Panhandle  
Regional Planning & Development Council  
121 W. King St.  
Martinsburg, WV 25401

Jefferson County Commission  
Charles Town, West Virginia 25414

## VIII. COMMENTS AND COORDINATION

### A. Early Coordination

WVDOT implemented the scoping process for this project as required by the Council of Environmental Quality Guidelines. An agency scoping package was distributed to appropriate federal and state agencies, as well as local agencies and officials. The scoping package described the objectives of the scoping process, provided a project description, brief summaries of need for action and the project status, and a list of possible constraints to be considered during project planning. The scoping package included a checklist of possible Draft Environmental Impact Statement issues and requested that agencies in response to the scoping check off the issues which should be of primary or secondary emphasis. The scoping package was distributed in July 1996. The following agencies were sent the scoping package and provided responses:

AGENCY	RESPONSE
WV Bureau of Commerce - Division of Natural Resources	8-19-96
WV Bureau of Commerce - Division of Tourism	
WV Health and Human Services - Environmental Engineering	
WV Bureau of Environment - Water Resources Section	
WV Bureau of Environment - Waste Management Section	
WV Bureau of Environment - Division of Environmental Protection	
WV Bureau of Environment - Division of Environmental Protection - Office of Air Quality	7-22-96
WV Division of Culture and History	
US Army Corps of Engineers - Pittsburgh District	8-9-96
US Army Corps of Engineers- Baltimore District	8-5-96
US Fish and Wildlife Service	8-29-96
US Department of Agriculture - Natural Resource Conservation Service	
US Environmental Protection Agency	8-29-96
Jefferson County Commission	
Jefferson County Planning Commission	
Eastern Panhandle Regional Planning and Development Council	

The Federal Highway Administration issued a Notice of Intent for this project and published it in the Federal Register on February 9, 1996.

## **B. Purpose and Need Coordination**

In accordance with the requirements of the combined NEPA/404 process, the West Virginia Department of Transportation published a Purpose and Need Report for the project in October 1996. This report was sent to various federal, state, and local agencies for review, comment, and concurrence. The following is a list of the agencies sent the Purpose and Need Report along with an indication of those responding and their concurrence dates. Some agencies elected to not respond. For these agencies concurrence has been assumed. There were no agencies that disagreed with the Purpose and Need Report.

AGENCY	RESPONSE
WV Bureau of Commerce - Division of Natural Resources	
WV Bureau of Commerce - Division of Tourism	
WV Health and Human Services - Environmental Engineering Division	
WV Bureau of Environment - Water Resources Section	
WV Bureau of Environment - Waste Management Section	
WV Bureau of Environment - Division of Environmental Protection	
WV Bureau of Environment - Division of Environmental Protection - Office of Air Quality	10-22-96
WV Division of Culture and History	11-21-96
US Army Corps of Engineers - Pittsburgh District	11-7-96*
US Army Corps of Engineers- Baltimore District	11-20-96
US Fish and Wildlife Service	
US Department of Agriculture - Natural Resource Conservation Service	
US Environmental Protection Agency	1-23-97*
Jefferson County Commission	
Jefferson County Planning Commission	
Eastern Panhandle Regional Planning and Development Council	

\* - Agency Concurrence Noted in Response

### **C. Alternatives Coordination**

In further accordance with the requirements of the combined NEPA/404 process, the West Virginia Department of Transportation published an Alternatives Report for the project in February 1997. This report was sent to various federal, state, and local agencies for review, comment, and concurrence. The following is a list of the agencies sent the Alternatives Report along with an indication of those responding and their concurrence dates. Some agencies elected to not respond. For these agencies concurrence has been assumed. There were no agencies that disagreed with the Alternatives Report. The letters received from agencies concerning the project are contained in the Appendix of this document. These letters are arranged according to the date on the letter.

AGENCY	RESPONSE
WV Bureau of Commerce - Division of Natural Resources	4-10-97
WV Bureau of Commerce - Division of Tourism	
WV Health and Human Services - Environmental Engineering Division	
WV Bureau of Environment - Water Resources Section	
WV Bureau of Environment - Waste Management Section	
WV Bureau of Environment - Division of Environmental Protection	
WV Bureau of Environment - Division of Environmental Protection - Office of Air Quality	4-11-97
WV Division of Culture and History	
US Army Corps of Engineers - Pittsburgh District	7-8-97*
US Army Corps of Engineers- Baltimore District	
US Fish and Wildlife Service	
US Department of Agriculture - Natural Resource Conservation Service	
US Environmental Protection Agency	6-19-97*
Jefferson County Commission	
Jefferson County Planning Commission	
Eastern Panhandle Regional Planning and Development Council	

\* - Agency Concurrence Noted in Response

## **D. Cultural Resource Coordination**

In accordance with the requirements of Section 106 of the National Historic Preservation Act, the West Virginia Department of Transportation published the Phase I Cultural Resource Investigation for the project in May 1997. This report was sent to the West Virginia Division of Culture and History, State Historic Preservation Officer (SHPO) for review, comment, and concurrence. The archaeological portion of the document was found to be acceptable by SHPO with written concurrence provided on February 17, 1999. Additional archaeological investigations were initiated and the findings from the sample survey were submitted to SHPO and concurred with in November and December of 1999.

Based on their review of the architectural history portion of the Phase I Cultural Resources Evaluation, the SHPO requested additional studies. The additional studies were performed and the findings were submitted in an "Architectural Evaluation Report" in January 2000 and an Addendum in May 2000. The SHPO concurred with these findings in March 2000 and June 2000. The SHPO also concurred with the preliminary determinations of effects for the historic resources. The correspondence for the coordination with WVSHPO is included in Appendix B.

## **E. Public Involvement Program**

The West Virginia Department of Transportation (WVDOT) held an Informational Public Workshop for the US 340 Improvement Study on Thursday, July 16, 1998, between 4 p.m. and 8 p.m. at the Charles Town City Hall in Charles Town, West Virginia. The Informational Public Workshop was an open format workshop without formal presentation. Representatives of the WVDOT were present at the meeting with displays and maps to discuss the project with the public. Approximately 60 people attended the Informational Public Workshop.

Individuals written comments on the project were received from 88 persons or organizations. The written comments were either provided on a project comment sheet or in letterform. Written responses have been summarized in Table VIII-1. There was some support and opposition for every build alternate and the No-Build

Alternative. The West Virginia Department of Transportation took all comments received into consideration.

Overall, respondents indicated that additional travel lanes were needed to improve the safety and capacity of the existing two-lane section of US 340. The largest difference of opinion was whether the roadway should be located east or west of the community of Rippon.

Approximately 89 percent of the respondents were clearly in favor of locating the proposed road to the east of Rippon on Alternate 4 or Alternate 5. Reasons given for the eastward location included: fewer family relocations, avoids new development, less impact to the community of Rippon, fewer cultural resource impacts, avoids the Ripon Lodge National Register site, fewer noise impacted properties, more open land, and safety issues with the Norfolk Southern railroad. Seven percent of the respondents favored Alternate 6 on the west side of Rippon because of the valuable farmland impacted along Alternates 4 and 5.

Of those respondents preferring an alternate east of Rippon, approximately 67 percent favored Alternate 5 over Alternate 4. Reasons for supporting Alternate 5 included: it would be located further away from Rippon and it would require one less residential relocation than Alternate 4 (1 relocation versus 2 relocations, respectively). Several people supported Alternate 5 only if the roadway plans could be changed to avoid the Wayside Farm on Meyerstown Road (Jefferson County 21).

Residents living within the study area of the project submitted a petition. The petition contained the signatures of 58 residents recommending the development and construction of Alternate 5. Thirty-two of these individuals had not previously submitted written comments or comment sheets.

A final decision on the preferred alternative will be made following the review of comments on the Draft Environmental Impact Statement and information presented as part of the Public Hearing process for the project.

**TABLE VIII-1  
SUPPORT/OPPOSITION SUMMARY**

<b>Build Alternate *</b>	<b>Reasons To Support</b>	<b>Reasons To Oppose</b>
<b>Alternate 1</b>	<ul style="list-style-type: none"> <li>• Avoids farm operations east of Rippon</li> </ul>	<ul style="list-style-type: none"> <li>• Disrupts community of Rippon</li> <li>• Impacts Ripon Lodge Farm</li> <li>• More development west of Rippon</li> </ul>
<b>Alternate 3</b>	<ul style="list-style-type: none"> <li>• Avoids farm operations east of Rippon</li> </ul>	<ul style="list-style-type: none"> <li>• Disrupts community of Rippon</li> <li>• Impacts Ripon Lodge Farm</li> <li>• More development west of Rippon</li> </ul>
<b>Alternate 4</b>	<ul style="list-style-type: none"> <li>• Fewer family relocations</li> <li>• Avoids new development</li> <li>• Less impact to the community of Rippon</li> <li>• Fewer cultural resource impacts</li> <li>• Avoids Ripon Lodge Farm</li> <li>• Fewer noise impacted properties</li> <li>• More open land</li> <li>• Safety issues with Norfolk Southern RR</li> <li>• Safer for school buses</li> </ul>	<ul style="list-style-type: none"> <li>• Bisects and affects farm operations</li> </ul>
<b>Alternate 5</b>	<ul style="list-style-type: none"> <li>• Fewer family relocations</li> <li>• Avoids new development</li> <li>• Less impact to the community of Rippon</li> <li>• Fewer cultural resource impacts</li> <li>• Avoids Ripon Lodge Farm</li> <li>• Fewer noise impacted properties</li> <li>• More open land</li> <li>• Safety issues with Norfolk Southern RR</li> <li>• Lowest right of way and utility cost</li> <li>• Safer for school buses</li> </ul>	<ul style="list-style-type: none"> <li>• Bisects and affects farm operations</li> <li>• Impacts ponds and spring</li> </ul>
<b>Alternate 6</b>	<ul style="list-style-type: none"> <li>• Least farmland impact</li> <li>• Least wetland impact</li> <li>• Lowest total cost</li> </ul>	<ul style="list-style-type: none"> <li>• Safety issues with Norfolk Southern RR</li> <li>• More development west of Rippon</li> <li>• Busy intersection with Withers &amp; Larue Road (Jefferson County 19)</li> </ul>
<b>No-Build Alternative</b>	<ul style="list-style-type: none"> <li>• Highway is sufficient to carry traffic load</li> <li>• A larger road will promote development and destroy history</li> </ul>	<ul style="list-style-type: none"> <li>• Travel safety</li> <li>• Improvements are needed along this two-lane section of US 340</li> <li>• Current traffic volume exceeds capacity</li> </ul>

\* Alternate 8 was developed in January 2000 after the public meetings were held. This alternate was developed to avoid the historic resources.

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## **APPENDICES**

- A. FARMLAND CONVERSION IMPACT RATING (FORM AD 1006)**
- B. AGENCY COMMENTS AND COORDINATION**

**APPENDIX A**

**FARMLAND CONVERSION IMPACT RATING (FORM AD 1006)**

EXHIBIT A-1      U.S. Department of Agriculture, April 29, 1997

EXHIBIT A-2      U.S. Department of Agriculture, April 29, 1997

EXHIBIT A-3      U.S. Department of Agriculture, June 26, 2000

# FARMLAND CONVERSION IMPACT RATING

ART I (To be completed by Federal Agency)		Date Of Land Evaluation Request <b>3/4/97</b>			
Name Of Project <b>US 340 Improvement Study</b>		Federal Agency Involved <b>Federal Highway Administration</b>			
Proposed Land Use <b>roadway</b>		County And State <b>Jefferson County, West Virginia</b>			
ART II (To be completed by SCS)		Date Request Received By SCS <b>4/29/97</b>			
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply - do not complete additional parts of this form)		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Acres Irrigated <b>NA</b>	Average Farm Size <b>220</b>
Major Crop(s) <b>Corn, Soybeans, Pasture, hay</b>	Farmable Land In Govt. Jurisdiction Acres: <b>92790</b> % <b>68.9</b>	Amount Of Farmland As Defined In FPPA Acres: <b>92790</b> % <b>68.9</b>		Date Land Evaluation Returned By SCS <b>5/15/97 R Estep</b>	
Name Of Land Evaluation System Used <b>LESA</b>	Name Of Local Site Assessment System				
ART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A 1	Site B 3	Site C 4	Site D 5
A. Total Acres To Be Converted Directly		109	102	102	111
B. Total Acres To Be Converted Indirectly		0	0	0	0
C. Total Acres In Site		109	102	102	111
ART IV (To be completed by SCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		55.2	52.7	50.5	54.1
B. Total Acres Statewide And Local Important Farmland		17.2	26.5	31.8	37.2
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		.001	.001	.001	.001
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		45.4	45.4	45.4	45.4
PART V (To be completed by SCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		79	79.3	78.8	73.9
ART VI (To be completed by Federal Agency)					
Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))	Maximum Points				
1. Area In Nonurban Use		15	15	15	15
2. Perimeter In Nonurban Use		10	10	10	10
3. Percent Of Site Being Farmed		2	2	2	2
4. Protection Provided By State And Local Government		20	20	20	20
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average		5	5	5	5
8. Creation Of Nonfarmable Farmland		0	0	0	0
9. Availability Of Farm Support Services		5	5	5	5
10. On-Farm Investments		10	10	10	10
11. Effects Of Conversion On Farm Support Services		0	0	0	0
12. Compatibility With Existing Agricultural Use		5	5	5	5
TOTAL SITE ASSESSMENT POINTS	160	72	72	72	72
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	79.0	79.3	78.8	73.9
Total Site Assessment (From Part VI above or a local site assessment)	160	72.0	72.0	72.0	72.0
TOTAL POINTS (Total of above 2 lines)	260	151.0	151.3	150.8	145.9
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Reason For Selection:					

# FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request <b>3/4/97</b>			
Name Of Project <b>US 340 Improvement Study</b>		Federal Agency Involved <b>Federal Highway Administration</b>			
Proposed Land Use <b>roadway</b>		County And State <b>Jefferson County, West Virginia</b>			
PART II (To be completed by SCS)		Date Request Received By SCS <b>4/29/97</b>			
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply - do not complete additional parts of this form)		Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Acres Irrigated <b>NA</b>	Average Farm Size <b>220</b>
Major Crop(s) <b>Corn Soybeans Pasture Hay</b>	Farmable Land In Govt. Jurisdiction Acres: <b>92790</b> % <b>68.9</b>	Amount Of Farmland As Defined in FPPA Acres: <b>92790</b> % <b>68.9</b>		Date Land Evaluation Returned By SCS <b>5/15/97 R Estep</b>	
Name Of Land Evaluation System Used <b>LESA</b>	Name Of Local Site Assessment System				
PART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A <b>6</b>	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		<b>109</b>			
B. Total Acres To Be Converted Indirectly		<b>0</b>			
C. Total Acres In Site		<b>109</b>			
PART IV (To be completed by SCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		<b>40.7</b>			
B. Total Acres Statewide And Local Important Farmland		<b>10.8</b>			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		<b>.001</b>			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		<b>32.9</b>			
PART V (To be completed by SCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		<b>82.6</b>			
PART VI (To be completed by Federal Agency) Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))		Maximum Points			
1. Area In Nonurban Use		<b>15</b>			
2. Perimeter In Nonurban Use		<b>10</b>			
3. Percent Of Site Being Farmed		<b>2</b>			
4. Protection Provided By State And Local Government		<b>0</b>			
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average		<b>5</b>			
8. Creation Of Nonfarmable Farmland		<b>0</b>			
9. Availability Of Farm Support Services		<b>5</b>			
10. On-Farm Investments		<b>10</b>			
11. Effects Of Conversion On Farm Support Services		<b>0</b>			
12. Compatibility With Existing Agricultural Use		<b>5</b>			
TOTAL SITE ASSESSMENT POINTS		160	<b>52</b>		
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100	<b>82.6</b>		
Total Site Assessment (From Part VI above or a local site assessment)		160	<b>52.0</b>		
TOTAL POINTS (Total of above 2 lines)		260	<b>134.6</b>		
Site Selected:		Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input type="checkbox"/>		
Reason For Selection:					

# FARMLAND CONVERSION IMPACT RATING

I (To be completed by Federal Agency)		Date Of Land Evaluation Request		6/21/00	
Name of Project		Federal Agency Involved			
US 340 IMPROVEMENT STUDY		FEDERAL HIGHWAY ADMINISTRATION			
Proposed Land Use		County And State			
ROADWAY		JEFFERSON COUNTY, WEST VIRGINIA			
PART II (To be completed by SCS)		Date Request Received By SCS			
		6/26/00			
Does the site contain prime, unique, statewide or local important farmland? If no, the FPPA does not apply - do not complete additional parts of this form.		YES	NO	ACRES IRRIGATED	AVERAGE FARM SIZE
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	NA	220
Crop(s)	Farmable Land in Gov't Jurisdiction	Amount Of Farmland As Defined in FPPA			
corn Soybeans Pasture Hay	Acres: 92790 % 68.9	Acres: 92790 % 68.9			
Land Evaluation System Used	Name Of Local Site Assessment	Date Land Evaluation Returned by SCS			
LESA		6/28/00 Ron Estep			

PART III (To be completed by Federal Agency)	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	120 + 28 = 148 RE			
Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	120 + 28 = 148 RE			

PART IV (To be completed by SCS) Land Evaluation Information	
A. Total Acres Prime And Unique Farmland	82
Total Acres Statewide and Local Important Farmland	38
C. Percentage of Farmland In County Or Local Govt. Unit To Be Converted	.001
D. Percentage of Farmland In Govt. Jurisdiction With Same Or Higher Value	32.9

PART V (To be completed by SCS) Land Evaluation Criterion	
Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	82.2

PART VI (To be completed by Federal Agency)	Maximum Points	
Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))		
1. Area in Nonurban use	15	
2. Perimeter in Nonurban Use	10	
3. Percent Of Site Being Farmed	4	
4. Protection Provided By State And Local Government	20	
5. Distance From Urban Builtup Area		
6. Distance To Urban Support Services		
7. Size Of Present Farm Unit Compared To Average	5	
8. Creation Of Nonfarmable Farmland	0	
9. Availability Of Farm Support Services	5	
10. On-Farm Investments	10	
11. Effects Of Conversion On Farm Support Services	0	
12. Compatibility With Existing Agricultural Use	5	
<b>TOTAL SITE ASSESSMENT POINTS</b>	160	74

PART VII (To be completed by Federal Agency)		
Relative Value Of Farmland (From Part VI)	100	82.2
Total Site Assessment (From Part VI above or a local site assessment)	160	74.0
<b>TOTAL POINTS (Total of above 2 lines)</b>	260	156.2

Land Selected:	Date of Selection:	Was A Local Site Assessment Used?
		Yes <input type="checkbox"/> No <input type="checkbox"/>
Reason For Selection:		

## APPENDIX B

### AGENCY COMMENTS AND COORDINATION

- EXHIBIT B-1      U.S. Army Corps of Engineers- Baltimore District, April 30, 1996
- EXHIBIT B-2      W.V. Bureau of Environment - Division of Environmental Protection  
- Office of Air Quality, July 22, 1996
- EXHIBIT B-3      U.S. Army Corps of Engineers- Baltimore District, August 5, 1996
- EXHIBIT B-4      U.S. Army Corps of Engineers - Pittsburgh District, August 9, 1996
- EXHIBIT B-5      W.V. Bureau of Commerce - Division of Natural Resources,  
August 19, 1996
- EXHIBIT B-6      U.S. Department of Interior - Fish and Wildlife Service,  
August 29, 1996
- EXHIBIT B-7      U.S. Environmental Protection Agency, Region III, August 29, 1996
- EXHIBIT B-8      W.V. Bureau of Environment - Division of Environmental Protection  
- Office of Air Quality, October 22, 1996
- EXHIBIT B-9      U.S. Army Corps of Engineers - Pittsburgh District,  
November 7, 1996
- EXHIBIT B-10     U.S. Army Corps of Engineers- Baltimore District,  
November 20, 1996
- EXHIBIT B-11     W.V. Division of Culture and History, November 21, 1996
- EXHIBIT B-12     U.S. Environmental Protection Agency, Region III, January 23, 1997

## AGENCY COMMENTS AND COORDINATION (Continued)

- EXHIBIT B-13      W.V. Bureau of Commerce - Division of Natural Resources,  
April 10, 1997
- EXHIBIT B-14      W.V. Bureau of Environment - Division of Environmental Protection  
- Office of Air Quality, April 11, 1997
- EXHIBIT B-15      U.S. Environmental Protection Agency, Region III, May 14, 1997
- EXHIBIT B-16      U.S. Environmental Protection Agency, Region III, June 19, 1997
- EXHIBIT B-17      U.S. Army Corps of Engineers - Pittsburgh District, July 8, 1997
- EXHIBIT B-18      W.V. Division of Culture and History, February 17, 1999
- EXHIBIT B-19      W.V. Division of Culture and History, November 23, 1999
- EXHIBIT B-20      W.V. Division of Culture and History, December 7, 1999
- EXHIBIT B-21      W.V. Division of Culture and History, January 7, 2000
- EXHIBIT B-22      W.V. Division of Culture and History, March 10, 2000
- EXHIBIT B-23      W.V. Division of Culture and History, June 2, 2000
- EXHIBIT B-24      U.S. Department of Interior – Fish and Wildlife Service,  
October 3, 2000
- EXHIBIT B-25      W.V. Division of Culture and History, November 9, 2000
- EXHIBIT B-26      V.A. Department of Historic Resources, August 31, 2001



DEPARTMENT OF THE ARMY  
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
P.O. BOX 1715  
BALTIMORE, MD 21203-1715

REPLY TO  
ATTENTION OF

April 30, 1996

Planning Division

Mr. Ben Hark  
West Virginia Department of Transportation  
Department of Highways  
Environmental Services Section  
1900 Kanawha Boulevard East  
Building Five, Room 109  
Charleston, West Virginia 25305-0430

RECEIVED  
MAY - 5 1997

ROADWAY DESIGN DIVISION  
W. VA. DIV. OF HIGHWAYS

Dear Mr. Hark:

I am providing a response to your request for Baltimore District's comments on the U.S. Route 340, Virginia State Line to Charles Town, Jefferson County, Alternatives Report. The comments provided below address the Corps of Engineers' areas of concern, including direct and indirect impacts on existing and/or proposed Corps projects, flood control hazard potential, and regulatory requirements under Section 404 of the Clean Water Act.

Based upon our review of the information provided, there are no existing or proposed Corps projects that would be affected by the Route 340 Improvement project.

The proposed road improvements will have a significant impact on the floodplain in the vicinities of Flowing Springs Run at the intersection of U.S. Route 340 and Route 38, and Bullskin Run. New construction or major improvements within the floodplain requires full compliance with Executive Order (E.O.) No. 11988, May 24, 1977, Floodplain Management; Federal Emergency Management Agency regulations (FEMA); and other Federal, state, and local floodplain regulations. The objectives of the E.O. No. 11988 and other floodplain regulations are to avoid the adverse effects of occupying and modifying the floodplain and to avoid direct and indirect support of development in the floodplain. The order requires that activities not be located in the floodplain unless this would be the only practicable alternative. Activities that must be located in the floodplain must incorporate measures to (1) reduce the hazard and risk associated with floods; (2) minimize the adverse effects on human health, safety, and welfare; and (3) restore and preserve the natural and beneficial values of the floodplain.

The subject report does not generally satisfy Federal floodplain requirements. The Flowing Springs Run and Bullskin Run areas have not been addressed in the report as to the potential impacts that this project may have to the floodplain.

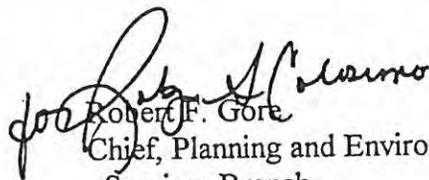
Certain activities in the waters of the U.S., and jurisdictional wetlands, require Department of the Army permits from the Corps. Corps regulations [33 CFR 320 through 330 and 33 CFR 230 and 325 (Appendix B)] require full compliance with the National Environmental Policy Act (NEPA) of 1969 during the review and evaluation of permit applications. To the maximum extent

possible, the Corps will accept the information presented in NEPA documents for evaluating permit applications. This project is located within the Pittsburgh District. My staff has contacted this office and has determined that the Pittsburgh District will be providing comments with respect to the Corps' regulatory requirements. If you have any questions or need additional information on regulatory requirements, the point of contact is Mr. Ray Berringer, Chief, Regulatory Branch, Pittsburgh District, at ~~(412) 644-4204~~,

*(412) 461-7995*

If you have any questions on this matter, please call me or my action officer, Ms. Andrea E. Walker, at (410) 962-3027.

Sincerely,



Robert F. Gore  
Chief, Planning and Environmental  
Services Branch

CF:  
CEORP-OR-R, Ray Berringer

RECEIVED  
JUL 24 1996



ROADWAY DESIGN DIVISION  
WV DIVISION OF HIGHWAYS

**DIVISION OF ENVIRONMENTAL PROTECTION**

GASTON CAPERTON  
GOVERNOR

1558 Washington Street East  
Charleston, WV 25311-2599

LAIDLEY ELI MCCOY, PH.D.  
DIRECTOR

July 22, 1996

Mr. Randolph T. Epperly, Jr.  
WV DOT/DOH  
Bldg. 5, Room A-430

*via InterDept. Mail*

Re: US 340 Improvements- Agency Scoping  
State Project U219-340-0.00 02  
Federal Project NH-0340(030)E  
Jefferson County

Dear Mr. Epperly:

This letter responds to your agency's letter (July 10, 1996) to Chief Farley requesting comments on the above referenced project. The Office of Air Quality appreciates the opportunity to participate in the scoping process. I have indicated "Air Quality Impacts" as a "secondary emphasis" on the "issues" sheet that accompanied the scoping package. This applies to the expected impacts within the state of West Virginia. The entire project is confined to an area which is presently attainment/unclassifiable for all criteria air pollutants. Therefore, no formal conformity determination is required under the federal transportation conformity rule (40CFR93, Subpart A). Analyses that meet the NEPA requirements should be sufficient from a local perspective. However, there may be regional air quality impacts on the nearby Baltimore (MD) - Washington (DC) area. These potential impacts on ozone nonattainment areas may justify a more thorough air-quality analysis than would routinely be performed. If you have any questions or need more information, please feel free to contact me at 558-1217.

Sincerely,

A handwritten signature in black ink, appearing to read "William Frederick Durham".

William Frederick Durham  
Transportation Conformity Contact

Office of Air Quality, Air Programs and Planning Section  
Phone: (304) 558-1213 Fax: (304) 558-1222



**US 340  
IMPROVEMENT  
STUDY**

**SCOPING PACKAGE**

**DEIS ISSUES**

PRIMARY EMPHASIS	SECONDARY EMPHASIS	POSSIBLE ISSUES
		Purpose and Need For Action
		Affected Environment
		Environmental Consequences
		<ul style="list-style-type: none"> <li>• Land Use Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Farmland Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Social Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Relocation Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Utilities and Services</li> </ul>
		<ul style="list-style-type: none"> <li>• Economic Impacts</li> </ul>
	XX	<ul style="list-style-type: none"> <li>• Air Quality Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Noise Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Water Quality Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Permits</li> </ul>
		<ul style="list-style-type: none"> <li>• Wetland Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Water Body Modification Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Wildlife Impacts (Aquatic/Terrestrial)</li> </ul>
		<ul style="list-style-type: none"> <li>• Vegetation Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Floodplain Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Wild and Scenic Rivers</li> </ul>
		<ul style="list-style-type: none"> <li>• Threatened and Endangered Species</li> </ul>
		<ul style="list-style-type: none"> <li>• Historic and Archaeological Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Hazardous Waste Sites</li> </ul>
		<ul style="list-style-type: none"> <li>• Visual Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Energy</li> </ul>
		<ul style="list-style-type: none"> <li>• Secondary and Cumulative Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Construction Impacts</li> </ul>
		Comments and Coordination



DEPARTMENT OF THE ARMY  
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
P.O. BOX 1715  
BALTIMORE, MD 21203-1715

August 5, 1996

Planning Division

Mr. Randolph T. Epperly, Jr.  
Director, Roadway Design  
Division  
Division of Highways  
Building 5, Room A-430  
1900 Kanawha Boulevard, East  
Charleston, West Virginia 25305-0430

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AUG 11 1996

ROADWAY DESIGN DIVISION  
WV DIVISION OF HIGHWAYS

Dear Mr. Epperly:

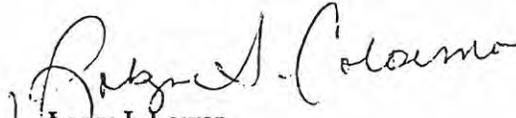
Reference your letter dated, July 10, 1996, requesting Baltimore District's comments on the proposed improvements to US 340-Virginia Line to Charles Town, Jefferson County, West Virginia. The comments provided below address the Corps of Engineers (Corps) areas of concern, including direct and indirect impacts on existing and/or proposed Corps projects and flood control hazard potential.

There are no existing or proposed Corps projects that would be affected by the work. Additionally, in accordance with the referenced document, portions of the proposed improvements to US 340 will be located within the flood plain. New construction or major replacement within the flood plain requires full compliance with Executive Order No. 11988, May 24, 1977, Flood Plain Management; Federal Emergency Management Agency regulations; and other Federal, state, and local flood plain regulations. The objectives of the E.O. No. 11988 and other flood plain regulations are to avoid the adverse effects of occupying and modifying the flood plain and to avoid direct and indirect support of development in the flood plain. The order requires that activities not be located in the flood plain unless it is the only practicable alternative. Activities which must be located in the flood plain must incorporate measures to: (1) reduce the hazard and risk associated with floods, (2) minimize the adverse effects on human health, safety, and welfare; and (3) restore and preserve the natural and beneficial values of the flood plain.

?  
The proposed bridge replacement construction may cause an increase in water surface elevation (surcharge). Considerations should be made for temporary encroachment of the flood plain during construction. Federal Emergency Management Agency (FEMA) regulations require that the surcharge not increase more than 1.0 foot. It is also suggested that the state and local resources agencies be contacted as some states and local governments have more stringent surcharge requirements than FEMA.

If you have any questions on this matter, please call me or my action officer, Mr. Stephen S. Israel, at (410) 962-0685.

Sincerely,

  
Larry J. Lower  
Chief, Environmental Resources

Enclosures



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
PITTSBURGH DISTRICT, CORPS OF ENGINEERS  
WILLIAM S. MOORHEAD FEDERAL BUILDING  
1000 LIBERTY AVENUE  
PITTSBURGH, PA 15222-4186  
August 9, 1996

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AUG 12 1996

Regulatory Branch

ROADWAY DESIGN DIVISION  
WV DIVISION OF HIGHWAYS

Mr. Randolph T. Epperly, Jr.  
Director, Roadway Design Division  
West Virginia Department of Transportation  
Division of Highways  
1900 Kanawha Boulevard East  
Building Five, Room 109  
Charleston, West Virginia 25305-0430

Dear Mr. Epperly:

I refer to the letter of July 10, 1996 requesting comments on the Agency Scoping Package for the improvement of US Route 340 from the Virginia line to Charlestown, Jefferson County, West Virginia.

We have reviewed the Agency Scoping Package for the U.S. 340 Improvement Study and have filled out the check-off sheet of DEIS issues. We have no further concerns or comments at this time.

Sincerely,

E. Raymond Beringer  
Chief, Regulatory Branch

Enclosure



**US 340  
IMPROVEMENT  
STUDY**

**SCOPING PACKAGE**

**DEIS ISSUES**

PRIMARY EMPHASIS	SECONDARY EMPHASIS	POSSIBLE ISSUES
		Purpose and Need For Action
		Affected Environment
		Environmental Consequences
	✓	• Land Use Impacts
	✓	• Farmland Impacts
✓		• Social Impacts
✓		• Relocation Impacts
	✓	• Utilities and Services
✓		• Economic Impacts
	✓	• Air Quality Impacts
	✓	• Noise Impacts
	✓	• Water Quality Impacts
✓		• Permits
✓		• Wetland Impacts
✓		• Water Body Modification Impacts
	✓	• Wildlife Impacts (Aquatic/Terrestrial)
	✓	• Vegetation Impacts
✓		• Floodplain Impacts
✓		• Wild and Scenic Rivers
✓		• Threatened and Endangered Species
	✓	• Historic and Archaeological Impacts
✓		• Hazardous Waste Sites
	✓	• Visual Impacts
	✓	• Energy
	✓	• Secondary and Cumulative Impacts
	✓	• Construction Impacts
		Comments and Coordination



CHARLES B. FELTON, JR.  
Director

**PARKS & RECREATION**  
State Capitol Complex  
Building 3, Room 714  
Charleston, West Virginia 25305-0662

TELEPHONE: (304) 558-2764 • FAX: (304) 558-0077

*Equal Opportunity Employer*



GASTON CAPERTON  
Governor

Administration (304) 558-3315 (304) 558-2768	Law Enforcement (304) 558-2783 FAX (304) 558-1170	Parks and Recreation (304) 558-2764 FAX (304) 558-0077	Wildlife Resources (304) 558-2771 FAX (304) 558-3147	Conservation Education and Litter Control (304) 558-3370 FAX (304) 558-2768	Public Information (304) 558-3380 FAX (304) 558-2768	Real Estate Management (304) 558-3225 FAX (304) 558-3680	Wonderful West Virginia Magazine (304) 558-9152 FAX (304) 558-2768
--	---	--	--	---	--	--	--

August 19, 1996

Mr. Randolph T. Epperly, Jr.  
Director  
Roadway Design Division  
Division of Highways  
Bldg. 5, Room A-430  
1900 Kanawha Boulevard, East  
Charleston, WV 25305 -0430

RECEIVED  
AUG 21 1996

ROADWAY DESIGN DIVISION  
WV DIVISION OF HIGHWAYS

Re: U. S. Route 340  
Virginia Line through Charles Town

Dear Mr. Epperly:

The U. S. 340 agency scoping package has been reviewed. The proposed project does not directly affect any area operated or maintained by the Division of Natural Resources, Parks and Recreation. However, DNR, Parks and Recreation is always supportive of any efforts to improve West Virginia's highway system since these improvements will make our state parks more accessible to the public.

Sincerely yours,

  
Stephen DeBarr, P.E., Assistant Chief  
Planning, Engineering, and Maintenance

SD/gk

cc: Cordie Hudkins, Chief  
Ken Caplinger, Deputy Chief

EXHIBIT B-53p.1



Jefferson 340



United States Department of the Interior



FISH AND WILDLIFE SERVICE

West Virginia Field Office  
Post Office Box 1278  
Elkins, West Virginia 26241

DV (Hunt HD) Handle  
9/3/96  
Attachment

August 29,

RECEIVED  
SEP 4 1996

RECEIVED  
SEP 03 1996

W. VA. DEPT. OF HIGHWAYS  
CHIEF ENGINEER DEVELOPMENT

Mr. Fred VanKirk, Secretary  
Commissioner of Highways  
West Virginia Department of Transportation  
1900 Kanawha Boulevard, East  
Building Five, Room 109  
Charleston, West Virginia 25305-0430

ROADWAY DESIGN DIVISION  
WV DIVISION OF HIGHWAYS  
SEP 03 1996

DIVISION OF HIGHWAYS  
CORRESPONDENCE &  
CENTRAL FILES

Dear Mr. VanKirk:

This responds to your request for comments concerning the US 340 Agency Scoping Package. The West Virginia Department of Transportation, Division of Highways, is preparing an Environmental Impact Statement for approximately 6.8 km (4.25 miles) of improvements to US 340 in Jefferson County, West Virginia.

Except for occasional transient species, no federally listed or proposed threatened or endangered species under our jurisdiction are known to exist in the project impact area. Two nest sites for the migrant loggerhead shrike (Lanius ludovicianus), a species of concern, are located in the general vicinity of the study area. One site is located approximately 1.7 miles west of Rippon. The preferred habitat of the shrike is open land adjacent to brushy areas or thickets. Shrikes are predatory and hunt from perches and impale their prey on sharp objects such as thorns and barbed-wire fences. Habitat loss has been identified as a major cause of the widespread decline in this species. A survey of the study area should be conducted during late spring and summer to determine if shrikes utilize the area.

The project has the potential to traverse numerous wetlands adjacent to Long Marsh Run and Bullskin Run. Wetlands are important natural resources providing benefits such as; fish and wildlife habitat, water quality improvement, flood damage reduction, erosion control, and hunting and fishing opportunities. Wetlands play an important role in maintaining the quality of natural environment by purifying natural waters by removing nutrients, chemical and organic pollutants, and sediment, and by producing food for aquatic life. Wetlands work in concert with other natural resources as a part of a complex, integrated system. They provide breeding, feeding, resting and

escape habitat for wildlife and for waterfowl and other migratory birds. They play a significant role in maintaining wildlife and plant diversity and are required by many types of wildlife and plants for survival.

Wetlands are under increasing pressure for development as our population grows. Between the mid-1950's and mid-1970's, the mid-Atlantic region lost about 133,000 acres of vegetated wetlands. Because wetlands are important, the federal government regulates various wetland uses, especially deposition of fill.

Effort should be made to avoid wetland impacts associated with this project. Avoidance of long- and short-term adverse impacts associated with the destruction of wetlands and avoidance of direct or indirect support of new construction in wetlands is encouraged whenever there is a practicable alternative. No discharge of dredged or fill material should be proposed if there is a practicable alternative which would have less adverse impact on the aquatic ecosystem.

The U.S. Fish and Wildlife Service has prepared national wetland inventory (NWI) maps on 7-1/2 minute quadrangles for your study corridor. These maps may be acquired from:

National Wetlands Inventory  
Attn: National Map Information  
U.S. Fish and Wildlife Service  
9720 Executive Center Drive  
Monroe Building, Suite 101  
St. Petersburg, Florida 33702  
1-800-USA-MAPS

We understand that an environmental study is being prepared for this project. Primary issues that should be addressed include: wetland, fish and wildlife and floodplain impacts, and purpose and need for the action. We appreciate the opportunity to comment at this stage in the planning process and may, depending on anticipated project impacts, provide additional comments upon review of the study.

Sincerely,



Christopher M. Clower  
Supervisor



**US 340  
IMPROVEMENT  
STUDY**

**SCOPING PACKAGE**

**DEIS ISSUES**

PRIMARY EMPHASIS	SECONDARY EMPHASIS	POSSIBLE ISSUES
✓		Purpose and Need For Action
✓		Affected Environment
✓		Environmental Consequences
✓	✓	<ul style="list-style-type: none"> <li>• Land Use Impacts</li> </ul>
	✓	<ul style="list-style-type: none"> <li>• Farmland Impacts</li> </ul>
	✓	<ul style="list-style-type: none"> <li>• Social Impacts</li> </ul>
	✓	<ul style="list-style-type: none"> <li>• Relocation Impacts</li> </ul>
	✓	<ul style="list-style-type: none"> <li>• Utilities and Services</li> </ul>
	✓	<ul style="list-style-type: none"> <li>• Economic Impacts</li> </ul>
	✓	<ul style="list-style-type: none"> <li>• Air Quality Impacts</li> </ul>
	✓	<ul style="list-style-type: none"> <li>• Noise Impacts</li> </ul>
✓		<ul style="list-style-type: none"> <li>• Water Quality Impacts</li> </ul>
✓		<ul style="list-style-type: none"> <li>• Permits</li> </ul>
✓		<ul style="list-style-type: none"> <li>• Wetland Impacts</li> </ul>
✓		<ul style="list-style-type: none"> <li>• Water Body Modification Impacts</li> </ul>
✓		<ul style="list-style-type: none"> <li>• Wildlife Impacts (Aquatic/Terrestrial)</li> </ul>
✓		<ul style="list-style-type: none"> <li>• Vegetation Impacts</li> </ul>
✓		<ul style="list-style-type: none"> <li>• Floodplain Impacts</li> </ul>
		<ul style="list-style-type: none"> <li>• Wild and Scenic Rivers</li> </ul>
✓		<ul style="list-style-type: none"> <li>• Threatened and Endangered Species</li> </ul>
	✓	<ul style="list-style-type: none"> <li>• Historic and Archaeological Impacts</li> </ul>
✓		<ul style="list-style-type: none"> <li>• Hazardous Waste Sites</li> </ul>
	✓	<ul style="list-style-type: none"> <li>• Visual Impacts</li> </ul>
	✓	<ul style="list-style-type: none"> <li>• Energy</li> </ul>
✓		<ul style="list-style-type: none"> <li>• Secondary and Cumulative Impacts</li> </ul>
✓		<ul style="list-style-type: none"> <li>• Construction Impacts</li> </ul>
✓		Comments and Coordination



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
841 Chestnut Building  
Philadelphia, Pennsylvania 19107-4431

RECEIVED  
AUG 29 1996  
SEP 3 1996

Mr. Randolph T. Epperly, Jr.  
Director, Roadway Design Division  
Division of Highways  
Building 5, Room A-430  
1900 Kanawha Blvd., East  
Charleston, West Virginia 25305-0430

ROADWAY DESIGN DIVISION  
WV DIVISION OF HIGHWAYS

Re: Scoping Package for State Project U219-340-0.00 02; Federal Project NH-0340(030)E; US 340- Virginia Line to Charles Town, Jefferson County, West Virginia.

Dear Mr. Epperly:

In accordance with the National Environmental Policy Act and Section 309 of the Clean Air Act, EPA is responding to your invitation to provide written comments on the referenced project. We concur with the use of the Integrated NEPA/404 process for this project and look forward to working with you on this effort.

As you know, the purpose of a NEPA document is to provide a full and fair discussion of significant environmental impacts and to inform the public of reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment. The document is a decision making tool that should be used to determine a preferred alternative and whether to proceed with the proposed project. The DEIS should be a concise, unbiased and analytic evaluation of the needs, alternatives and impacts of the proposed project. At a minimum, the NEPA document should include:

Purpose and Need for Project

Describe the underlying need for the project in detail, including economic, technical, and other reasons for proposing this project. To demonstrate the need for additional highway capacity, the DEIS should show, through maps, figures, and tables, the existing traffic conditions on the areas' roadways. The projected future traffic conditions should also be provided at a comparable level of detail. These figures should include the Average Daily Traffic (ADT), Level of Service (LOS) and accident history.

Alternatives

In the discussion of alternatives, explore and objectively analyze all reasonable alternatives that meet the need for the

project. Alternate sites and various methods of satisfying the purpose and need should be addressed, including alternatives to the selected termini and for placement of the expansion relative to the existing roadway. Include an explanation as to why any reasonable alternative was eliminated from detailed study. Present the alternatives in a form that allows easy comparison, such as a matrix of all alternatives that were considered.

NEPA also requires that the document address the "no action" alternative. This should include the environmental impacts that could be anticipated if the project was not built. Such information will serve as a baseline for comparison with the other alternatives.

### Affected Environment

Thoroughly describe all environments, as they are currently maintained, that will be impacted by the proposed activity, including the site area and other areas that might be affected directly or indirectly. Special attention should be paid to natural habitats such as forests and wetlands, parklands, recreational lands, endangered species, air and water quality, floodplains, farmlands, historic and archaeological sites, and waterways. Discuss the socio-economic and cultural status of the area. Identify any hazardous wastes that would require disposal prior to alteration in land use. The discussions in this section should allow the reader to visualize the quality and type of resource that will be impacted. The greatest level of discussion should be provided to resources that will be most impacted.

### Environmental Consequences

Provide a comparative description of the environmental impacts associated with each alternative, including the proposed action, as well as any direct, indirect and cumulative adverse environmental effects that cannot be avoided should the proposal be implemented. This discussion should be analytic rather than encyclopedic.

The description should include commitment of resources involved in the proposed project, possible conflicts between the proposed action and the objectives of Federal, regional, State and local land use plans, and policies for the proposed project area. In addition to the energy requirements of various alternatives, natural resource requirements, urban quality, historic and cultural resources and the means to reduce, conserve and mitigate for adverse impacts to these resources.

All the issues listed within the Scoping Package Checklist should be considered and discussed as appropriate to the project. However, primary emphasis should be placed on the evaluation of resources that have the highest potential to be impacted or where the degree of impact varies between different alternatives. The following is a list of issues that are of particular interest to

the EPA.

#### \*BIODIVERSITY

Evaluate the expected and possible impacts of the proposed activity. Include discussion on alteration of natural habitat and changes in human use of the area, addressing all of the effected environments discussed above. EPA's concerns reflect the results of Region III's Comparative Risk Project which was conducted to determine which of the Region's environmental problems pose the greatest risk to human health, ecology and societal welfare. The highest ranked risk areas are the physical modification of terrestrial and aquatic habitats and non-point source pollution. EPA is concerned about the potential direct and indirect impacts to forested habitats and floodplain wetlands. Long-term analysis of the impacts to these sensitive habitats should be thoroughly addressed in the document.

As stated above, Region III's Comparative Risk Project identified physical modification of terrestrial habitat as posing one of the highest ecological risks in the region. Consequently, EPA has serious concerns about the fragmentation of habitat resulting from destruction of forested tracts of land. EPA believes that evaluation of ecological stress based solely on acreage may underestimate the severity of the impacts. An estimate of acreage lost does not account for ecosystem alterations such as the bisecting of wildlife corridors and migration routes, disrupting of food web interactions or other ecosystem functions that rely on contiguous habitats. If impacts to ecosystems are potentially significant, EPA recommends the completion of a U.S. Fish and Wildlife Habitat Evaluation Procedure to determine the extent of impacts and the appropriate mitigation. In addition, the location of acreage, and type of habitat to be eliminated should be included on a map of sufficient detail.

#### \*THREATENED AND ENDANGERED SPECIES

The project area should be screened for potential State or Federally listed threatened or endangered species. This screening should not only evaluate whether these species are currently present, but should also consider whether any habitats within the project area are suitable to support any threatened or endangered species known to exist in the region.

#### \*WATER QUALITY

The DEIS should discuss potential water quality impacts to surface and groundwater resources in the study area. Any changes in surface or subsurface hydrology resulting from highway construction should be discussed.

Special attention should be paid to the impacts from the two stream crossings that are involved in this project. The DEIS should discuss how the alternatives will affect the chemical

physical and biological characteristics of the streams and should explore options that avoid or minimize potential disruptions to these features.

Highways introduce contaminants including oils, heavy metals, and asbestos into adjacent waters. The DEIS should discuss proposed highway drainage and storm water management options and how contamination of adjacent waters will be prevented and minimized. The potential for accidental spills may increase along the highway corridor. The probability of such incidents should be discussed and potential impacts evaluated. This evaluation should include potential impacts to downstream resources. Alterations to floodplains and erosion potential should be discussed as well.

#### \*MITIGATION

Develop and discuss the mitigation measures that will avoid, reduce, minimize, or compensate for the adverse impacts of the proposed action. Avoidance is the preferred method. This section should include a plan of actions, responsible parties and timing for the mitigation efforts that are intended. This discussion should be specific, rather than generic in nature and should include discussions of actual measures that can and will be implemented throughout the project, rather than merely stating that "best management practices will be employed." The EPA encourages practices such as allowing existing vegetation to remain on portions of the project area, limiting in-stream work, and constructing non-intrusive stream crossings. Every effort should be made to promote coordination with agencies that have special expertise in these areas in order to develop sound mitigation plans. These agencies could include the Fish and Wildlife Service, Department of Natural Resources and the State Historic Preservation Office.

#### \*PERMITS

A discussion of any permits required before commencement of the project should be included in the document. These may include a Section 404/Section 10 permit from the Corps of Engineers, state water quality certification, and local construction and zoning permits. When possible, initiate early coordination efforts with permitting agencies so that permit requirements, including impact avoidance and mitigation methods, can be addressed directly within the document.

#### \*SECONDARY AND CUMULATIVE IMPACTS

Address secondary and cumulative impacts of the project, such as related projects in the area, needed support facilities, expanded utilities, increased traffic or usage, and possible effects on the local economy. Indirect/Secondary Impacts are defined as impacts that are likely to occur later in time or in a different location as a result of a proposed action. Identifying secondary

impacts requires the establishment of indirect cause-effect relationships between the proposed action and the secondary impacts. All factors influencing where development will occur should be included in the analysis. Examples: impacts from induced development, changes in property values, changes in zoning, etc.

Cumulative effects are defined as resulting "from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 CFR §1508.7 Assessing cumulative effects is a broad regional approach to environmental impact assessment. The objective of assessing cumulative effects is to measure the effects of multiple sources upon multiple environment components over time, taking into consideration the interaction among inputs to the environment.

#### \*WETLANDS

The document must analyze the size and functional values of all wetlands impacted either directly or indirectly by this project. This evaluation should be conducted by a qualified individual using the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1987). The DEIS should include a map which identifies all Waters of the United States, including wetlands, for the entire study corridor.

Impacts to wetlands should be avoided or minimized to the maximum extent practicable. Adherence to the Section 404 (b) (1) Guidelines (40 CFR 230.10 (a) - (d)) is required. Should impacts be unavoidable, the document should develop compensation plans for any filled wetlands, with replacement done on an in-kind, on-site basis if possible. A permit from the U.S. Army Corps of Engineers (COE) is required prior to filling any wetlands and other waters of the United States.

#### \*AIR QUALITY AND NOISE IMPACTS

All appropriate air quality and noise impact analyses should be conducted. The noise impact analysis should include any future developments that are projected and currently approved.

#### \*ENVIRONMENTAL JUSTICE

An area of special concern to the EPA is Environmental Justice. Environmental Justice has been defined in Region III as the "implementation and enforcement of environmental laws and regulations, and applications of special programs and initiatives in a manner which ensures equal protection of ALL communities, ethnic groups, minority groups, age groups, gender and income groups, who have been generally found to reside in areas of higher pollutant impact." EPA suggest that a discussion of

environmental justice issues relating to the proposed action be included in the NEPA document to address environmental justice issues in the decision making process, where appropriate.

### Consultations

Any letters from agencies such as the US Fish and Wildlife Service (FWS) that have been formally consulted regarding possible effects of the project, or any comments received regarding the project should be included in the document. Included in this should be any letters as a result of FWS, COE and EPA consultations regarding any wetlands or threatened and endangered species potentially affected by the project. Letters that include correspondence with the State Historic Preservation Officer to determine if the project will affect any historic or archaeological sites should also be included. In addition, it may be appropriate to consult other state and federal agencies such as State Natural Heritage Offices.

During the scoping process, the FHWA should file a Notice of Intent to Prepare a document in the Federal Register and contact all interested parties, including the public. Additionally, contact should be made with the Regulatory Branch of the COE concerning NEPA requirements for permit issuance. COE, Regulatory Branch, and the EPA should be considered for the role of a Cooperating Agency, as defined by the Council On Environmental Quality regulations.

### Appendices or Technical Information

Any information that is relevant to the determination of the environmental impacts and need of the project should either be included in the Appendices or referred to in the document. If information such as additional volumes, plates, reports or other forms of documentation is referred to, a discussion on how to obtain these documents should be included.

### Public Involvement

The NEPA process encourages public involvement. With this in mind, efforts should be made to contact residents, businesses and land owners who will be affected by the proposed project. Their specific concerns should be determined early on and then addressed directly within the DEIS. The document should be written in such a manner that is easily understood by the local population and should be organized so that information can be quickly located. Tables, charts, graphs, maps, indexes, and common language should be utilized to the extent possible in order to facilitate the understanding and support of the affected community.

We appreciate the opportunity to participate in your DEIS scoping efforts and encourage your continued coordination with our agency

throughout this effort. As more detailed, site-specific information or alternatives to be evaluated become available, you may contact us for further assistance in focusing your DEIS efforts. Should you need to reach us, please contact Barbara Douglas at (215)566-2707.

Sincerely,

*Barbara Douglas*

Barbara Douglas,  
NEPA Project Review



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**DIVISION OF ENVIRONMENTAL PROTECTION**

1558 Washington Street East  
Charleston, WV 25311-2599

LAIDLEY ELI MCCOY, PH.D.  
DIRECTOR

GASTON CAPERTON  
GOVERNOR

RECEIVED  
OCT 23 1996

October 22, 1996

STATE OF WEST VIRGINIA  
DEPT. OF TRANSPORTATION  
& PUBLIC SAFETY  
DIVISION OF HIGHWAYS

Mr. Randolph T. Epperly, Jr.  
WV DOT/DOH  
Bldg. 5, Room A-430

*via InterDept. Mail*

Re: US 340 Improvement Study -  
VA State Line to Charles Town  
State Project U219-340-0.00 02  
Federal Project NH-0340(030)E  
Jefferson County

Dear Mr. Epperly:

This letter responds to your agency's letter (October 9, 1996) to Chief Farley accompanying the *Purpose and Need Report* for the above referenced project. The Office of Air Quality appreciates the opportunity to participate in the review process. As noted in our response (July 22, 1996) regarding the related scoping document, the entire project is confined to an area which is presently attainment/unclassifiable for all criteria air pollutants. Therefore, no formal conformity determination is required under the federal transportation conformity rule (40CFR93, Subpart A). The impending DEIS and associated documents should note this.

As we also commented, analyses that meet the NEPA requirements should be sufficient from a local perspective. However, there may be regional air quality impacts on the nearby Baltimore (MD) - Washington (DC) area. These potential impacts on ozone nonattainment areas may justify a more thorough air-quality analysis than would routinely be performed. If you have any questions or need more information, please feel free to contact me at 558-1217.

Sincerely,

William Frederick Durham  
Transportation Conformity Contact

Office of Air Quality, Air Programs and Planning Section  
Phone: (304) 558-1213 Fax: (304) 558-1222



NOV 12 1996

REPLY TO  
ATTENTION OF  
W. VA. DEPT. OF HIGHWAYS  
CHIEF ENGINEER DEVELOPMENT

DEPARTMENT OF THE ARMY  
PITTSBURGH DISTRICT, CORPS OF ENGINEERS  
WILLIAM S. MOORHEAD FEDERAL BUILDING  
1000 LIBERTY AVENUE  
PITTSBURGH, PA 15222-4186

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handle

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11/12/96

November 7, 1996

Operations and Readiness Division  
Regulatory Branch  
199660893

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NOV 12 1996

ROADWAY DESIGN DIVISION  
W. VA. DIV. OF HIGHWAYS

Mr. Norman Roush, Chief  
Engineer-Development  
West Virginia Department of  
Transportation  
1900 Kanawha Boulevard East  
Building Five, Room 109  
Charleston, West Virginia 25305-0430

Dear Mr. Roush:

I refer to the Purpose and Need document for the proposed US Route 340 improvement project, Virginia State Line to Charles Town, Jefferson County, West Virginia received in this office on October 15, 1996.

We have reviewed the summary of findings and project data submitted for this project and agree that significant safety deficiencies exist along the 4.5 mile project segment. It is apparent that the roadway deficiencies help to contribute to the numerous accidents which have occurred within the past three years.

Based on the combination of the existing roadway capacity, deficiencies, and the future travel demands anticipated, we concur with the findings of the Purpose and Need Report for this project and recognize the need for this upgrade.

If you have any questions, please contact Mr. Richard Sobol at 412-644-6885.

Sincerely,

E. Raymond Beringer  
Chief, Regulatory Branch



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS  
P.O. BOX 1715  
BALTIMORE, MD 21203-1715

November 20, 1996

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DEC - 2 1996

Planning Division

Mr. Ben Hark  
Environmental Services Section  
West Virginia Department of Transportation  
Department of Highways  
1900 Kanawha Boulevard East  
Building Five, Room 109  
Charleston, West Virginia 25305-0430

ROADWAY DESIGN DIVISION  
W. VA. DIV. OF HIGHWAYS

Dear Mr. Hark:

I am providing a response to your request for Baltimore District's comments on the US Route 340 Improvement Study. The comments provided below address the Corps of Engineers' (Corps') areas of concern, including direct and indirect impacts on existing and/or proposed Corps projects, flood control hazard potential, and regulatory requirements under Section 404 of the Clean Water Act.

Based upon our review of the information provided, there are no existing or proposed Corps projects that would be affected by the Route 340 improvements.

In accordance with the referenced document, portions of the proposed US Route 340 Road Improvements will be located within the flood plain. New construction or major improvements within the flood plain requires full compliance with Executive Order (E.O.) No. 11988, May 24, 1977, Flood Plain Management; Federal Emergency Management Agency regulations (FEMA); and other Federal, state, and local flood plain regulations. The objectives of the E.O. No. 11988 and other flood plain regulations are to avoid the adverse effects of occupying and modifying the flood plain and to avoid direct and indirect support of development in the flood plain. The order requires that activities not be located in the flood plain unless this would be the only practicable alternative. Activities that must be located in the flood plain must incorporate measures to (1) reduce the hazard and risk associated with floods; (2) minimize the adverse effects on human health, safety, and welfare; and (3) restore and preserve the natural and beneficial values of the flood plain.

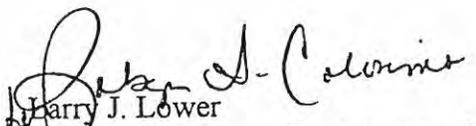
The proposed construction may cause an increase in water surface elevation (surcharge). FEMA regulations require that the surcharge not increase more than 1.0 foot. It is also suggested that the state and local resource agencies be contacted, as some states and local governments have more stringent surcharge requirements than FEMA.

- 2 -

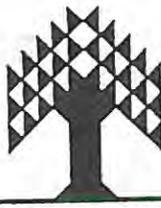
Certain activities in the waters of the United States, and jurisdictional wetlands, require Department of the Army permits from the Corps of Engineers. Corps regulations [33 CFR 320 through 330 and 33 CFR 230 and 325 (Appendix B)] require full compliance with the National Environmental Policy Act (NEPA) of 1969 during the review and evaluation of permit applications. To the maximum extent possible, the Corps will accept the information presented in NEPA documents for evaluating permit applications. This project is located within the Pittsburgh District. My staff has contacted this office and has determined that the Pittsburgh District will be providing comments with respect to the Corps' regulatory requirements. If you have any questions or need additional information on regulatory requirements, the point of contact is Mr. Ray Berringer, Chief, Regulatory Branch, Pittsburgh District, at (412) 644-4204.

If you have any questions on this matter, please call me or my action officer, Ms. Andrea E. Walker, at (410) 962-3027.

Sincerely,

  
Harry J. Lower  
Chief, Planning and Environmental  
Services

CF:  
CEORP-OR-R, Ray Berringer



WEST VIRGINIA DIVISION OF  
CULTURE AND HISTORY

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November 21, 1996

W. VA. DEPT. OF HIGHWAYS  
CHIEF ENGINEER DEVELOPMENT

Mr. Norman Roush  
Dept. of Transportation  
Building 5, Room 109  
Capitol Complex  
Charleston, WV 25305

RE: US 340 - Virginia Line to Charles Town  
State Project U219-340-0.00 02  
FR: 96-814-JF

Dear Mr. Roush,

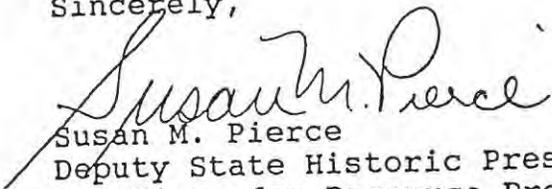
We have reviewed the following document: "Purpose and Need Report: US 340 Improvement Study". In accordance with Section 106 of the National Historic Preservation Act, we submit our comments on the above referenced project.

According to your study, high accident rates and other issues necessitates the need to improving US Route 340 between the Virginia State line and the existing four-lane section of the Charlestown Bypass.

If this project proceeds, a Phase I Archaeological and Architectural survey must be conducted in the study area to determine the locations of significant cultural resources.

We appreciate the opportunity to be of service. If you have any questions, please contact Patrick Trader, Senior Archaeologist.

Sincerely,

  
Susan M. Pierce  
Deputy State Historic Preservation  
Officer for Resource Protection

SMP:PDT

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ROADWAY DESIGN DIVISION  
W. VA. DIV. OF HIGHWAYS

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
841 Chestnut Building  
Philadelphia, Pennsylvania 19107-4431

JAN 23 1997

DV(ENV) Please  
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1/28/97

W. VA. DEPT. OF HIGHWAYS  
CHIEF ENGINEER DEVELOPMENT

Mr. Norman H. Roush  
Chief Engineer-Development  
WVDOT, Division of Highways  
1900 Kanawha Blvd. East  
Bldg. 5, Room 109  
Charleston, WV 25305-0430

Re: U.S. 340 Improvement Study, Jefferson County, West Virginia,  
Purpose and Need Report

Dear Mr. Roush:

Thank you for the opportunity to review and comment on the purpose and need document for the above referenced project. We apologize for the lateness of our comments.

The Environmental Protection Agency has not identified any omissions or concerns at this time and concur on the purpose and need for this project unless new information becomes available that may affect this decision. We look forward to working with you to avoid or minimize any potential environmental impacts associated with the proposed project as it moves to the next step in the planning process.

You can contact Marria O'Malley Walsh at (717) 628-9685 if you have any questions.

Sincerely,

John Forren, Program Manager  
Environmental Assessment &  
Regulatory Review

RECEIVED

JAN 28 1997

ROADWAY DESIGN DIVISION  
W. VA. DIV. OF HIGHWAYS

**RECEIVED**

Parks and Recreation  
State Capitol Complex  
Building 3  
Charleston, West Virginia 25305  
Telephone (304) 558-2764  
Fax (304) 558-0077

APR 15 1997



CECIL H. UNDERWOOD  
Governor

Equal Opportunity Employer

Administration (304) 558-3315 FAX (304) 558-2768	Law Enforcement (304) 558-2783 FAX (304) 558-1170	ROADWAY DESIGN DIVISION W. VA. DEPT. OF HIGHWAYS Parks and Recreation (304) 558-2764 FAX (304) 558-0077	Wildlife Resources (304) 558-2771 FAX (304) 558-3147	Conservation Education and Litter Control (304) 558-3370 FAX (304) 558-2768	Public Information (304) 558-3380 FAX (304) 558-2768	Real Estate Management (304) 558-3225 FAX (304) 558-3660	Wonderful West Virginia Magazine (304) 558-9152 FAX (304) 558-2768
--	---	---	--	---	--	--	--

April 10, 1997

*DV - Please handle  
KC  
4/14/97*

W. VA. DEPT. OF HIGHWAYS  
Mr. Leonard H. Roush  
Chief Engineer, Development  
WV Division of Transportation  
Division of Highways  
1900 Kanawha Boulevard, East  
Building 5, Room 109  
Charleston, WV 25305-0430

Re: U.S. 340 Virginia Line to Charles Town  
Jefferson County

Dear Mr. Roush:

The Alternatives' Report for the subject project has been reviewed. This project does not directly affect any areas operated by the Division of Natural Resources, Parks and Recreation Section. However, we are always supportive of improvements to West Virginia's highway system because it is felt that these improvements will make it easier for tourists to visit our state parks.

Sincerely yours,

*Stephen DeBarr*  
Stephen DeBarr, P.E., Assistant Chief  
Planning, Engineering, and Maintenance

SD/gk

cc: Cordie Hudkins, Chief





6-29

**DIVISION OF ENVIRONMENTAL PROTECTION**

GASTON CAPERTON  
GOVERNOR

1558 Washington Street East  
Charleston, WV 25311-2599

LAIDLEY ELI MCCOY, PH.D.  
DIRECTOR

April 11, 1997

**RECEIVED**  
APR 11 1997

Mr. Randolph T. Epperly, Jr.  
WV DOT/DOH  
Bldg. 5, Room A-430

*via InterDept. Mail*

ROADWAY DESIGN DIVISION  
W. VA. DIV. OF HIGHWAYS

Re: US 340 Improvements Alternatives Report  
VA State Line to Charles Town  
State Project U219-340-0.00 02  
Federal Project NH-0340(030)E  
Jefferson County

Dear Mr. Epperly:

This letter responds to your agency's letter (April 4, 1997) to Chief Farley accompanying the *Alternatives Report* for the above referenced project. The Office of Air Quality appreciates the opportunity to continue participation in the review process. As noted in our responses (July 22, 1996 & October 22, 1996) regarding other related documents, the entire project is confined to an area which is presently attainment/unclassifiable for all criteria air pollutants. Therefore, no formal conformity determination is required under the federal transportation conformity rule (40CFR93, Subpart A). The impending DEIS and associated documents should note this.

As we also commented, analyses that meet the NEPA requirements should be sufficient from a local perspective. However, there may be regional air quality impacts on the nearby Baltimore (MD) - Washington (DC) area. These potential impacts on ozone nonattainment areas may justify a more thorough air-quality analysis than would routinely be performed. If you have any questions or need more information, please feel free to contact me at 558-1217.

Sincerely,

William Frederick Durham  
Transportation Conformity Contact

Office of Air Quality, Air Programs and Planning Section  
Phone: (304) 558-1213 Fax: (304) 558-1222

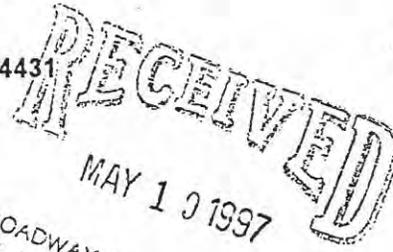


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III

841 Chestnut Building  
Philadelphia, Pennsylvania 19107-4431

W. VA. DEPT. OF HIGHWAYS  
CHIEF ENGINEER DEVELOPMENT

MAY 14 1997



ROADWAY DESIGN DIVISION  
W. VA. DIV. OF HIGHWAYS

DV - Please handle  
KH  
5/19/97

Mr. Norman H. Roush  
Chief Engineer-Development  
WVDOT, Division of Highways  
1900 Kanawha Blvd. East  
Bldg. 5, Room 109  
Charleston, WV 25305-0430

RE: US 340, Virginia Line to Charles Town, Jefferson County,  
WV., Alternatives Report

Dear Mr. Roush:

Thank you for the opportunity to review and comment on the alternatives report for the above referenced project. The West Virginia Department of Transportation has proposed five build alternatives that will meet the project purpose and need to improve 4.5 miles of US 340 to address capacity and safety deficiencies.

Our review has determined that a wide range of practicable and feasible alternatives was considered. The alternatives study considered Transportation Systems Management (TSM), Mass Transit, No Build and Build Alternatives. The TSM, Mass Transit and No Build alternatives will not meet the needs of the project and were eliminated from further consideration. The No Build alternative will be retained as a baseline for comparison of potential impacts. The Build alternative includes the construction of a controlled access four-lane divided highway with a depressed median. Seven different build alternatives were developed to utilize available right of way, to reduce impacts to adjacent property owners, and maintain an orderly flow of traffic during project construction. Evaluation and analyses resulted in the elimination of two of the Build alternatives. The remaining five Build alternatives will be retained for further analyses.

Although the report summarizes the projected costs and the residential and commercial relocations and acquisitions due to the various Build alternatives it does not address the potential impacts, if any, to natural resources. We are concerned that the lack of this information has limited our ability to evaluate the proposed Build alternatives. EPA cannot concur on the alternatives report until we receive this information for evaluation. The Draft Environmental Impact Statement (DEIS) that is developed for this project must full address both the potential direct and secondary environmental impacts that may be

expected to occur for each Build alternative. Impacts to natural resources must be avoided to the greatest extent possible and mitigation measures developed where impacts are deemed unavoidable.

Please contact Marria O'Malley Walsh at (717)628-9685 if you have any questions regarding our comments.

Sincerely,



John Forren, Program Manager  
NEPA & Wetlands Regulatory Review

RECEIVED  
JUN 23 1997  
ENVIRONMENTAL PROTECTION AGENCY

DV-Randle

kh  
6/22/97

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
841 Chestnut Building  
Philadelphia, Pennsylvania 19107-4431  
W. VA. DEPT. OF HIGHWAYS  
CHIEF ENGINEER DEVELOPMENT

JUN 19 1997

RECEIVED  
JUN 23 1997

Mr. Norman H. Roush  
Chief Engineer Development  
WVDOT, Division of highways  
1900 Kanawha Blvd. East  
Bldg. 5, Room 109  
Charleston, WV 25305-0430

ROADWAY DESIGN DIVISION  
W. VA. DIV. OF HIGHWAYS

RE: US 340, Virginia Line to Charles Town, Jefferson County, WV, Alternatives Report

Dear Mr. Roush:

We have received preliminary information on the potential impacts to natural resources from the above referenced project as requested. This information states that technical reports addressing the potential direct and cumulative impacts to natural resources, cultural resources, air quality, noise and the visual environment for each Build alternative will be provided for comment prior to publication of the Draft Environmental Impact Statement (DEIS) for the project.

EPA concurs with the Alternatives Report based on the general information provided and the future availability of technical reports that will contain detailed evaluations of the five build alternatives on the natural and human environment. Consideration of including environmental information to the level of detail, such as that contained in the Alternatives Report for US 340, in developing future alternatives reports is encouraged, especially if technical reports are not prepared prior to publication of the DEIS. Your intent to prepare such technical documents could also be referred to in the alternatives reports.

Thank you for your response to our comment letter. Please contact Marria O'Malley Walsh at (717) 628-9685 if you have any questions.

Sincerely,



Roy E. Denmark, Jr., Deputy Chief  
Environmental Programs Branch

cc: Greg Akers, WVDOT



DEPARTMENT OF THE ARMY  
PITTSBURGH DISTRICT, CORPS OF ENGINEERS  
WILLIAM S. MOORHEAD FEDERAL BUILDING  
1000 LIBERTY AVENUE  
PITTSBURGH, PA 15222-4186

REPLY TO  
ATTENTION OF:

July 8, 1997

Operations and Readiness Division  
Regulatory Branch  
199701151

RECEIVED  
JUL 11 1997  
ROADWAY DESIGN DIVISION  
W. VA. DIV. OF HIGHWAYS

Mr. Ben Hark, Chief Environmental Services  
West Virginia Department of Transportation  
1900 Kanawha Blvd. East  
Building Five, Room 109  
Charleston, West Virginia 25305-0440

Dear Mr. Hark:

I refer to the U.S. 340 Improvement Study Alternatives Report of February 1997 regarding highway improvement from 0.5 miles beyond the Virginia state line to the Charlestown Bypass, located north of Rippon in Jefferson County, West Virginia.

We have reviewed your alternatives analysis and essentially concur with the issues addressed in the alternatives report. However, to be in full compliance with the NEPA/Section 404 process, it is essential that impacts to waterways, wetlands and floodplains be fully addressed prior to the selection of the preferred alternative.

If you have any questions, please contact Richard Sobol at (412) 395-7153.

Sincerely,

Albert H. Rogalla  
Chief, Regulatory Branch



**WEST VIRGINIA DIVISION OF  
CULTURE AND HISTORY**

February 17, 1999

Mr. James Sothen  
Division of Highways  
Building 5, Room 109  
Capitol Complex  
Charleston, WV 25305

RECEIVED  
FEB 26 1999  
ENGINEERING DIVISION  
WV DCH

RE: Route 340 - Archaeological Assessment and  
Archaeological Predictive Model  
FR: 96-814-JF

Dear Mr. Sothen,

We have reviewed the following documents: "Phase I Cultural Resource Investigation Architectural Survey and Archaeological Assessment, Proposed Improvements to US 340 Jefferson County, West Virginia" and the "Predictive Model Addendum". In accordance with Section 106 of the National Historic Preservation Act, we submit our comments on the above referenced project.

Overall, we find both documents acceptable and the Archaeological Predictive Model to be thorough and comprehensive. We look forward to reviewing the results of the predictive model testing.

We appreciate the opportunity to be of service. If you have any questions, please contact Patrick Trader, Senior Archaeologist.

Sincerely,

Susan M. Pierce  
Deputy State Historic Preservation Officer

SMP:PDT



**WEST VIRGINIA DIVISION OF  
CULTURE AND HISTORY**

November 23, 1999

**RECEIVED**

NOV 30 1999

ENGINEERING DIVISION  
WV DOH

Mr. James Sothen  
Division of Highways  
Building 5, Room 110  
Capitol Complex  
Charleston, WV 25305

RE: US 340, VA Line to Charles Town  
State Project U219-340-0300(02)  
FR#: 96-814-JF-6

Dear Mr. Sothen:

We have reviewed the archaeological sample survey report for the above mentioned project. As required by Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

The report satisfactorily addresses our concerns regarding the presence of cultural resources within the project area. 46Jf300 and 305, both prehistoric isolates, do not exhibit the potential for further significant discovery, and as such are not eligible for inclusion in the National Register of Historic Places. 46Jf206, a mixed prehistoric and historic site, also contains no further potential and is not eligible for inclusion in the Register. No further investigation of these sites is necessary. We concur with the consultant's recommendation that sites 46Jf301, 302, 303, and 304 exhibit the potential to provide further information regarding early historic settlement in the project area. Phase II investigation must be performed in order to determine eligibility if these sites are to be impacted by construction activity.

We appreciate the opportunity to be of service. If you have questions regarding our comments or the Section 106 process, please call Joanna Wilson, Senior Archaeologist, at (304) 558-0220, Ext. 146.

Sincerely,

Susan M. Pierce  
Deputy State Historic Preservation Officer

SMP:jlw



WEST VIRGINIA DIVISION OF  
CULTURE AND HISTORY

December 7, 1999

Mr. James Sothen  
Division of Highways  
Building 5, Room 110  
Capitol Complex  
Charleston, WV 25305

RECEIVED

DEC 14 1999

ENGINEERING DIVISION  
WV DOH

RE: US 340, VA Line to Charles Town  
State project U219-340-0300(02)  
FR#: 96-814-JF

Dear Mr. Sothen:

As requested, we have reviewed the consultant's conclusions as found in the archaeological sample survey report for the above mentioned project. We concur with the recommendation that medium and high probability areas be surveyed of the Preferred Alternative. We add the recommendation that those portions of the low probability areas not previously disturbed or located on steep slopes be visually surveyed and shovel tested if necessary. As the discussion of the predictive model asserts, there has been very little organized examination of this portion of Jefferson County, and the US 340 project presents an excellent opportunity to remedy this oversight.

We appreciate the opportunity to be of service. If you have questions regarding our comments or the Section 106 process, please call Joanna Wilson, Senior Archaeologist, at (304) 558-0220 extension 146.

Sincerely,

Susan M. Pierce  
Deputy State Historic Preservation Officer

SMP:jlw



WEST VIRGINIA DIVISION OF  
CULTURE AND HISTORY

January 7, 2000

Mr. James Sothen  
Division of Highways  
Building 5, Room 110  
Capitol Complex  
Charleston, WV 25305

RE: US 340, VA Line to Charles Town  
State Project U219-340-0300(02)  
FR#: 96-814-JF-8

Dear Mr. Sothen:

We have reviewed the two volume Architectural Evaluation report for the above mentioned project. As required by Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

The proposed project involves road improvements along U.S. Route 340 in Jefferson County. The project area extends approximately 4.8 miles from the Virginia state line to the existing four-lane section of the Charles Town bypass north of the community of Rippon. The undertaking includes the development of a four-lane depressed median facility with partially controlled access. The Area of Potential Effect (APE) for the purpose of this report is approximately one mile wide, extending to the Norfolk and Western Railroad on the west.

The study area involved encompasses one of the region's most picturesque and culturally rich landscapes. The period of significance for the subject locale spans three centuries, from early settlement after the French and Indian War to the end of the historic era in 1950. Additionally, the resources contained in the project area exhibit an extremely high degree of integrity and stand out as some of the most well preserved historic features in the state. The resources identified by Coastal Carolina Research as being eligible for inclusion in the National Register include two historic districts and eight individual buildings. Our evaluation of the National Register eligibility of all surveyed properties associated with the U.S. Route 340 project follows.

Kabletown Rural Historic District: The Kabletown Rural Historic District encompasses approximately 18 square miles (11,520 acres) bordered roughly by the West Virginia/Virginia state line on the south, the western bank of the Shenandoah River on the east, and the Kabletown Magisterial District line on the north. The district contains remarkably intact landscape and

THE CULTURAL CENTER • 1900 KANAWHA BOULEVARD, EAST • CHARLESTON, WEST VIRGINIA 25305-0300  
TELEPHONE 304-558-0220 • FAX 304-558-2779 • TDD 304-558-3562  
EEO/AA EMPLOYER

Page 2  
January 7, 2000  
Mr. James Sothen

architectural features dating from circa 1763 to 1950, including the National Register listed William Grubb Farm and Ripon Lodge. Coastal Carolina Research recommends that the Kabletown Rural Historic District is eligible for listing in the National Register under Criterion A for its association with the broad pattern of agricultural history in Jefferson County, and Criterion C for its well preserved architectural collection dating from the eighteenth to the mid-twentieth centuries. We concur with the assessment that the Kabletown Rural Historic District is eligible for the National Register. We also agree with the proposed district's period of significance and demarcation.

Rippon Historic District: The Rippon Historic District was identified by Coastal Carolina Research as potentially eligible for the National Register under Criterion A for its development as a small commercial crossroads community that served the greater agricultural region around it, and Criterion C for its collection of intact mid-nineteenth to early-twentieth century residential, commercial, educational, religious, and social buildings. The suggested period of significance for the Rippon Historic District extends from 1852, when a post office was established there, to the end of the historic period in 1950. The recommended district boundary encompasses all of the unincorporated hamlet of Rippon and is drawn to include the largest concentration of historic buildings. Captured by the boundary are approximately forty contributing and about seven non-contributing resources. We concur that the Rippon Historic District is eligible for the National Register for its association with the development of this small rural commercial center and its architectural merit. Additionally, we agree with the proposed National Register boundary alignment and period of significance.

Straithmore (Resource No. 54): Constructed in 1830, Straithmore illustrates the architectural transition between the Federal and Greek Revival styles. The house and its associated outbuildings sit on 160 acres of land, approximately eighty percent of the original holdings. Straithmore is eligible for the National Register under Criterion C as a fine example of a late-Federal style dwelling. It is also eligible under Criterion A for its association with a nearby mill, one of the earliest in the area. The mill, now in ruins, contributes to the understanding of early industrial activity in rural Jefferson County and dates to circa 1788. The proposed National Register boundary for Straithmore includes the current 160-acre tax parcel that contains the dwelling, a contemporary brick smokehouse, a circa 1900 frame cornerrib, and a circa 1900 frame barn; and the 3.37-acre lot containing the deteriorated mill. Also included in the boundary description is the remnants of an intact eighteenth century trace that approaches the mill from the southwest, traverses the farm road east of the mill, and continues north, west of the Straithmore house. Additionally, Straithmore contributes to the Kabletown Rural Historic District. We concur with the eligibility assessment, the proposed period of significance, and the suggested National Register limits.

Abuhove House (Resource No. 53): Originally constructed circa 1800 as the miller's house for Bancy's Mill, the Abuhove House is no longer a part of this property. The dwelling has been

significantly altered with the application of vinyl siding, replacement of the original chimney, addition of a new front porch, and a mid-twentieth century 1-storey, 2-bay concrete block wing. Although not individually eligible for the National Register, the Abuhove House contributes to the historical understanding of the Kabletown Rural Historic District.

Beulah Presbyterian Church (Resource No. 55): The Beulah Presbyterian Church was built in 1874 as a Union Church that served three denominations: Methodist, Presbyterian, and Lutheran. Since its construction the church has undergone two major alterations. The first was in 1974 when the interior was remodeled to include modern wood paneling. The second alteration occurred in 1997 when the building was re-roofed and the steeple removed. Although not individually eligible, we concur that the Beulah Presbyterian Church is a contributing resource in the proposed Kabletown Rural Historic District.

William Grubb Farm (Resource No. 56): The William Grubb Farm was listed in the National Register of Historic Places in 1991 under Criterion A under the themes of Exploration/Settlement, Agriculture, and Religion; and under Criterion C for Architecture.

Wheatlands (Resource No. 50): The main house at Wheatlands was presumably constructed sometime during the eighteenth century by Henry Smith Turner, but was demolished in the 1960s. All that remains on the property are the house's T-shaped stone foundation, three contemporary outbuildings, the stone ruins of a fourth structure (slave cabin?), and a frame bank barn and corncrib from the early-twentieth century. Wheatlands and the slave cabin ruins are recommended eligible for the National Register under Criterion D for their potential to provide significant information about the domestic aspect of an early nineteenth century plantation complex. The period of significance extends from the time of construction (circa 1798) to the time of Henry S. Turner's death (1834). The recommended National Register boundary encompasses an area three acres in size and includes the main house foundation, the ruins of the outbuilding, and the three extant dependencies. In addition to its individual NR eligibility, Wheatlands is also a contributing resource in the Kabletown Rural Historic District. The demarcation for the property within the district consists of the current tax parcel (111.6 acres) and includes the previously mentioned resources as well as the frame bank barn and corncrib. We concur with the National Register assessment, period of significance, and boundaries for the individual and contributing resource listings.

Byrdland (Resource No. 49): According to historical and architectural evidence, Byrdland was constructed sometime between 1847 and 1852. The property has more than twenty historic outbuildings including three circa 1900 tenant houses and numerous agricultural dependencies. Byrdland is considered eligible for the National Register by Coastal Carolina Research under Criterion A for its association with late nineteenth century agricultural practices and Criterion C for its architectural merit. The suggested period of significance extends from circa 1847 to the end of the historic period in 1950. Coastal Carolina Research recommends that the National

Page 4  
January 7, 2000  
Mr. James Sothen

Register boundary encompass the current tax parcel of 402.5 acres. This demarcation would include the main house, all contributing outbuildings, and associated farmland. We concur with the National Register eligibility, period of significance, and boundary recommendation.

Ripon Lodge (Resource No. 48): Ripon Lodge was listed in the National Register in 1984. At the time of the original listing, only twenty-seven acres comprising the main house and associated outbuildings were included in the nomination. In 1998, the National Register boundary was extended to encompass all 194.4 acres historically associated with the farm. The property also contributes to the Kabletown Rural Historic District.

Oak Hill Farm (Resource No. R28): Oak Hill Farm was constructed in 1852 and enlarged circa 1867 with the addition of a tower. Further alterations to the original fabric have occurred and include minor interior changes, a rear shed-roofed screened in porch, an exterior metal spiral staircase, 1/1 replacement windows from the early twentieth century, and the application of stucco to the exterior walls. Due to these alterations, it is not recommended that Oak Hill Farm be individually listed. However, the property is suggested as a contributing resource to both the Kabletown Rural Historic District and the Rippon Historic District. We concur with this assessment.

Fairview Farm (Resource No. 47): Fairview Farm was constructed in the mid-nineteenth century with later additions. It has been altered with the addition of aluminum siding, replacement windows, and side and rear wings. We concur that the Fairview Farm is not eligible for the National Register due to its loss of historic integrity.

Wayside Farm (Resource No. 14): The original portion of Wayside Farm was constructed circa 1816 with later additions occurring circa 1829 (rear wing) and circa 1860 (side two-bay east wing). Wayside is recommended as eligible for the National Register under Criterion C as a relatively unaltered example of the vernacular Federal style. The period of significance extends from circa 1816, when the house was built, to the end of the historic period in 1950. Suggested National Register limits for the resource encompass the current parcel (approximately 15.78 acres) and include all associated outbuildings. Besides being individually eligible, Wayside is also recommended as a contributing resource in the Kabletown Rural Historic District. We concur with the eligibility determination, period of significance, and proposed boundary for Wayside Farm.

Glenwood (Resource No. 12): Constructed in 1845, Glenwood is a well preserved manor house exhibiting an architectural mix of Georgian arrangement, Federal-style exterior formality, and interior Greek Revival detailing. For this reason the dwelling was judged eligible for listing in the National Register of Historic Places under Criterion C. The period of significance extends from 1845 to the end of the historic era in 1950. The recommended National Register boundary encompasses the current tax parcel (25.18 acres) and includes the historic house, the remaining

farmland, and associated outbuildings. We concur with the assessment of National Register eligibility, period of significance, and proposed boundary for Glenwood.

Hackberry (Resource No. 9, formerly called Godfrey-Tiedemann House): Hackberry is a 2-storey, three-bay, frame I-house constructed in 1881. The dwelling has been altered by the application of stucco on its exterior and a circa 1940 1-storey frame kitchen addition. We concur that Hackberry does not meet the National Register criteria for individual listing. It is not associated with any significant event or individual and does not possess sufficient architectural merit. We also agree that the property is not a contributing resource in the Kabletown Rural Historic District. Unlike the farms included within the district boundary, Hackberry historically maintained a relatively small landholding (55 acres) and did not profit greatly from agricultural pursuits.

Olive Boy (Resource No. 7 [139]): The main house at Olive Boy is a T-shaped, gable-front-and-wing plan, Italianate-style, brick dwelling constructed in 1858. Olive Boy is considered eligible for the National Register under Criterion A for its association with the agricultural development of Jefferson County, and Criterion C for its architectural merit. The current sixteen-acre tax parcel is only a fraction of the land historically associated with the plantation. Due to the small tract of land that the resource now occupies, the proposed National Register boundary extends beyond the current legal parcel and more accurately reflects Thomas Isbell's historic holdings. Coastal Carolina Research's recommended National Register demarcation for Olive Boy consists of approximately 183.93 acres comprising the manor house, the Spring Grove Cemetery, the circa 1910 Shady Grove Farm tenant house, agricultural lands, and all outbuildings associated with the property. The resource also contributes to the Kabletown Rural Historic District. We concur with the consultant's National Register determination, period of significance, and suggested NR boundary for Olive Boy.

Balclutha (Resource A): Balclutha, a late Federal-style plantation house, is listed in the National Register of Historic Places. The estate is partially located in Clarke County, Virginia, and partially in Jefferson County, West Virginia. However, the majority of the resources—the house, garage, and meat house—are in Virginia. Only two barns that are currently being dismantled by the owner are located in West Virginia.

Dunn-Jenkins House (Resource No. 10, formerly called the Jenkins House): The Dunn-Jenkins House is a typical circa 1915 vernacular hall-and-parlor house that has been altered with the addition of a rear wing and a glassed in front porch. Additionally, the dwelling's historic setting has been compromised with modern intrusions. We concur that this resource is not eligible for listing in the National Register.

Chapman Tenant House (Resource No. 11): This modest 1 ½-storey vernacular log and frame dwelling is part of the property now owned by Mr. Donald Chapman (see #10). The resource has

been altered with the application of vinyl siding and a modern 1-storey rear addition. We concur that the Chapman Tenant House is not eligible for listing in the National Register of Historic Places.

John's Family Restaurant (Resource No. 8, formerly called John's Diner): According to county tax records, this building was originally constructed as a grocery store in 1944 and later converted into a restaurant. We concur that John's Family Restaurant does not demonstrate the necessary significance to merit its listing in the National Register of Historic Places.

Arthur Allen House 1 (Resource No. 5, formerly called House on Smith Road): The Arthur Allen House 1 was constructed sometime before 1883 (circa 1870?). Coastal Carolina Research concluded that although the resource does not display characteristics that make it individually eligible for the National Register, the Arthur Allen House 1 should be considered as a contributing feature in the Kabletown Rural Historic District. We concur with this assessment.

Arthur Allen House 2 (Resource No. 6, formerly called House on Smith Road): The Arthur Allen House 2 was constructed at the turn of the twentieth century. Coastal Carolina Research concluded that although the resource does not display characteristics that make it individually eligible for the National Register, the Arthur Allen House 2 should be considered as a contributing feature in the Kabletown Rural Historic District. We concur with this assessment.

Edward Allen House (Resource No. 3): The Edward Allen House is a limestone Colonial Revival dwelling constructed in 1927. We concur that the property is not individually eligible for listing in the National Register. Both the architectural style and exterior building material are common for this area. There is no evidence to suggest that the resource is associated with any significant event or individual. We also agree that the Edward Allen House should not be considered a contributing feature in the Kabletown Rural Historic District. Historical records and the lack of any agricultural outbuildings indicate that the house never was associated with farming. This would prohibit its listing within the context of the district.

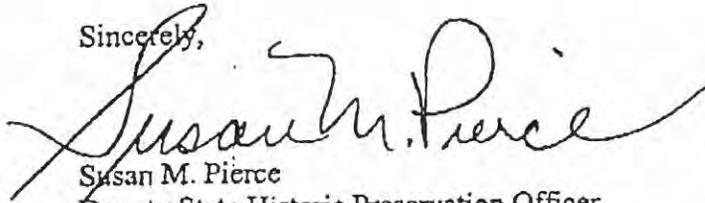
In summary, we concur with the recommendations made in the architectural resources survey report that the Kabletown Rural Historic District and Rippon Historic District are eligible for listing in the National Register of Historic Places. Additionally, eight properties are individually eligible for listing as well as contributing resources in the Kabletown Rural Historic District. These properties are Straithmore, the William Grubb Farm, Wheatlands, Byrdland, Ripon Lodge, Wayside Farm, Glenwood, and Olive Boy. Oak Hill Farm is eligible as contributing to both the Kabletown Rural Historic District and the Rippon Historic District. We agree that the Abuhove House, Beulah Presbyterian Church, Arthur Allen House Number 1, and Arthur Allen House Number 2 are not individually eligible, but contribute to the Kabletown Rural Historic District. Seven structures are not eligible for listing in the National Register either individually or as components of a historic district.

Page 7  
January 7, 2000  
Mr. James Sothen

We would like to commend Maral Kablian for her thorough work and research in preparing the architectural evaluation report. Her exhaustive efforts to document historic resources within the project area and insightful narrative expedited our review and are greatly appreciated.

We appreciate the opportunity to be of service. If you have questions regarding our comments or the Section 106 process, please contact Marc Holma, Structural Historian, at (304) 558-0220, Ext. 723.

Sincerely,

A handwritten signature in cursive script that reads "Susan M. Pierce". The signature is written in dark ink and is positioned above the typed name and title.

Susan M. Pierce  
Deputy State Historic Preservation Officer

SMP:mh



WEST VIRGINIA DIVISION OF  
CULTURE AND HISTORY

March 10, 2000

Mr. James Sothen  
Division of Highways  
Building 5, Room 110  
Capitol Complex  
Charleston, WV 25305

RECEIVED  
MAR 14 2000  
ENGINEERING DIVISION  
WV DOH

RE: US 340, VA Line to Charles Town  
State Project U219-340-0300(02)  
FR#: 96-814-JF-9

Dear Mr. Sothen:

We have reviewed the preliminary Criteria of Effect findings for the above mentioned project. As required by Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

Architectural Resources:

We have summarized our preliminary determinations of effect for the historic architectural resources located within the U.S. 340 project area in the enclosed table. Please note that these findings are preliminary only and are subject to change once we review the draft Criteria of Effects report. Additionally, we recommend that the Virginia State Historic Preservation Office be consulted regarding the undertaking's impact to the two historic resources located in that jurisdiction. These resources are Balclutha and the Long Marsh Run Rural Historic District. Please note that the map showing impacted resources does not identify the Kabletown Historic District; this is misleading.

The preliminary Criteria of Effect narrative states that Olive Boy Farm is "directly impacted by land acquisition for the conceptual right of way for all five of the build alternatives." As such, DOH rendered a preliminary *Adverse Effect* determination for all build alternatives regarding this resource. Although the enclosed project area map does not appear to support this judgement, we will concur until we have the opportunity to review the additional information presented in the draft Criteria of Effect report.

Archaeological Resources:

Your overview of effects criteria includes discussion of conditions allowing a determination of no adverse effect. The first condition states that such a determination may be made "when the historic property is of value only for its potential contribution to archaeological [or] historic research, and when such value can be substantially preserved through the conduct of appropriate

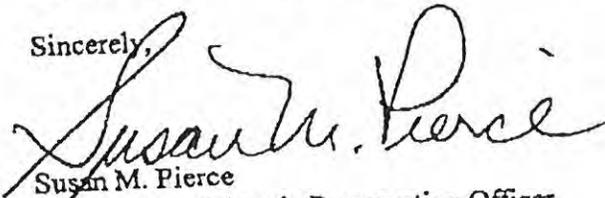
Page 2  
March 10, 2000  
Mr. James Sothen

research". Please be aware that any damage of or alteration to a property with demonstrated archaeological significance must be termed an *adverse effect* under 36 CFR 800, as amended. Appropriate research may be used in mitigation, but it does not alter the determination.

We will provide comments and recommendations regarding further analysis of archaeological resources within the property upon completion of our review of the Phase I report. If a build alternative is selected as the Preferred Alternative, we will provide recommendations regarding impacts to the Wheatlands Farm archaeological sites, as well as any and all necessary mitigation.

We appreciate the opportunity to be of service. If you have questions regarding our comments or the Section 106 process, please contact Marc Holma, Structural Historian, or Joanna Wilson, Senior Archaeologist, at (304) 558-0220.

Sincerely,

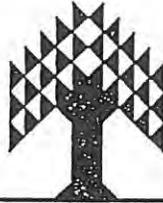


Susan M. Pierce  
Deputy State Historic Preservation Officer

SMP:mh/jlw

**TABLE IV-14  
PRELIMINARY DETERMINATION OF EFFECT**

Historic Resource	EFFECT BY BUILD ALTERNATE				
	Alternate 1	Alternate 3	Alternate 4	Alternate 5	Alternate 6
Kabletown Rural Historic District	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>
Village of Rippon Historic District	No Adverse Effect <i>NAE</i>	No Adverse Effect <i>NAE</i>	Adverse Effect <i>AE</i>	No Adverse Effect <i>NAE</i>	No Effect <i>NAE</i>
Balclutha	No Effect <i>NE</i>	No Effect <i>NE</i>	No Effect <i>NE</i>	No Effect <i>NE</i>	No Effect <i>NAE</i>
Olive Boy Farm	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>
Glenwood	No Effect <i>NE</i>	No Effect <i>NE</i>	No Adverse Effect <i>NAE</i>	Adverse Effect <i>AE</i>	No Effect <i>NE</i>
Wayside Farm	No Effect <i>NE</i>	No Effect <i>NE</i>	No Adverse Effect <i>NAE</i>	Adverse Effect <i>AE</i>	No Effect <i>NE</i>
Ripon Lodge	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>	No Effect <i>NE</i>	No Effect <i>NE</i>	Adverse Effect <i>AE</i>
Birdland	No Effect <i>NE</i>	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>	No Effect <i>NE</i>
Straithmore	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>	Adverse Effect <i>AE</i>
William Grubb Farm	No Effect <i>NAE</i>	No Effect <i>NE</i>	No Effect <i>NE</i>	No Effect <i>NE</i>	No Effect <i>NAE</i>



WEST VIRGINIA DIVISION OF  
CULTURE AND HISTORY

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JUN 08 2000

ENGINEERING DIVISION  
WV DOH

June 2, 2000

Mr. James Sothen  
Division of Highways  
Building 5, Room 110  
Capitol Complex  
Charleston, WV 25305

RE: US 340, VA Line to Charles Town  
State Project U219-340-0300(02)  
FR#: 96-814-JF-10

Dear Mr. Sothen:

We have reviewed the addendum architectural survey report for the above mentioned project. As required by Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

The West Virginia Division of Highways has extended the project area for the U.S. Route 340 improvements 0.2 mile west of the Norfolk and Western Railroad track. As a result, additional survey work was necessary in order to identify architectural resources fifty years old or older located in the Area of Potential Effect (APE). The current report documents the result of this new survey.

Coastal Carolina Research, Inc. found one resource, the Yates-Butler House (#57), that is fifty years old or older located within the expanded APE. The Yates-Butler House sites on a one acre lot and was constructed circa 1900. This vernacular hall and parlor dwelling has undergone numerous alterations such as the application of aluminum siding, enclosure of the front porch, replacement of the original windows, and addition of a large two-storey shed roof wing. We concur that the Yates-Butler House is not eligible for listing in the National Register of Historic Places due to its loss of historic integrity.

*We appreciate the opportunity to be of service. If you have questions regarding our comments or the Section 106 process, please contact Marc Holma, Senior Structural Historian for Review and Compliance, at (304) 558-0220, Ext. 723.*

Sincerely,

Susan M. Pierce  
Deputy State Historic Preservation Officer

SMP:mh



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE



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

OCT 03 2000

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OCT 04 2000

Mr. James E. Sothen  
West Virginia Department of Transportation  
Division of Highways  
1900 Kanawha Boulevard East  
Building 5, Room 110  
Charleston, West Virginia 25305-0430

ENGINEERING DIVISION  
WV DOH

Dear Mr. Sothen:

The U. S. Fish and Wildlife Service has reviewed the Biological Assessment prepared to determine if construction associated with improvements of US 340 in Jefferson County, West Virginia, will adversely affect the endangered Indiana bat, *Myotis sodalis*. The biological assessment was prepared pursuant to Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). The West Virginia Department of Transportation (WVDOT) in cooperation with the Federal Highway Administration is proposing to improve US 340 in Jefferson County from the West Virginia state line to the existing four-lane section of the Charles Town bypass, approximately two miles north of the community of Rippon. The total project length is approximately four miles, affecting approximately four to nine acres of forested habitat.

The concern for the Indiana bat stems from the numerous hibernacula in the eastern limestone region of West Virginia and the occurrence of spring and summer foraging and roosting habitat in the vicinity of the proposed project.

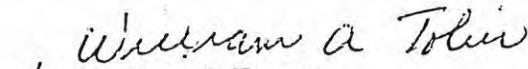
The Service has compared the number of acres of suitable foraging and roosting habitat on the West Virginia landscape available to each Indiana bat, versus the total acreage of forest. On that basis, we have determined that small projects, generally affecting 17 acres or less of suitable foraging and roosting habitat, will have an infinitesimally small chance (at the 98% confidence level) of resulting in direct or indirect take. Therefore, we believe that habitat alterations of not more than 17 acres of forested habitat are discountable and unlikely to adversely affect the endangered Indiana bat at any season of the year. The proposed project will result in the loss of approximately four to nine acres of forested habitat, depending upon which alternative is selected, including the loss of approximately 45 to 101 potential roost trees (PRTs). This loss of PRTs is less than one-tenth of a percent of the estimated available PRTs with the 2-mile radius of the project center line. The total forested area within the analysis area is over 1,900 acres.

Because the project will only affect four to nine acres of forested habitat, you may clear this habitat during any time of year.

Based on the facts that the project will only affect four to nine acres (less than one percent of potential habitat within a 2-mile radius of the project), the Service believes that construction of the project is unlikely to adversely affect the endangered Indiana bat. Therefore, no further Section 7 consultation under the Endangered Species Act is required with the Service on the proposed US 340 improvements in Jefferson County from the West Virginia state line to the existing four-lane section of the Charles Town bypass. Should project plans change, or if additional information on listed and proposed species or species of concern becomes available, this determination may be reconsidered.

If you have any questions regarding these comments please contact William A. Tolin of my staff at 304-636-6586.

Sincerely,

  
for Jeffrey K. Towner  
Field Supervisor



WEST VIRGINIA DIVISION OF  
CULTURE AND HISTORY

November 9, 2000

Mr. James Sothen  
Division of Highways  
Building 5, Room 110  
Capitol Complex  
Charleston, WV 25305

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ENGINEERING DIVISION  
WV DOH

RE: US 340  
State Project U219-340-0300(02)  
FR#: 96-814-JF-13

Dear Mr. Sothen:

We have reviewed the preliminary Criteria of Effect findings for Alternative 8 of the above mentioned project. As required by Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR 800: "Protection of Historic Properties," we submit our comments.

Architectural Resources:

Due to adverse effects to several historic properties, the Division of Highways has developed an additional alternative for the US 340 improvement project. This alternative, Alternative 8, is located west of the railroad tracks and avoids any direct physical impacts to resources listed in or eligible for listing in the National Register of Historic Places.

Submitted for our review is a preliminary effects determination report for Alternative 8. DOH's rudimentary effects evaluation for Alternative 8 claims that none of the historic resources will be adversely effected by the new alignment while there will be *No Adverse Effect* to the Kabletown Rural Historic District, Olive Boy Farm, Ripon Lodge, and William Grubb Farm. The undertaking is considered to have *No Effect* on the remaining properties. We accept these findings. However, it should be noted that our judgement is **preliminary** and a more comprehensive Criteria of Effects report for Alternative 8 is necessary. This more detailed report must consider secondary and cumulative impacts associated with the project such as visual effects, auditory increases, and the potential for induced construction due to the road improvement. We look forward to reviewing the Criteria of Effects evaluation once complete.

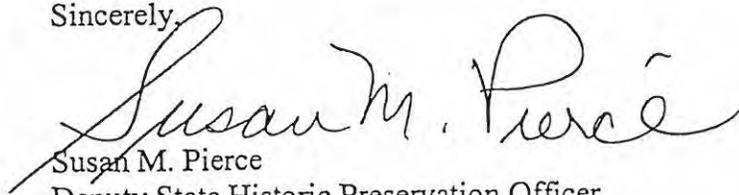
Archaeological Resources:

We look forward to reviewing the results of Phase I archaeological survey, and will provide comment and recommendations upon receipt of a completed report.

Mr. James Sothen  
US 340 - Belvedere Farm  
November 9, 2000  
Page 2

*We appreciate the opportunity to be of service. If you have questions regarding our comments or the Section 106 process, please contact Marc Holma, Senior Structural Historian for Review and Compliance, or Joanna Wilson, Senior Archaeologist, at (304) 558-0220.*

Sincerely,

A handwritten signature in cursive script that reads "Susan M. Pierce". The signature is written in dark ink and is positioned above the typed name and title.

Susan M. Pierce  
Deputy State Historic Preservation Officer

SMP:mh/jlw



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SEP 06 2001

COMMONWEALTH of VIRGINIA ENGINEERING DIVISION  
WV DOH

Department of Historic Resources

2801 Kensington Avenue, Richmond, Virginia 23221

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Director

James S. Gilmore, III  
Governor

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Secretary of Natural Resources

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August 31, 2001

Mr. James Sothen  
WV Department of Highways  
1900 Kanawha Blvd., East  
Building 5  
Room 110  
Charleston, West Virginia 25305-0430

Re: US Route 340 Improvements  
Clarke County, Virginia  
DHR File # 2001-1133

Dear Mr. Sothen:

We have received your request for our comments on the referenced project. It is our understanding that the West Virginia Department of Highways is proposing to undertake improvements to a 0.4-mile portion of US Route 340 in Clarke County, Virginia. These improvements involve the widening of the existing two-lane facility in order to accommodate four-lanes for vehicular traffic.

Two known resources listed in the National Register of Historic Places are within the subject project's Area of Potential Effect (APE). These resources are the Long Marsh Run Rural Historic District and Balclutha Farm.

The planned improvements will take place within the existing right-of-way and not require any acquisition of land from either Balclutha Farm or the Long Marsh Run Rural Historic District. Additionally, from an August 31, 2001 telephone conversation with Mr. Michael Wilson, West Virginia Division of Highways, Environmental Section, we understand that the new lanes will not be raised above the current profile. Therefore, we determine that the undertaking will have No Adverse Effect on the historic Balclutha Farm or the Long Marsh Run Rural Historic District.

Sincerely,

Marc Holma, Architectural Historian  
Division of Resource Services and Review

cc: Mr. Anthony Opperman  
Ms. Kitty Houston

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