US 113 North/South Study

Ellendale Area

Environmental Assessment

Sussex County, Delaware

September 2010

FEDERAL HIGHWAY ADMINISTRATION

DELMAR DIVISION

US 113 North/South Study
Ellendale Area
From South of Hudson Pond to East Redden Road/Deer Forest Road Intersection

Sussex County, Delaware

ADMINISTRATIVE ACTION

ELLENDALE AREA
ENVIRONMENTAL ASSESSMENT

UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
and
DELAWARE DEPARTMENT OF TRANSPORTATION

Submitted Pursuant to: 42 U.S.C. 4332(2)(c); 49 U.S.C. 303
23 U.S.C. 128 (a) and CEQ Regulations (40 CFR 1500 et. seq.)

Approved for advertisement of availability for public review and comment:

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Hasharaf — 9/13/10

HASSAN RAZA — Date
DIVISION ADMINISTRATOR
FEDERAL HIGHWAY ADMINISTRATION, DELMAR DIVISION

A. ADMINISTRATIVE ACTION

Federal Highway Administration

(X) Environmental Assessment
( ) Draft Environmental Impact Statement
( ) Final Environmental Impact Statement
( ) Finding of No Significant Impact
( ) Section 4(f) Evaluation

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I. PURPOSE AND NEED

A. Background

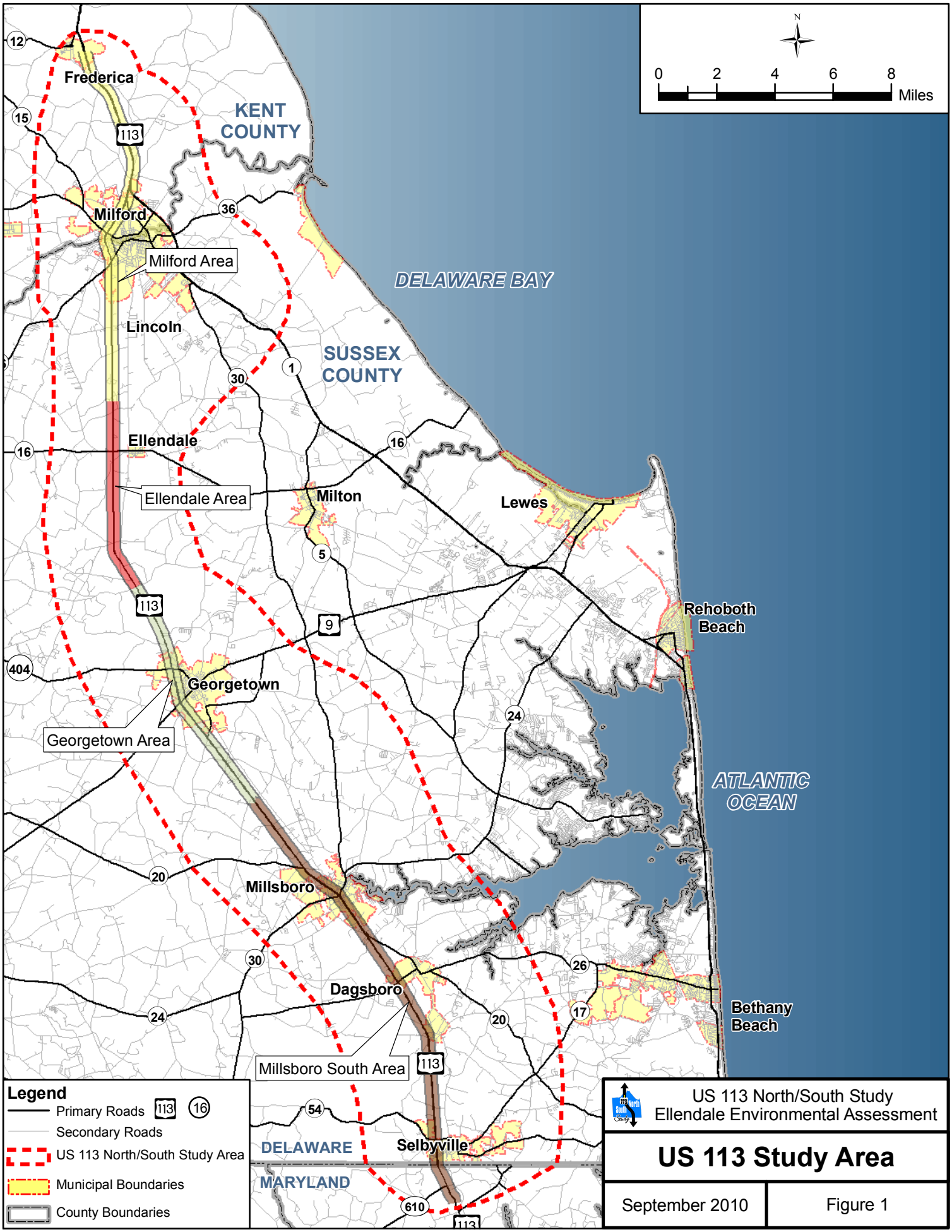
The Ellendale area of the US 113 North/South Study is located in Sussex County, Delaware. In the mid-1990s, this section of US 113 between Milford and Georgetown was widened and dualized from two lanes to four lanes to address safety concerns. In July 2001, the Delaware Department of Transportation (DelDOT) responded to a December 2000 legislative request (Senate Resolution #20) by preparing the *Sussex County North-South Transportation Feasibility Study*. The study concluded that a major north-south highway to provide additional roadway capacity through Sussex County was feasible, and recommended that a project be initiated to determine the location of a corridor "with an emphasis on converting the existing alignment into a limited access facility." The Feasibility Study found, based on environmental effects and ability to serve local traffic, the US 113 Corridor was the most reasonable location for the new roadway.

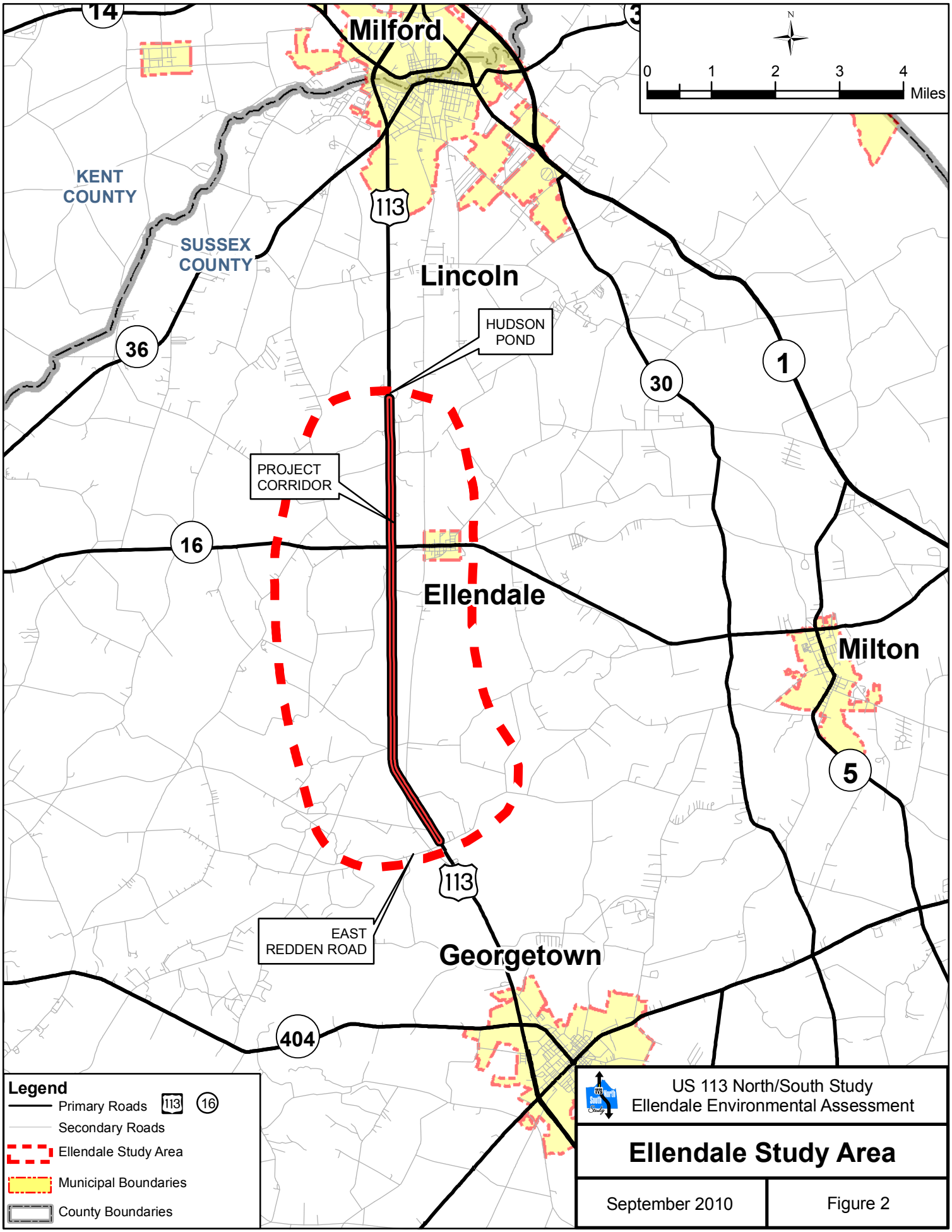
In 2004, DelDOT initiated the US 113 North/South Study to evaluate options to upgrade existing US 113. As part of this study, initially three, and later four projects, each with independent utility and logical termini, were identified by the project team: Milford, Ellendale, Georgetown, and Millsboro-South. Together, these four independent projects form a 45 mile corridor beginning at State Road (SR) 1 south of Frederica and extending to the Delaware/Maryland state line in Selbyville (**Figure 1**). This document addresses the Ellendale portion of the US 113 North/South Study. The independent projects are of sufficient length to address environmental matters on a broad scope; address specific elements of need and are a reasonable expenditure of funds; and allow for consideration of alternatives for foreseeable future transportation improvements.

B. Study Area

As established in the *Logical Termini Report* prepared by DelDOT in December 2004 and reviewed by the Federal Highway Administration (FHWA), the Ellendale study area includes approximately seven miles of US 113 between a northern terminus south of Hudson Pond, to a southern terminus at the US 113/East Redden Road/Deer Forest Road intersection. For the purpose of evaluating existing environmental conditions, a study area has been established that extends 600 feet from either edge of the shoulder along all proposed improvement areas (**Figure 2**). Project improvements extend 75 feet from the outer edge of the shoulder along US 113. US 113 generally travels north to south through the study area until just north of Old State Road/SR 213, where the roadway curves slightly east and continues southeast. As depicted in **Figure 2**, the Ellendale study area generally follows a north-south direction. In this area, US 113 is currently a four lane, median divided highway without access controls. The only traffic signal in the study area is located at the intersection of US 113 and SR 16. More detailed design is shown in **Appendix A**: **Alternative Plan Sheets**.

The study area is rural, consisting of primarily agricultural and forested land. About 70 percent of the land immediately adjacent to US 113 in the study area is wooded and is within various tracts of the Redden State Forest, owned and maintained by the Delaware Department of Agriculture's Forest Service. With the exception of the Town of Ellendale, which lies east of US 113 along SR 16, and the area adjacent to Hudson Pond, there are few residences or businesses along US 113 in the study area (see **Figure 2** and **Appendix A, No-build Sheets 1-3**).


N
0 2 4 6 8
Miles
Frederica
KENT COUNTY
Milford
Milford Area
DELAWARE BAY
Lincoln
SUSSEX COUNTY
Ellendale
Ellendale Area
Milton
Lewes
Rehoboth Beach
Georgetown
Georgetown Area
ATLANTIC OCEAN
Millsboro
Dagsboro
Millsboro South Area
Bethany Beach
Selbyville
DELAWARE
MARYLAND
12
15
113
36
30
1
16
5
9
404
24
20
26
17
54
610
Legend
Primary Roads
Secondary Roads
US 113 North/South Study Area
Municipal Boundaries
County Boundaries
US 113 North/South Study
Ellendale Environmental Assessment
US 113 Study Area
September 2010
Figure 1


Milford
Lincoln
Ellendale
Milton
Georgetown
KENT COUNTY
SUSSEX COUNTY
HUDSON POND
PROJECT CORRIDOR
EAST REDDEN ROAD
14
113
36
30
1
16
5
404
N
0 1 2 3 4
Miles
Legend
Primary Roads
Secondary Roads
Ellendale Study Area
Municipal Boundaries
County Boundaries
US 113 North/South Study
Ellendale Environmental Assessment
Ellendale Study Area
September 2010
Figure 2

C. Project Purpose and Need

1. Project Purpose

The purpose of the Ellendale project is to preserve and protect a corridor that would accommodate long-term transportation capacity needs along the US 113 Corridor; allow for improved safety; and accommodate future land development and economic growth in a manner that is consistent with legislative direction for a limited access facility. The regional transportation network is shown on **Figure 3**. The result would be an efficient transportation infrastructure that serves regional and seasonal traffic to points north and south while addressing future local traffic needs. Separating local from through traffic would help to facilitate the current, planned, and projected development in Sussex County and in municipalities along the US 113 Corridor.

2. Project Need

The need for the US 113 North/South Study is a result of expected future land development and economic growth in Sussex County and its municipalities, the increased use of the resort area in southeastern Sussex County (both in the summer and year round), and the projected increase in regional traffic traveling through the Delmarva Peninsula over the next 25 years. Together these factors result in the need to identify and protect a corridor to accommodate additional highway capacity.

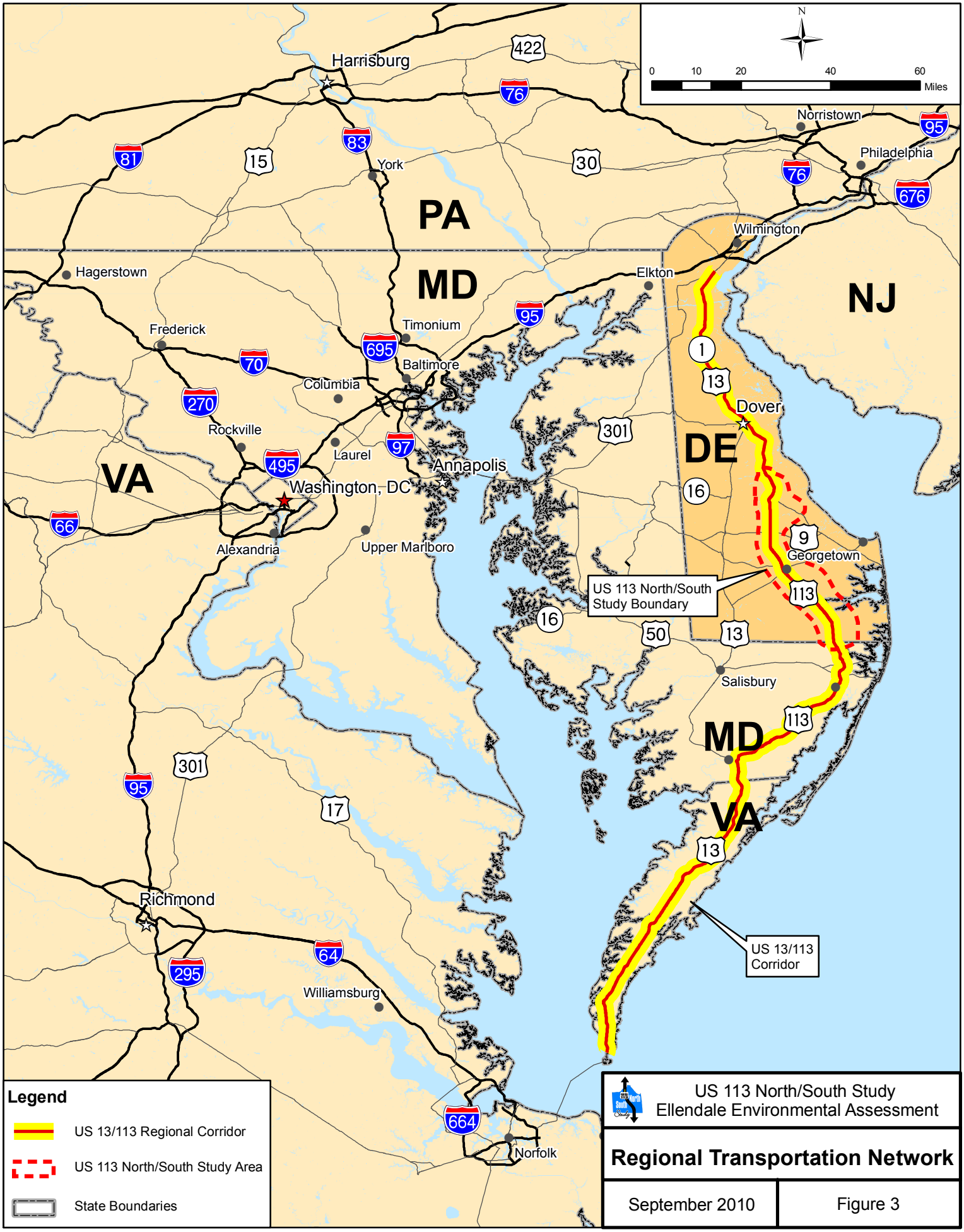
DelDOT has completed SR 1 from I-95 in New Castle County to south of the Dover Air Force Base, in Kent County, as a limited access highway. Planning is underway to convert the existing SR 1 corridor to limited access from the termination of the limited access portion of SR 1 in Kent County, to Five Points near Lewes, in Sussex County. The Maryland State Highway Administration is also pursuing efforts to convert the existing US 113 Corridor to limited access from the state line at Selbyville to US 13 in Pocomoke City, Maryland. The construction of the northern-most portion of US 113 in Maryland (from Berlin to the Delaware state line), was completed in 2005. The southern-most portion of US 113 in Maryland has been broken into five construction phases. Phase I was completed in 2006. Phase II-A is currently under construction with Phase II-B in final design. Phases III, IV, and V are at varying phases of design and construction will occur as funding becomes available in Maryland.

With the completion of the US 113 North/South Study in Delaware and the definition and FHWA approval of a limited access corridor from SR 1 in Milford to the state line in Selbyville, a limited access highway running north/south through three quarters of the Delmarva Peninsula from I-95 in New Castle County, Delaware to Pocomoke City in Maryland near the Virginia state line (approximately 130 miles) would become feasible (see **Figure 3**).

There are four specific needs that would be addressed by the US 113 Ellendale project: meeting growing traffic demand generated from existing and future development in the area; designation of a transportation corridor; consistency with local master plans for transportation systems; and compliance with legislative intent to provide a north-south limited access highway. These four needs are described in the subsequent paragraphs.

Traffic

As determined by the Traffic Analysis, between 1990 and 2005, average daily traffic volumes on US 113 in the Ellendale portion of the study area doubled from 8,000 to 16,000 vehicles per day (vpd). In 2030, average daily traffic is projected to increase to about 30,000 vpd (nearly twice the amount of traffic in 2005) and peak seasonal traffic would add an additional 12,333 vpd in 2030, a 40 percent increase. Therefore, peak seasonal traffic in 2030 will be over 42,000.


N
0 10 20 40 60
Miles
Harrisburg
422
76
83
81
15
York
30
PA
MD
NJ
DE
VA
Norristown
95
Philadelphia
76
676
Wilmington
Elkton
Hagerstown
Frederick
Timonium
695
70
Baltimore
Columbia
270
Rockville
Laurel
97
Annapolis
495
Washington, DC
66
Alexandria
Upper Marlboro
301
1
13
Dover
16
9
Georgetown
113
US 113 North/South
Study Boundary
50
Salisbury
17
Richmond
64
295
Williamsburg
664
Norfolk
US 13/113
Corridor
Legend
US 13/113 Regional Corridor
US 113 North/South Study Area
State Boundaries
US 113 North/South Study
Ellendale Environmental Assessment
Regional Transportation Network
September 2010
Figure 3

Existing and future traffic in the study area consists of a mix of local and regional travelers. In Maryland and Delaware SR 16 is used as an east-west route to the beach area. In the future, this mix will generate conflicts, especially for local travelers that are crossing US 113 or making turning movements onto or from US 113. The undesirable mix of regional and local traffic is expected to be exacerbated by new development which is likely to have direct local access onto US 113, thus creating additional conflict points and a greater occurrence of accidents. These added conflict points would generate delay for local travelers. Improvements made to US 113 would help to address the anticipated increase in daily traffic volume by improving connections to crossing roadways such as SR 16, E. Redden Road, and E. Robbins Road.

Preservation of Transportation Corridor

Development within Sussex County has been occurring at a substantial rate over the last decade, and it is expected to continue throughout the County and in the US 113 Corridor through the year 2030. Almost 21,000 new households and 7,500 jobs are projected between 2008 and 2030. These increases follow the significant growth in population and housing that Sussex County has experienced since the early 1990s. Sussex County and its municipalities have been experiencing an increase in land development at an unprecedented rate, while transportation infrastructure has lagged behind.

Approximately 50 percent of the additional traffic generated from these new homes and jobs will be carried by US 113. The growth in regional traffic of between 1 percent and 2 percent per year, and the increased seasonal demand at the Sussex shore, explain the large amount of anticipated growth in traffic on US 113 in the Ellendale area through the year 2030. Growth in Sussex County is predicted rise from about 192,000 in 2009 to 271,000 in 2030 (Delaware Population Consortium, 2009).

Relative to the rest of the US 113 Corridor, Ellendale is less developed; however, it is anticipated that substantial future development will occur in the Ellendale area. Delaware Plus Projects for 2008 and 2009 include large scale residential projects near the US 113 project area and Ellendale, such as Ingram Village, Shipbuilder's, and Forest Landing. Future similar developments will likely limit the ability to make future capacity improvements to US 113 without major impacts to social and economic resources. Therefore, it is anticipated that available land and right-of-way for the roadway improvements will become scarce.

Although large developments are being proposed in the central and western parts of Sussex County, the majority of new construction is planned in the eastern part of the county near the inland bays and coastal communities. Over 11,000 building permits were issued in the thirteen assessment districts in the eastern areas of Sussex County between 2003-2006. Large residential and commercial planned developments in Eastern Sussex County include Evans Farm, Deerbrook Subdivision, Moorings at Pepper Creek, Twin Cedars Apartments, Overbrook Town Center, Marsh Properties, Riverview, and Island Farms Subdivision. These proposed developments are located in the eastern section of Sussex County, particularly near the shoreline. Planned development within the study area is shown in **Appendix A, Alternative Plan Sheets**.

While the recent nationwide economic downturn has slowed growth throughout the Country, development in the eastern part of Sussex County is expected to remain a popular location for retirees, second homes, etc. Continued development in and around the project area is anticipated. Improvements to US 113 and access to connecting east-west corridors such as SR 16, would help to accommodate these and other imminent nearby developments, thus make for an efficient limited access transportation corridor that would link together burgeoning developments throughout Sussex County.

Consistency with Local Master Plans

The Sussex County Comprehensive Plan (updated June 2008) states that congestion on major north-south routes in Sussex County continues to grow and improvements to area mobility are needed to support growth and development. The Plan lists the US 113 North/South Study under future mobility-related actions.

Legislative Intent

In 2000, the Delaware State Senate, with the strong backing of the Sussex County government, adopted Senate Resolution No. 20, "calling upon the DelDOT to undertake the planning process for a new north-south limited access highway as an alternative to present routes SR 1, US 13, and US 113 through Sussex County." The Sussex County North-South Transportation Feasibility Study determined that a north/south limited access highway through Sussex County is feasible and recommended that the US 113 Corridor be studied for this purpose.

II. ALTERNATIVES

This section discusses alternatives considered, alternatives eliminated from further consideration, the Preferred Alternative, and related options which are carried forward, as well as the reasons for eliminating or retaining alternatives. The No-build Alternative is described below.

The term "Preferred Alternative" is only used to refer to the alternative and related options that have been carried forward from the alternatives and analysis process into detailed study in the Environmental Assessment (EA). The use of the term 'preferred' should not be interpreted to mean that DelDOT or FHWA has made any final decision regarding the project. This would occur upon FHWA issuance of a Finding of No Significant Impact (FONSI) for the project, in effect providing Location Approval for the project. Any decision on a Preferred Alternative would be made based on DelDOT review of public and agency comments on this EA and recommendations of a selected alternative to FHWA.

A. No-build Alternative (Alternative 1)

The No-build Alternative (Alternative 1) includes the existing network of roads, plus the currently programmed, committed and funded roadway projects. Programmed improvements included in DelDOT's Capital Transportation Plan (CTP) FY 2009- FY 2014 have been included as part of the evaluation of the No-build Alternative. The No-build Alternative assumes no construction on US 113 other than routine maintenance and repair. The No-build Alternative would not meet the purpose and need for this project because it:

- Does not address future traffic demand caused by anticipated development;
- Would maintain the existing US 113 configuration, and therefore not address conflicts between local and through traffic;
- Would not preserve a corridor for transportation use from surrounding development, and therefore would not be consistent with local master plans;
- Would not provide for a limited access facility and therefore would not be consistent with Delaware legislative intent for a limited access facility.

The No-build Alternative does provide a baseline condition with which to compare the other alternatives considered. As such, the No-build Alternative is retained for evaluation purposes. Aerial mapping showing baseline conditions of the Ellendale Study Area are included in **Appendix A, No-build Alternative Sheets 1-3.**

B. Build Alternatives

Four build alternatives were evaluated as part of the Ellendale US 113 study. Of these alternatives, the On-alignment Alternative has been identified as the Preferred Alternative. The other alternatives are not carried forward either because they do not meet the project purpose and need or they would result in substantial environmental effects.

1. Alternatives Eliminated from Further Study

Several alternatives have been eliminated from additional study based on coordination with the Ellendale Working Group and other stakeholders (discussed in **Chapter IV**), as documented in the project record.

Transportation System Management (TSM)

TSM activities maximize the efficiency of the present transportation system or reduce the demand for travel on the system through the implementation of low-cost improvements. Examples of TSM activities include ride sharing, van and carpooling, installation of park and ride facilities, encouragement of telecommuting, installation of high occupancy vehicle (HOV) lanes, introduction or enhancement of bike and pedestrian facilities, addition of turn lanes, signalization at intersections, and Intelligent Transportation Systems (ITS) measures such as traffic signal optimization.

TSM Alternatives, by their nature, do not include the addition of single occupancy vehicle (SOV) lanes and involve only minor work outside existing rights-of-way. Therefore, because of their limited scope, the different type of TSM improvements identified above will not satisfactorily address the purpose and need of the project as a stand alone alternative and eliminate the need to improve the roadway. Specifically, the TSM Alternative does not meet the purpose and need for this project because it:

- Proposes only small-scale improvements and therefore does not adequately address future traffic demand caused by anticipated development;
- Would maintain the existing US 113 configuration, and therefore not address conflicts between local and through traffic;
- Would not preserve a corridor for transportation use from surrounding development, and therefore would not be consistent with local master plans;
- Would not provide for a limited access facility and therefore would not be consistent with Delaware legislative intent.

Mass Transit

According to the 2000 US Census, less than one percent of workers 16 years and older in the study area use public transportation to commute to work. Transit service in Ellendale is provided by the DART (Delaware Authority for Regional Transit) and includes three routes in Sussex County that provide connection between Dover, Milford, Georgetown, Milton, Lewes, Rehoboth, Seaford, Bridgeville, and Laurel. The project area is rural, therefore mass transit would not generate sufficient ridership to be cost effective. The Mass Transit Alternative does not meet the purpose and need for this because it:

- Would not provide appropriate service for an area with low-density development, and therefore would not adequately address future traffic demand;
- Would maintain the existing US 113 configuration, and therefore not address conflicts between local, through, and seasonal traffic;
- Would not provide for a limited access roadway facility and therefore would not be consistent with Delaware legislative intent.

Third Lane, Alternative 2

This alternative involves the addition of a third through lane in each direction along US 113 to provide additional capacity. An additional northbound lane would be added in the median and an additional southbound lane would be added on the outside of the existing southbound lanes. No additional right-of-way would be required to accomplish the widening. Additional right-of-way for the future grade separation of US Route 113 and SR 16 would be preserved.

This alternative does not meet the purpose and need for the project. Although it would provide additional capacity, it would not limit the increase of conflict points resulting from future development, and thus would not address future traffic or safety needs. Furthermore, this alternative would not meet the legislative intent of Senate Resolution #20 to provide a limited access facility. Specifically Alternative 2 has been eliminated from further consideration because it:

- Would maintain all traffic on the primary US 113 lanes, and therefore not address conflicts between local and through traffic; and
- Would maintain local access at intersections and driveways, and therefore would not be consistent with legislative direction for a limited access facility

Details of the build alternatives eliminated from further study may be found in the project files or on the project website maintained by DelDOT.

Close-in Western Bypass, Alternative 3

This alternative involves the preservation of a corridor to construct and realign approximately 6,000 feet of US 113 to the west of existing US 113, north and south of SR 16. Approximately 1,400 feet south of the intersection of Sharons Road with US 113, the mainline would leave the existing alignment and continue in a northwesterly direction to bypass the intersection of US 113 and SR 16. The realigned US 113 would cross over SR 16 about 800 feet west of the existing US 113/SR 16 intersection. After traveling for approximately 3,000 feet in a north-northeasterly direction, the northbound lanes of the bypass would tie into the existing southbound lanes and new southbound lanes would be constructed to the west of the existing southbound US 113.

Existing northbound US 113 from Sharons Road to Hudson Pond would be converted into a two-way local access road to provide access to the properties on the east side of existing US 113. Access to the new southbound US 113 would be provided by a series of ramps connecting SR 16 to the mainline. At the location where the US 113 mainline leaves the existing alignment and continues northwest, an off-ramp is provided from the northbound lanes for traffic exiting the bypass. Access to the new northbound US 113 would be provided by means of a ramp located along existing US 113 approximately 1,000 feet north of the existing intersection of US 113 with SR 16. As with the On-alignment options, VFW Road would be realigned and extended to SR 16. All other aspects of this alternative would be the same as the On-alignment Alternative, Alternative 5, described below.

Although Alternative 3 would meet the purpose and need for the project, it has been eliminated from further review because it would build a new facility where no roadway exists today. Therefore, it would have high right-of-way and environmental impacts, particularly to forest, agricultural lands, forested wetlands, Waters of the US, and agricultural areas (refer to **Table 2** in **Chapter III**). Details of the build alternatives eliminated from further study may be found in the project files maintained by DelDOT.

Far Western Bypass, Alternative 4

This alternative involves preservation of a corridor to construct and realign approximately two miles of US 113 to the west of existing US 113, north and south of SR 16. Where Maple Branch crosses under existing US 113, the mainline would leave the existing alignment and continue in a northwesterly direction to bypass the intersection of US 113 and SR 16. The realigned US 113 would cross over SR 16 approximately one half mile west of the existing US 113/SR 16 intersection. After traveling for approximately one mile in a north-northeasterly direction, the

northbound lanes of the bypass would tie into the existing southbound lanes and new southbound lanes would be constructed to the west of existing southbound US 113.

Access to the new southbound US 113 would be provided by a series of ramps connecting SR 16 to the mainline. Where the US 113 mainline leaves the existing alignment and continues northwesterly, an off-ramp would be provided from the northbound lanes for traffic exiting the bypass. Access to the new northbound US 113 would be provided by means of a ramp located along existing US 113 approximately 3,000 feet north of the existing intersection of US 113 with SR 16. VFW Road would be realigned to bridge over the new limited access US 113 and tie back into existing northbound US 113. Existing northbound US 113 from this point north would be converted into a two-way local access road to provide access to the properties on the east side of existing US 113. All other aspects of this alternative would be the same as the On-alignment Alternative (described below).

Although Alternative 4 would meet the purpose and need for the project, it has been eliminated from further review because it would build a new facility where no roadway exists today. Therefore, it would have high right-of-way and environmental impacts, particularly to forest, agricultural lands, forested wetlands, Waters of the US, and agricultural areas (refer to **Table 2** in **Chapter III**). Details of the build alternatives eliminated from further study may be found in the project files maintained by DelDOT.

2. Preferred Alternative

On-alignment, Alternative 5

Alternative 5 would preserve a corridor for two new limited access lanes immediately west of the existing alignment of US 113, beginning south of Staytonville/Fleatown Road and ending at a point just south of VFW Road. Under this alternative, the typical section for the northern portion of the Ellendale study area (Staytonville/Fleatown Road) would include the addition of two new travel lanes west of the existing travel lanes. The new lanes would become southbound limited access US 113. The existing southbound lanes would become northbound limited access US 113 and the existing northbound lanes would be converted to a two way frontage road providing access for the homes and businesses along the east side of the existing roadway. The typical section for the remainder of the Ellendale study area (south of VFW Road) will remain as it is today. Refer to **Appendix A**, **Preferred Alternative Sheets 1-3**, for details.

North of Staytonville/Fleatown Road, right-of-way would be obtained for a local access road along US 113 to connect realigned Deerwood Road and would intersect realigned Fleatown Road as a T-intersection approximately 900 feet northeast of the intersection of Staytonville Road and US 113. Curtdogg Road would be realigned and extended to the west ending with a cul-de-sac just east of US 113. This network of roads substantially decreases the number of impacted properties in Tessie Maringola Estates located between Curtdogg Road and US 113 and reduces the impact to Swamp Pink habitat caused by previously considered options. Refer to **Appendix A**, **Preferred Alternative Sheets 1-3**, and **Chapter III** for further details on Swamp Pink habitat.

South of Ellendale, the crossover at the intersection of US 113 and Robbins/Maple Branch Roads would be removed and right-in/right-out access would be provided to northbound US 113 for Robbins Road and southbound US 113 for Maple Branch Road. Old State Road, SR 213, would be realigned to bridge over mainline US 113. At this location, a frontage road on the east side of US 113 would be constructed to provide access for the properties lying east of US 113 and fronting northbound US 113. East Redden Road would be realigned to the north, bridged over

US 113 and tied into Redden Road west of US 113. Access ramps to northbound and southbound US 113 would tie into the overpass, providing a partial clover-leaf interchange at this location. The typical sections for the Preferred Alternative (Alternative 5) are shown on **Figure 4: Sheets 1, 2 and 3**. Sheet 1 depicts the existing northbound and southbound US 113, Deer Forest Road to realigned VFW Road, between stations 100+00 through 327+00. Sheet 2 depicts the typical sections for realigned VFW Road to the SR 16 interchange between stations 327+00 through 365+00 and stations 390+00 through 420+00. Sheet 3 depicts typical sections for the SR 16 interchange between 365+00 and 390+00. (Refer to **Appendix A, Preferred Alternative Plan Sheets** for project stations.)

After a series of Public Workshops, six meetings with the Ellendale Area Working Group, several reviews by resource and regulatory agencies, and other analysis by the project team, it was decided to carry forward Alternative 5 as the project's Preferred Alternative. The Preferred Alternative includes SR 16 Interchange Option 1 or 2 (described below). Alternative 5 best meets the project purpose and need by addressing traffic, and land use concerns while also meeting the intent of the General Assembly's legislative action. It will improve safety and provide the capacity that will be needed to accommodate the traffic associated with the population, employment and residential growth anticipated through the year 2030 and beyond.

Furthermore, Alternative 5 minimizes impacts to the environment largely through utilizing existing right-of-way. This alternative provides the opportunity to preserve the capacity of the existing highway infrastructure with minimal roadway construction, and as discussed later in this document, with minimal environmental impact. Upon location approval by FHWA, On-Alignment Alternative 5 would be selected as the approved alternative for future US 113 improvements. This would include development of project design and advanced right-of-way acquisition as needed to preserve a state-owned corridor for future transportation use.

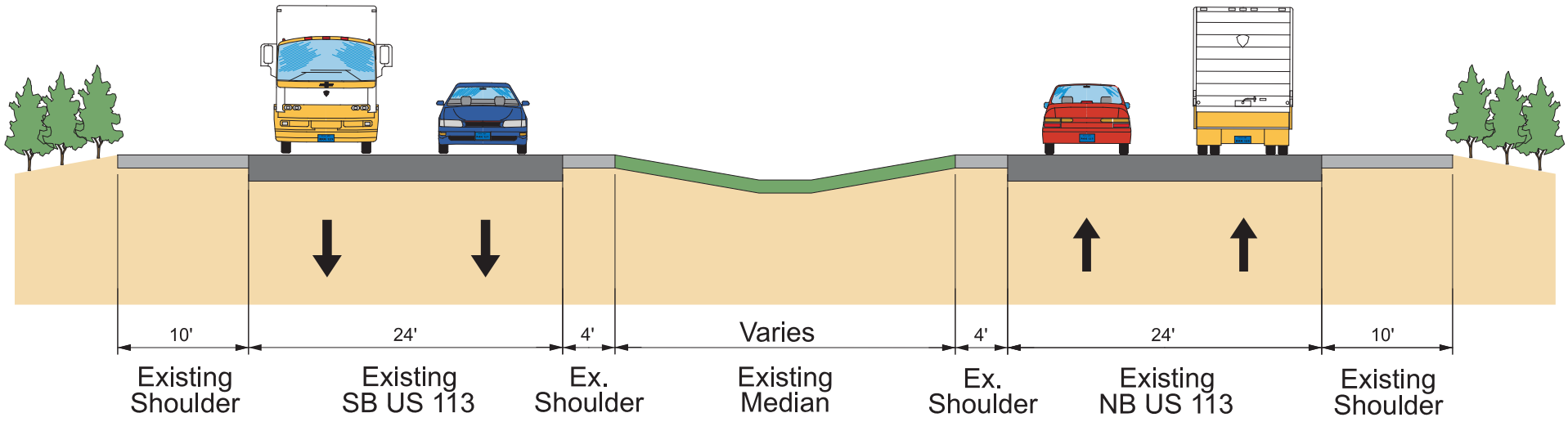
SR 16 Interchange Options 1 and 2

Two grade-separated interchange options for the existing US 113/SR 16 intersection (Interchange Options 1 and 2) are being carried forward with Alternative 5 for further consideration.

Interchange Option 1: SR 16 Interchange Option 1 would preserve right-of-way to construct a diamond interchange at the US 113 and SR 16 intersection. The alignment of SR 16 would be shifted to the north to allow for traffic operations to be maintained at the existing SR 16/US 113 intersection during the early phases of the interchange construction. The SR 16 and US 113 signalized intersection would be removed. The existing northbound US 113, as described earlier, would be used as a service road to provide access to the properties fronting the east side of existing US 113. North of the interchange area, the frontage road would be realigned to tie into realigned SR 16. South of the interchange area, the frontage road would be cul-de-saced on both ends and access would be provided through Sharons Road to SR 16. West of US 113, VFW Road would be realigned and extended north along the mainline, to intersect with realigned SR 16. Refer to **Appendix A, Preferred Alternative Sheet 3, SR 16 Interchange Option 1.**

Interchange Option 2: SR 16 Interchange Option 2 would be similar to Option 1, except that right-of-way for a partial cloverleaf interchange would be preserved. Access to the on and off ramps providing access to and from northbound US 113 would be provided from this section of the frontage road. A southbound off-ramp and a loop ramp from SR 16 to southbound US 113 would provide full access from southbound US 113 to SR 16 and vice versa. VFW Road would be treated the same as in Interchange Option 1 (realigned and extended to the realigned SR 16). The frontage road south of SR 16 would retain its connection to Sharons Road, and would retain a connection to existing SR 16 east of US 113. Refer to **Appendix A, Preferred Alternative Sheet 3, SR 16 Interchange Option 2.**

EXISTING NB & SB US 113
DEER FOREST ROAD TO REALIGNED VFW ROAD
STATIONS 100+00 - 327+00



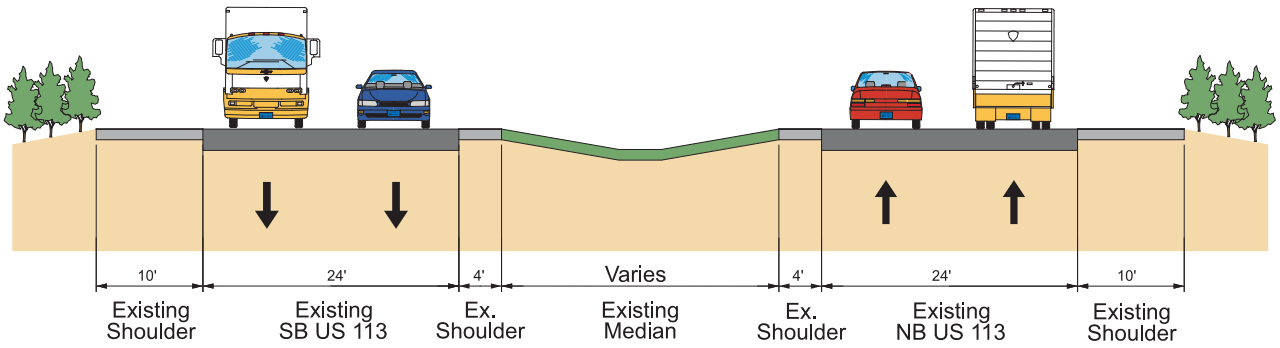
*Existing Right Of Way Varies Between 230'-240'

US 113 North/South Study
Ellendale Environmental Assessment

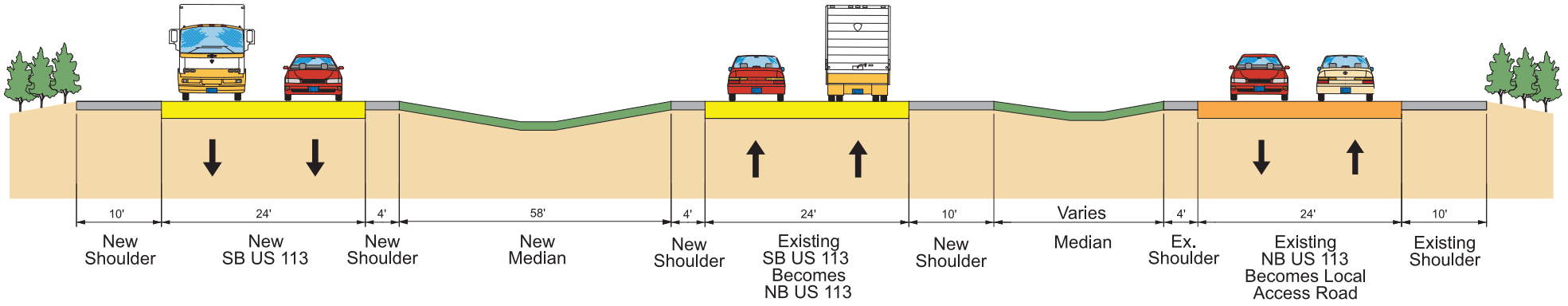
Typical Section

September 2010 | Figure 4 : Sheet 1

EXISTING NB & SB US 113



REALIGNED VFW ROAD TO SR16 INTERCHANGE
STATIONS 327+00 - 365+00 AND STATIONS 390+00 - 420+00



*Existing Right Of Way Varies Between 230'-240'

*All Proposed Mainline Improvements Are Within The Existing Right Of Way.

*Access Control Along US 113 May Require Property Acquisition.

US 113 North/South Study
Ellendale Environmental Assessment

Typical Section

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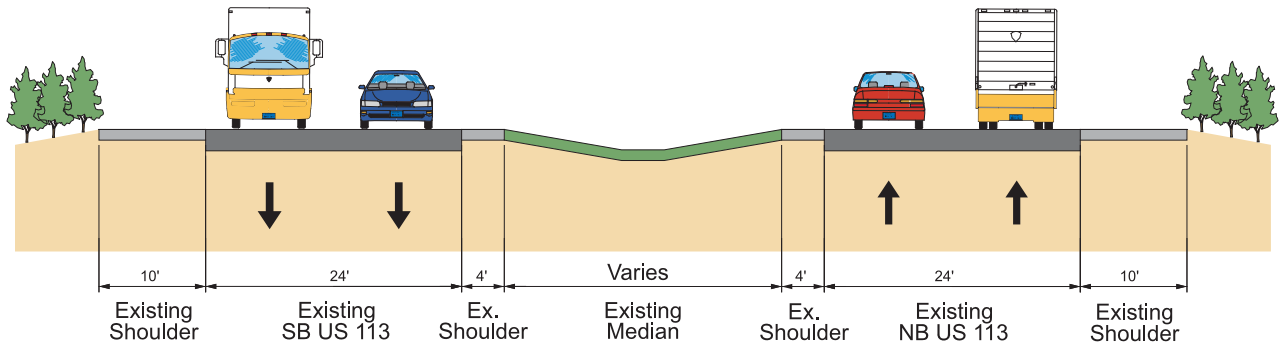
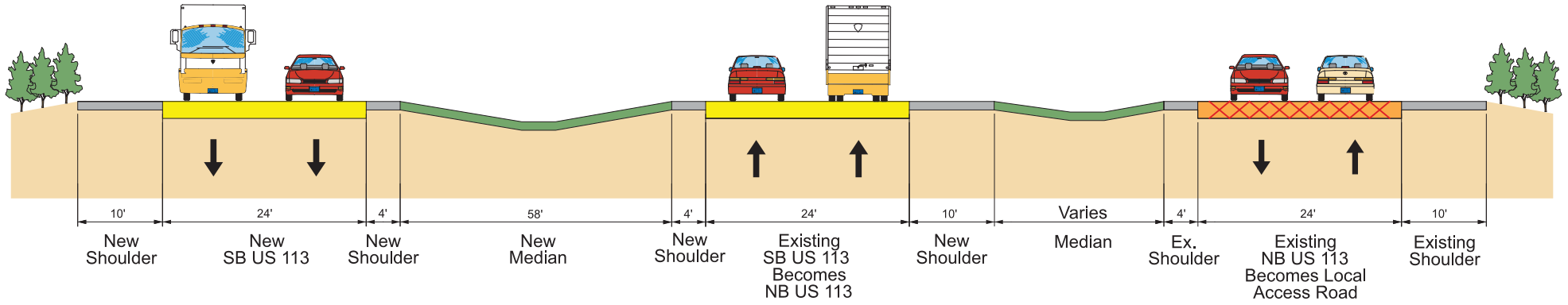
EXISTING NB & SB US 113



SR16 INTERCHANGE
STATIONS 365+00 - 390+00



*Existing Right Of Way Varies Between 230'-240'.

*All Proposed Mainline Improvements Are Within The Existing Right Of Way.

*Access Control Along US 113 May Require Property Acqusition.

US 113 North/South Study
Ellendale Environmental Assessment

Typical Section

September 2010 | Figure 4 : Sheet 3

The selection of a preferred interchange option at US 113 and SR 16 has been deferred under agreement with the Town of Ellendale. This verbal agreement concluded that when the existing at-grade intersection of US 113/SR 16 reaches capacity and requires a grade separation, DelDOT, through their normal planning processes would work with the Town of Ellendale to develop a grade separation that also serves as a western "gateway" to the town. It is anticipated that the need for these intersection improvements would be several years in the future. Because traffic needs and patterns that exist today would likely change in the future, grade separation design could be determined at a later date, when needed. As the need for a grade separation of the US 113/SR 16 intersection becomes imminent, DelDOT will work with the Town of Ellendale on the design process to develop an interchange which will serve as a gateway to the Town.

The cost of the Preferred Alternative would be approximately $70-75 million, depending on the interchange option selected. Interchange Option 1 is estimated to cost $70 million. The clover leaf interchange (Option 2) is slightly more expensive to construct and is estimated to cost $75 million.

A comparison of the alternatives' ability to address various elements of the Purpose and Need for the project, is provided in **Table 1**.

Table 1. Alternatives Comparison for Meeting Project Purpose and Need

Purpose and Need	No-build Alternative 1	TSM	Mass Transit	Third Lane, Alternative 2	Close-in Western Bypass, Alternative 3	Far Western Bypass, Alternative 4	On-Alignment, Alternative 5
Addresses Future Traffic				✓	✓	✓	✓
Accommodates Future Land Development or Economic Growth					✓	✓	✓
Preserves Transportation Corridor				✓	✓	✓	✓
Consistent with Master Plan				✓	✓	✓	✓
Provides Limited Access Highway					✓	✓	✓
Separates Local and Through Traffic					✓	✓	✓

✓ = *Satisfies the identified project Purpose and Need*

III. IMPACTS

This section details the environmental features of the Ellendale study area that would potentially be impacted by the implementation of the Preferred Alternative.

The overall study area is defined by a boundary located approximately 1,000 feet to the east and west of US Route 113, from Hudson Pond to East Redden Road (see **Figure 2 in Chapter I)**. In the Ellendale study area the focus is on the existing US 113 Corridor and areas immediately adjacent to it (see **Figure 2**). Environmental impacts were calculated using the proposed right-of-way for the Preferred Alternative, which assumes a 75-foot offset from the edge of shoulder along the mainline and a 40-foot offset from the centerline along local roads (see **Appendix A, Preferred Alternative Sheets 1-3**).

For comparative purposes, **Table 2** provides a summary of the potential impacts for the alternatives evaluated for the project. These include the No-build Alternative, Third Lane Alternative 2, Close-in Western Bypass Alternative 3, Far Western Bypass Alternative 4, and both On-alignment Preferred Alternative Options (see **Chapter II**).

A. Socioeconomic Environment

1. Right-of-Way Relocations and Acquisitions

The US 113 Corridor between Milford and Georgetown is rural in nature, consisting primarily of agricultural and forested lands (see **Appendix A, No-build Alternative Sheets**). The Town of Ellendale, which lies east of US 113 roughly equidistant from Milford and Georgetown (see **Figure 1**), is largely a residential community consisting of 128 housing units (2000 Census). These dwellings are primarily full time places of residence, generally located around the intersection of SR 16 and the Norfolk Southern Railroad alignment. SR 16 runs east-west through the Town of Ellendale. The Norfolk Southern Railroad runs north-south through the town, parallel to the US 113 Corridor.

The Ellendale portion of the US 113 Corridor remains largely undeveloped. This is due in part to the close proximity of the Redden State Forest and other privately owned and maintained wooded parcels adjacent to US 113. Development is also impeded by the lack of sewers throughout the entire area and the low (wet) nature of the surrounding ground.

When US 113 from Milford to Georgetown was widened from two to four lanes in the mid-1990's, that expansion occurred on the east side of the existing right-of-way in the US 113 Corridor from Milford to the vicinity of the intersection of Old State Road and US 113. As a result, additional state-owned right-of-way exists on the west side of the existing roadway, which is relatively undeveloped.

From south of Hudson Pond to SR 16, on the west side of US 113 is the former site of the Deluxe Dairy Market (proposed site of Royal Farms), two residences and a fruit stand along US 113, and two homes in the northwest corner of the US 113/SR 16 intersection. Between SR 16 and VFW Road to the south, there is a farmstead and a home that lie more than 800 feet west of US 113 and a cellular tower. From VFW Road to Maple Branch Road, there is one residence. From Maple Branch Road to the southern end of the project, there are three residences, one with several trailers behind it, a farm complex, and a church on the west side of US 113.

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Table 2: Ellendale Area Alternative Impact Matrix

	No-build Alternative 1	Third Lane Alternative 2	Close-in Western Bypass Alternative 3	Far Western Bypass Alternative 4	On-alignment Preferred Alt. 5 SR 16 Option 1	On-alignment Preferred Alt.5 SR 16 Option 2
Natural Resources						
Wetlands* (acres)	0	0.2**	0.8**	29.3**	1.1	1.1
Waters of the US* (linear feet)	0	53	5,700	7,400	5,700	5,400
Subaqueous Lands* (linear feet)	0	178	390	2,700	360	360
Forested Area*	0	1	24	28	21	21
Other Considerations						
State Resource Areas / Natural Areas (acres)	0	1.4	10.9	16.9	10.5	10.5
Agricultural Land*	0	0.4	164	145	105	115
Agricultural Districts, number (acres)	0	1 (0.1)	3 (1.9)	4 (1.8)	4 (1.8)	4 (1.8)
Agricultural Preservation Easements (number / acres)	0	0	0	0	0	0
Property Impacts / Access Rights						
Partial Acquisitions	0	0	31	37	27	27
Purchase of Access / Development Rights	0	0	10	10	10	10
Partial Acquisitions and Purchase of Access / Development Rights	0	0	8	8	20	17
Full Acquisitions	0	0	18	17	23	20
Residential	0	0	9	9	10	9
Commercial	0	0	1	1	4	3
Vacant Properties	0	0	8	7	8	7
Utility	0	0	0	0	1	1
Total Properties Impacted	0	0	67	72	80	74
Architectural Historic Properties						
Teddy's Tavern	No Impact	Yes	Yes	Yes	Yes	Yes
Ellendale State Forest Picnic Area	No Impact	Yes	Yes	Yes	Yes	Yes
McColley's Chapel	No Impact	Yes	No	No	Yes	Yes
ECW Camp S-53 Mess Hall	No Impact	Yes	No	No	Yes	Yes
Maringola Produce Stand	No Impact	Yes	Yes	No	No	No
Archaeological Resources Predictive Model						
Prehistoric Sensitivity, acres (%)						
High Sensitivity Area	0	0.02 (1%)	7.75 (9.3%)	24.7 (22.9%)	9.2 (10.3%)	9.3 (9.9%)
Moderate Sensitivity Area	0	2.31 (61%)	33.4 (40%)	47.1 (43.7%)	34.2 (38.3%)	37.9 (40.2%)
Low Sensitivity Area	0	1.43 (38%)	42.3 (50.7%)	36.8 (34.1%)	45.9 (51.4%)	47.1 (49.9%)
Slight Sensitivity Area	0	0	0	0	0	0
Early Historic Sensitivity, acres (%)						
High Sensitivity Area	0	0	0	0	0	0
Moderate Sensitivity Area	0	0.57 (99%)	1 (96%)	0.98 (2.9%)	1 (100%)	1 (100%)
Low Sensitivity Area	0	0.03 (1%)	0.04 (4%)	2.43 (71.1%)	0	0
Slight Sensitivity Area	0	0	0	0	0	0
Sites of Historic Sensitivity, # of locations						
Extant Sites	0	0	10	8	6	6
High Sensitivity Area	0	0	5	4	2	3
Moderate Sensitivity Area	0	0	1	1	0	0
Low Sensitivity Area	0	0	4	3	4	4

* Assumes interchange at SR 16
** A detailed wetland delineation was not performed

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On the east side of US 113, there are 26 residences from the northern terminus of the project, south of Hudson Pond, to Staytonville Road. There are 20 homes and five businesses between Staytonville Road and VFW Road. Between VFW Road and Robbins Road there are no homes or businesses.

The Ellendale State Forest Picnic Facility, a roadside rest area within the Redden State Forest, includes a pavilion and cooking grills and is located along this stretch of US 113. The picnic facility is discussed further in the Cultural Resources section of this EA. From Robbins Road to the southern terminus of the project area there are seven homes and one business.

The Preferred Alternative, takes advantage of the less-developed western side of the US 113 Corridor by shifting the southbound lanes primarily within the existing right-of-way on the west side of the corridor between Staytonville Road and VFW Road. In addition, by providing a frontage road on the east side of US 113 from Old State Road south, access impacts to residential and business properties that would otherwise be acquired (and/or relocated) are avoided.

The purchase of access and development rights associated with the Preferred Alternative would be used to preserve the capacity of portions of US 113 and ensure the ability to create a limited access roadway through this portion and the remainder of the study area. Many of the properties fronting this area of existing US 113 have points of access along roads other than US 113. Only the right of access to US 113 would be acquired from these properties. Properties that can only be accessed along US 113 will likely be acquired by DelDOT and thus are considered "full acquisitions".

Project-related relocations would result from the purchase of access and development rights for the transportation corridor. Relocations may also result due to space required for the grade separation at US 113 and SR 16. Property owners will be contacted regarding potential acquisitions, and will be fairly compensated for the required acreage. For those businesses that are subject to relocation, owners will be provided relocation assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended by the Uniform Relocation Act Amendments of 1987. These documents establish a uniform policy for the fair and equitable treatment of persons displaced as a direct result of programs or projects undertaken by a Federal agency or with Federal financial assistance. The primary purpose is to ensure that such persons shall not suffer disproportionate injuries as a result of programs and projects designed for the benefit of the public as a whole and to minimize the hardship of displacement on such persons. Right-of-way impacts in the Ellendale area are summarized in **Table 2**.

Alternative 5, SR 16 Option 1 would result in a total of 80 properties impacted including 23 full residential acquisitions/displacements (property to be fully acquired by DelDOT). Alternative 5, SR 16 Option 2 would result in a total of 74 properties impacted including 20 full residential acquisitions.

Commercial zoning along the existing US 113 Corridor should provide sufficient availability for replacement sites for the impacted businesses, should they choose to relocate in the area. Alternative 5, SR 16 Option 1 would result in a total of four impacted properties, while Option 2 would result in three impacted properties. Vacant residential and commercial lots, as well as properties currently for sale, will provide options for those home and business owners that are impacted and wish to stay in the area.

This project is not scheduled for construction in the foreseeable future; DelDOT is prepared to negotiate with property owners on a case by case basis after approval of a selected alternative by FHWA.

2. Neighborhoods and Community Facilities

Neighborhoods within the study area are rural in nature. The community of Ellendale contains several small neighborhoods to the east of US 113 along both the north and south sides of SR 16. Community cohesion and transportation linkages may be affected by the implementation of a build alternative because the roadway will be a limited access facility. Some transportation linkages that exist today may be altered or eliminated by the limited access facility. Direct access to some residences and businesses along US 113 would be eliminated (no right-in right-out movements); however, where possible, other points of access would be provided. Because nearly all of the residences and businesses within the Town of Ellendale are located east of US 113, the proposed limited-access roadway would not affect transportation routes within the area as the community would not be bifurcated.

There are several churches within the Ellendale study area. These churches include the Georgetown (Old Path's) Church of Christ, the New Shiloh Fire Baptized Holiness (FBH) Church of God, and the Mount Zion African Methodist Episcopal Church. A fourth church, the historic McColley's Methodist Church and cemetery, is located at the intersection of SR 40 and SR 213.

Three of four the church properties would be involved and impacted by the Preferred Alternative. They are the Georgetown (Old Path's) Church of Christ (located on southbound US 113 at the intersection of Redden Road, SR 40, and US 113), the New Shiloh FBH Church of God (located on Old State Road, SR 213), and the McColley's Methodist Church and cemetery (located at SR 40 and SR 213). Both the Georgetown (Old Path's) Church of Christ and the New Shiloh Fire Baptized Holiness (FBH) Church of God have frontage and access on US 113. They are also currently accessed by way of secondary roads. The access rights to frontage on US 113 would be acquired from both churches as a result of the implementation of any of the build alternatives.

The McColley's Methodist Church and cemetery would be involved and impacted by future traffic patterns. The associated impacts to this are discussed further in the Cultural Resources section of this EA.

None of the build alternatives, if implemented, would result in property acquisition or relocation, nor would the function or operation of the church facilities be impaired.

Ellendale is located within the Milford School District. There are no schools or other community facilities located within the study area.

3. Environmental Justice

According to Executive Order 12898 issued on February 11, 1994, environmental justice must be evaluated: "… to identify and address as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low income populations …" The US EPA's Environmental Justice guidelines further define environmental justice as "The fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic or socioeconomic groups should bear a disproportionate share of the negative environmental consequences…"

Environmental justice includes the evaluation of impacts to both low income and minority populations. The socio-economic profile of the affected area was analyzed using the most recent available information from the 2000 US Census.

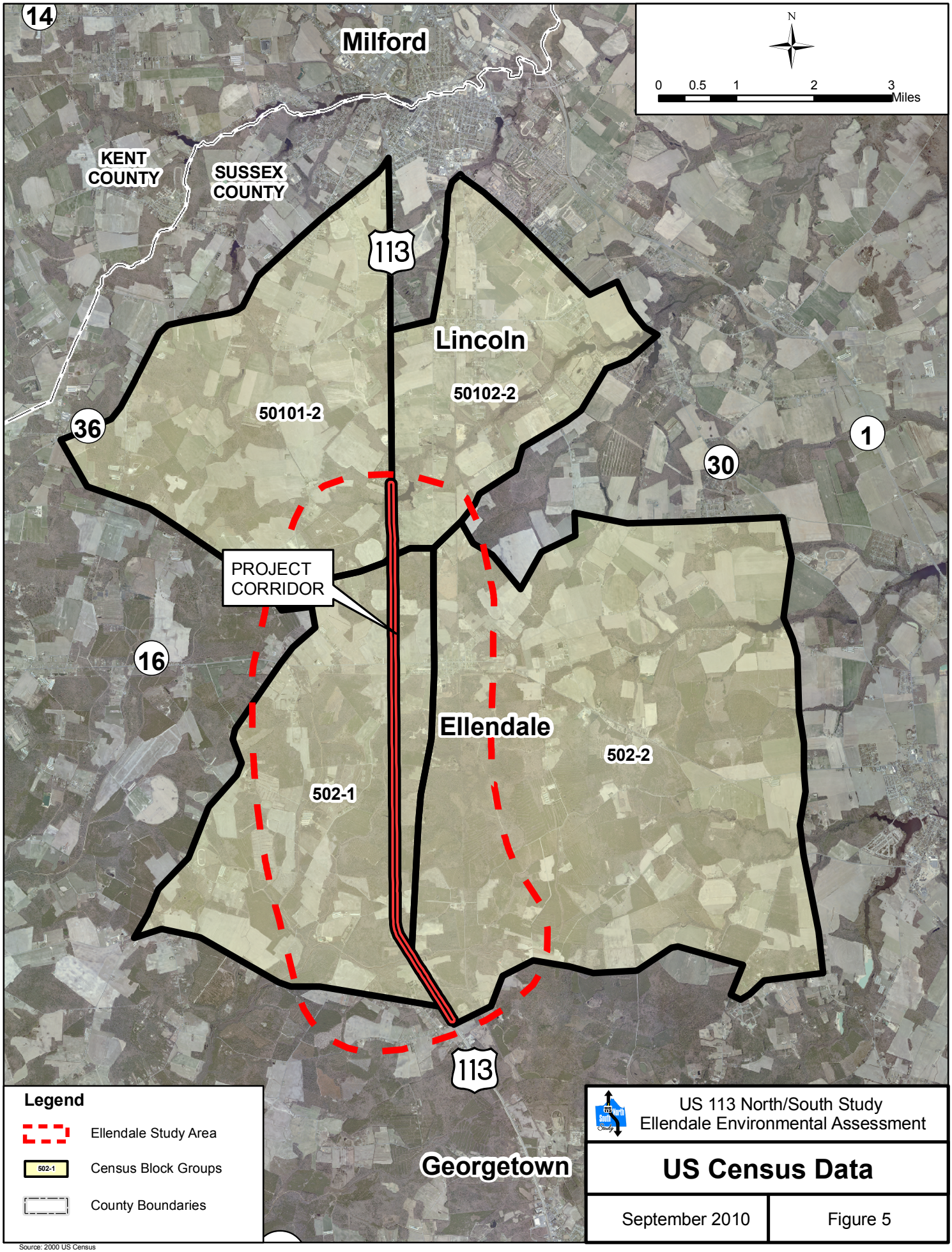
The Ellendale project is located within four block groups in Sussex County (block groups 502-1, 502-2, 50101-2, and 50102-2), shown on **Figure 5**. For the purpose of this socioeconomic analysis the study area encompasses the area covered by these four block groups. **Table 3** summarizes the socioeconomic characteristics of the Ellendale area.

Table 3: Socioeconomic Characteristics

	Delaware	Sussex County	BG 50101-2	BG 50102-2	BG 502-1	BG 502-2	Total Study Area
Demographics							
Total Population	783,600	156,638	1,500	2,762	799	2,010	7,071
White	584,773 (75%)	125,857 (80%)	1,293 (86%)	2,079 (75%)	466 (58%)	1,223 (61%)	5,061 (72%)
Black or African American	150,666 (20%)	23,319 (15%)	145 (10%)	557 (20%)	296 (37%)	696 (35%)	1,694 (24%)
American Indian / Alaskan Native	2,731 (<1%)	946 (<1%)	4 (<1%)	12 (<1%)	10 (1%)	12 (<1%)	38 (1%)
Asian	16,259 (2%)	1,172 (1%)	11 (1%)	13 (<1%)	1 (<1%)	2 (<1%)	27 (<1%)
Native Hawaiian / Pacific Islander	283 (<1%)	68 (<1%)	1 (<1%)	1 (<1%)	0	0	2 (<1%)
Other Race	15,855 (2%)	3,157 (2%)	34 (2%)	66 (3%)	13 (2%)	47 (3%)	160 (2%)
Two or More Races	13,033 (2%)	2,119 (1%)	12 (1%)	34 (2%)	13 (2%)	30 (1%)	89 (1%)
Total Racial Minority	198,827 (25%)	30,781 (20%)	207 (14%)	683 (25%)	333 (42%)	787 (39%)	2,010 (28%)
Hispanic or Latino	37,277 (5%)	6,915 (4%)	66 (4%)	138 (5%)	44 (6%)	77 (4%)	325 (5%)
Income							
Median household income in 1999	$47,381	$39,208	$38,250	$42,981	$40,000	$36,714	Average-$39,486
Percent below poverty level	9.2%	10.5%	7.4%	6.9%	10.0%	9.8%	Average-8.5%

Notes: Number (percent of total)
Shaded areas represent block groups with a higher percentage of Black or African American inhabitants and/or a higher percentage of Hispanic or Latino inhabitants than Sussex County.
Source: US Census 2000

The racial composition of Delaware is approximately 75 percent white, 20 percent black or African American, and 5 percent another race or two or more races. Sussex County has a slightly higher percentage of white residents (80 percent) and a lower percentage of minorities (15 percent black or African American and 5 percent another race or two or more races). The racial composition of the study area is approximately 72 percent white, 24 percent black or African American, and 4 percent another race or two or more races. Block groups 50102-2, 502-1, and 502-2 have a higher percentage of Black or African American inhabitants than Sussex County (15 percent).


14
Milford
N
0 0.5 1 2 3
Miles
KENT COUNTY
SUSSEX COUNTY
113
Lincoln
50102-2
50101-2
36
1
30
PROJECT CORRIDOR
16
Ellendale
502-2
502-1
113
Georgetown
Legend
Ellendale Study Area
502-1
Census Block Groups
County Boundaries
US 113 North/South Study
Ellendale Environmental Assessment
US Census Data
September 2010
Figure 5
Source: 2000 US Census

The US Census evaluates race separately from the Hispanic or Latino classification. Hispanic or Latino people may therefore identify race in addition to identifying themselves as Hispanic or Latino. Approximately 5 percent of the people in the area identify themselves as Hispanic or Latino. Block groups 50102-2 and 502-1 have a higher percentage of Hispanic or Latino inhabitants than Sussex County (4 percent).

The median household income in 1999 for the study area varied among block groups from $36,714 to $42,981. The average median household income in 1999 for the study area was nearly the same as the average for Sussex County and both were approximately $8,200 less than the average for the State of Delaware.

The build alternatives will not disproportionately or adversely impact any environmental justice population.

B. Cultural Resources

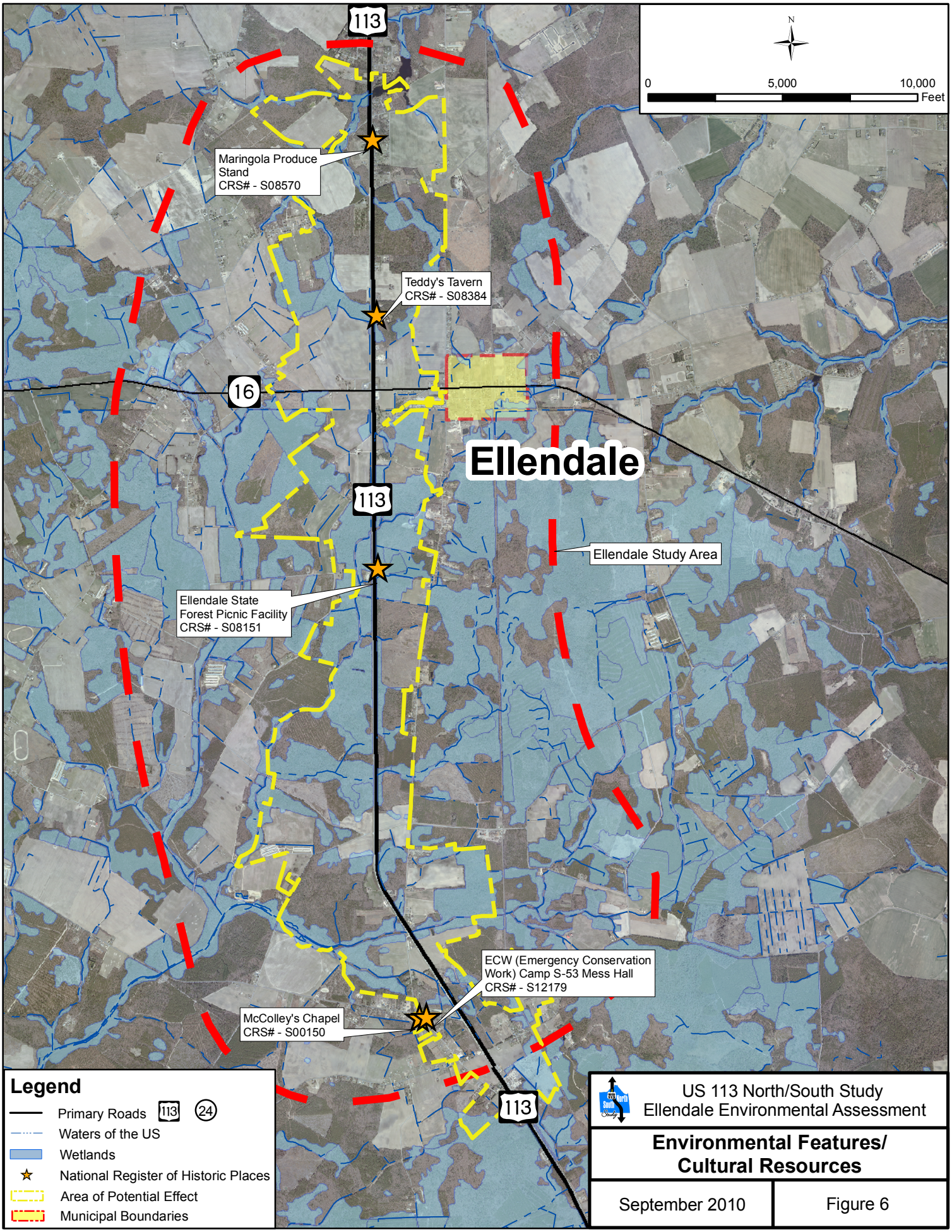
The below discussions within this section are intended to fulfill applicable requirements of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA). As such, this section will be recognized as implementing the regulations of the Advisory Council for Historic Preservation (ACHP) (36 CFR Part 800).

DelDOT, on behalf of the FHWA, notified the State Historic Preservation Officer (SHPO) and the ACHP in March 2009 correspondence, that it was the agencies' intent to use the National Environmental Policy Act (NEPA) process and 23 CFR 771.117 for purposes of Section 106 (per 23 CFR 800.8(c)) for the Ellendale project.

Based on investigations and coordination to date, historic architectural properties that are listed in or are eligible for listing in the National Register of Historic Places (National Register) have been identified within the Area of Potential Effect (APE). During stages of NEPA scoping, environmental analysis, agency coordination, and preparation of the EA, DelDOT has consulted with the SHPO about the project's effects on these historic properties. The public, including impacted or involved historic property owners, have been consulted with throughout the planning process (see **Chapter IV**). Finally, proposed measures to avoid, minimize, or mitigate the undertaking's effects on historic properties are included in this section or within other chapters of the EA. A Section 106 Memorandum of Agreement (MOA) has been developed (see **Appendix B**) to formalize Section 106 consultation, resolve adverse effects, and present a mitigation plan for all historic properties, including unidentified archaeological sites. The project has included outreach efforts to the federally recognized Native American and local tribes (see **Appendix C**). This has resulted in discussions with the Delaware Nation to include them as a consulting party for the project and the Section 106 MOA.

Background Including the Area of Potential Effects

Between April 2008 and June 2009 architectural properties in the Ellendale study area were evaluated for eligibility to be included in the National Register. In conjunction with this effort, the APE for all architectural resources has been defined. The APE is roughly defined within approximately 600 feet of all tax parcels of the Build alternative centerline (see **Figure 6**). The APE was further verified and adjusted when more specific project development measures became known and illustrated. Based on plan concepts of the Preferred Alternative, it is also presumed the same APE on **Figure 6** would adequately address the footprint of future archaeological studies (yet identified) that may occur in a staged identification approach. This APE does not include any offsite wetland mitigation areas, which would be defined later in time.


N
0
5,000
10,000
Feet
113
16
Maringola Produce Stand
CRS# - S08570
Teddy's Tavern
CRS# - S08384
Ellendale
Ellendale Study Area
Ellendale State Forest Picnic Facility
CRS# - S08151
ECW (Emergency Conservation Work) Camp S-53 Mess Hall
CRS# - S12179
McColley's Chapel
CRS# - S00150
Legend
Primary Roads
Waters of the US
Wetlands
National Register of Historic Places
Area of Potential Effect
Municipal Boundaries
US 113 North/South Study
Ellendale Environmental Assessment
Environmental Features/
Cultural Resources
September 2010
Figure 6

If any off-site wetland mitigation sites or other project changes are identified later in time, DelDOT is committed to update the APE, identify any future additional historic properties, and assess the project's effect on such properties, as provided for in the Section 106 MOA.

1. Architectural Resources

Identification and Evaluation

The identification and evaluation of architectural resources began in April 2008. Based on the project overview, National Register evaluations for the Ellendale APE area were then presented in a series of draft reports beginning May 2008. Comments from DelDOT and SHPO, as well as the identification of additional resources along revised alignment segments, resulted in several draft reports and submittals as supplements.

Beyond resource agency meetings and other individual office meetings, DelDOT, SHPO, and FHWA staff conducted field tours in August 2008, January 2009, and September 2009 to review and discuss the results of the evaluation-level study of architectural resources and reaffirm the APE. The September 2009 meeting, along with follow-up discussions and correspondence, also confirmed the Criteria of Adverse Effect applied to historic properties and discussed adverse effect minimization and mitigation measures on historic properties. The results of the architectural surveys are presented in the final Evaluation of National Register Eligibility for Architectural Properties in the Ellendale Study Area, US 113North/South Study dated August 2009 (http://www.deldot.gov/archaeology/us113_dual/n-s_ellendale/index.shtml).

A total of 68 individual properties subject to direct or indirect impact from the alternatives in the Ellendale study area were evaluated. The report concludes that two properties are listed on the National Register and three additional properties are National Register eligible. DelDOT and the SHPO concurred with eligibility determinations presented in the architectural reports.

Guidance on the National Register and the Criteria of Eligibility for distinguishing historic properties is included under: http://www.nps.gov/history/nr/publications/index.htm. Historic properties within the APE are listed below and are shown on **Figure 6.**

(1) *Teddy's Tavern (CRS# S08384),* located on the east side of US 113 near Redden State Forest, was listed on the National Register in 1991. The property was nominated under Criterion A as one of the few surviving service stations/roadside taverns remaining from the pre-1940 era in Delaware.

(2) *Ellendale State Forest Picnic Facility (CRS# S08151),* also located on the east side of US 113, was listed on the National Register in 1991. The property was nominated under Criterion C as the sole surviving example in Delaware of a 1930s rustic picnic rest area facility, but the nomination suggested that it may also be eligible under Criterion A.

(3) *McColley's Chapel (CRS# S00150),* located on the south side of Redden Road at its intersection with McColley's Chapel Road and eligible for listing on the National Register under Criterion C for architecture as a well-preserved example of a late 19th-century Methodist meeting house. The building meets the requirements of Criteria Consideration A for religious properties. During date of this EA, a nomination form is being prepared by the Sussex County Preservation Planner.

(4) *ECW Camp S-53 Mess Hall (CRS# S12179),* which now serves as a fellowship hall for McColley's Chapel and is located across the road from the chapel, is eligible for listing on the National Register under Criterion C for architecture as a rare surviving example of a Civilian

Conservation Corps (CCC) camp building. The building, which was moved to its current location from a Delaware State Forest CCC camp 1.5 miles to the west, meets the requirements of Criteria Consideration B for moved properties.

(5) *Maringola Produce Stand (CRS# S08570)* on the east side of US 113 north of Ellendale, is eligible for listing on the National Register under Criterion C as a rare surviving example of this once prevalent property type.

Architectural Property Effects

In accordance with the implementing regulations of Section 106, the criteria of adverse effect were applied to the five historic properties within the APE. An effect is defined as an "alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register" (36 CFR part 800.16(i)). The effect is adverse when the alteration of a qualifying characteristic occurs "in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative" (36 CFR 800.5(a)(1)).

Adverse effects on historic properties may include, but are not limited to:

(i) Physical destruction or damage to all or part of the property;
(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;
(iii) Removal of the property from its historic location;
(iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
(vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
(vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance (36 CFR Part 800.5 [a][2]).

The following is an evaluation of effect for each historic property in accordance with the Section 106 criteria of adverse effect and in coordination and consultation with the SHPO.

(1) Teddy's Tavern (CRS# S08384)

The Preferred Alternative at Teddy's Tavern includes construction of two new southbound travel lanes to the west of existing US 113. The current southbound lanes would be converted to northbound lanes and a two-way, local access road that dead-ends approximately 0.4 miles north of Teddy's Tavern would be constructed in place of the current northbound lanes. The local access road would be reached via a new interchange at SR 16, approximately one-half mile south of the property. There would be no property take from Teddy's Tavern under the Preferred

Alternative, and the project would therefore have no direct effect on this resource. Temporary Construction Easements may be utilized during final design to enhance or maintain existing entrances to the property. **Appendix A, Preferred Alternative Sheet 3** best illustrates the undertaking's effect on this property.

Indirect effects under 36 CFR 800.5(a)(2)(v) include changes in noise levels and visual components. This effect is not considered adverse or even applicable. Predicted existing, design year 2030 No-build Alternative, and design year 2030 Preferred Alternative build-condition loudest-hour equivalent traffic noise levels ($L_{eq(h)}$) were assessed at a representative receptor location of "frequent human use." As shown on **Figure 7**, the noise receptor for the Teddy's Tavern property was modeled at a location near the southwest corner of the building, in close proximity to the existing US 113 alignment.

The predicted loudest-hour equivalent traffic noise levels for existing conditions (75 dBA), 2030 No-build Alternative (78 dBA), and 2030 Preferred Alternative (76 dBA) are all greater than the 71 dBA FHWA Noise Abatement Criteria (NAC) traffic noise impact threshold for a commercial land use, as defined by and applicable, under the FHWA Guidelines for noise valuation as established in currently applicable 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise.

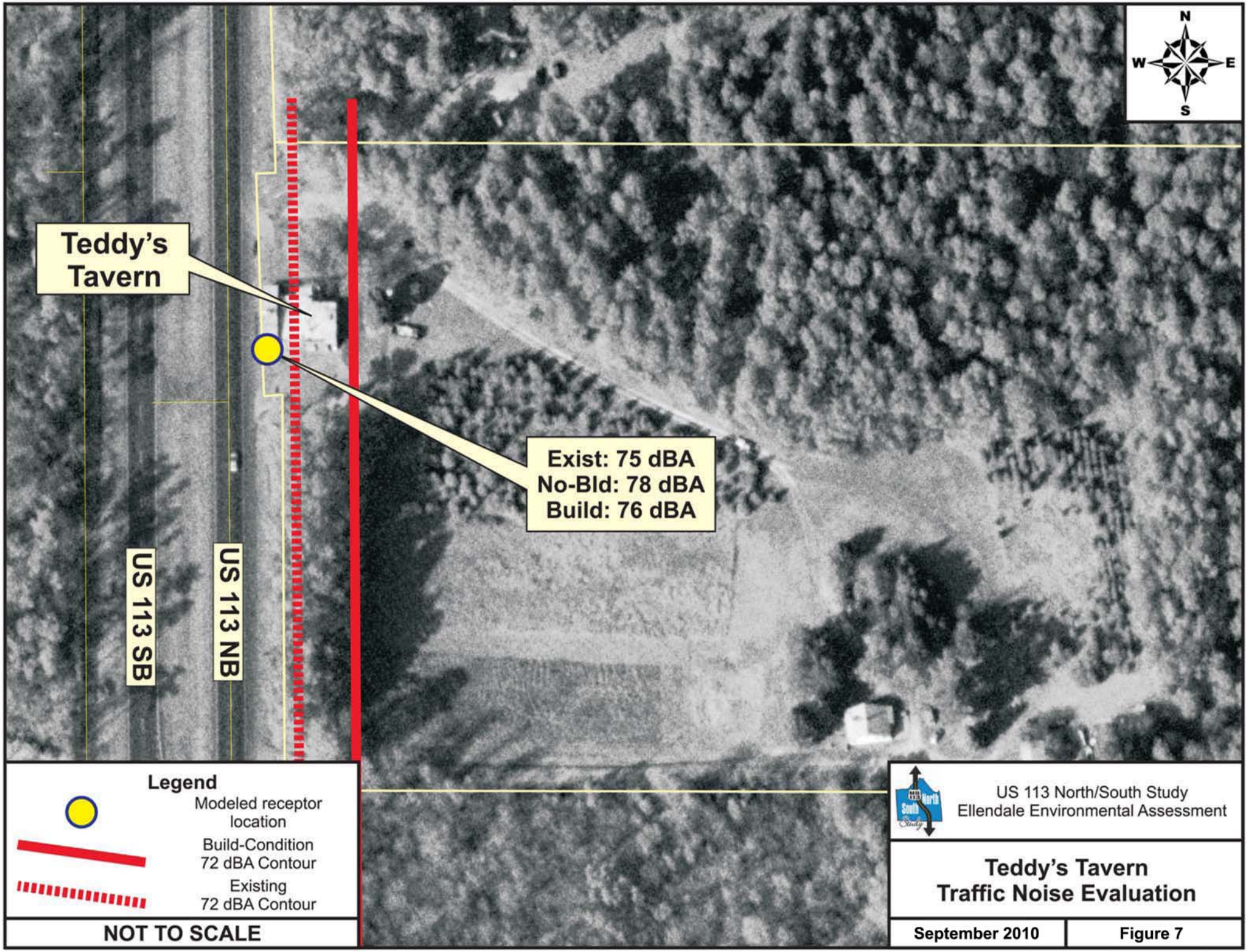
The predicted design year 2030 Preferred Alternative peak hour equivalent traffic noise level is 2 dBA less than the design year 2030 No-build Alternative. As such, the resulting design year 2030 Preferred Alternative noise impact to Teddy's Tavern is negligible and not an effect. Noise studies for impacts and mitigation considerations are further discussed in **Chapter III Section D** and **Appendix D.**

Regarding visual effects, since the tavern was originally built as a roadside stopping place (initially a service station and subsequently a roadside tavern), its relationship to vehicular traffic is a major component of its design and the primary characteristic of its historic significance under Criterion A. Visual changes to the qualities of vehicular traffic or the tavern's relationship to it therefore constitute an effect under Section 106.

The introduction of additional visual elements – i.e. two new southbound travel lanes, increased traffic, and higher average speeds – is, however, expected to be consistent with the historic use of the property and not adverse. Visual changes would occur, but would not diminish the building's integrity of location, design, setting, materials, workmanship, feeling, or association.

Under the Preferred Alternative, access to the property would no longer be available from the mainline, but would be limited to a local cul-de-sac road reached via the interchange at SR 16. Since this constitutes a change of the character of the property's use, it is considered and deemed an adverse effect under Section 106 (36 CFR 800.5(a)(2)(iv)). Although the proposed change in access also has the potential to diminish the volume of business, conceivably leading to closure and the ultimate neglect and deterioration of the property, the parcel's zoning would remain commercial under the Preferred Alternative. Additional directional signs will also be installed as a mitigation measure to direct and sustain wayside traffic to the property. However, with the projected increases in traffic volumes and projected speeds under the 2030 Build Alternative, an access service road and effective signage for Teddy's Tavern may create a more favorable and safe access route to the business.

The current property owner provided comments on the project and is aware of the access changes that might alter the use and long term function of the building and property. There is not a direct historic property concern documented (**Chapter VI**).


N
W
E
S
Teddy's Tavern
Exist: 75 dBA
No-Bld: 78 dBA
Build: 76 dBA
US 113 SB
US 113 NB
Legend
Modeled receptor location
Build-Condition 72 dBA Contour
Existing 72 dBA Contour
NOT TO SCALE
US 113 North/South Study
Ellendale Environmental Assessment
Teddy's Tavern
Traffic Noise Evaluation
September 2010
Figure 7

In sum, the project undertaking would have an adverse effect on Teddy's Tavern under 36 CFR 800.5(a)(2)(iv). Mitigation measures for additional travel directions and access to the property are formally documented in the Section 106 MOA included in **Appendix B**.

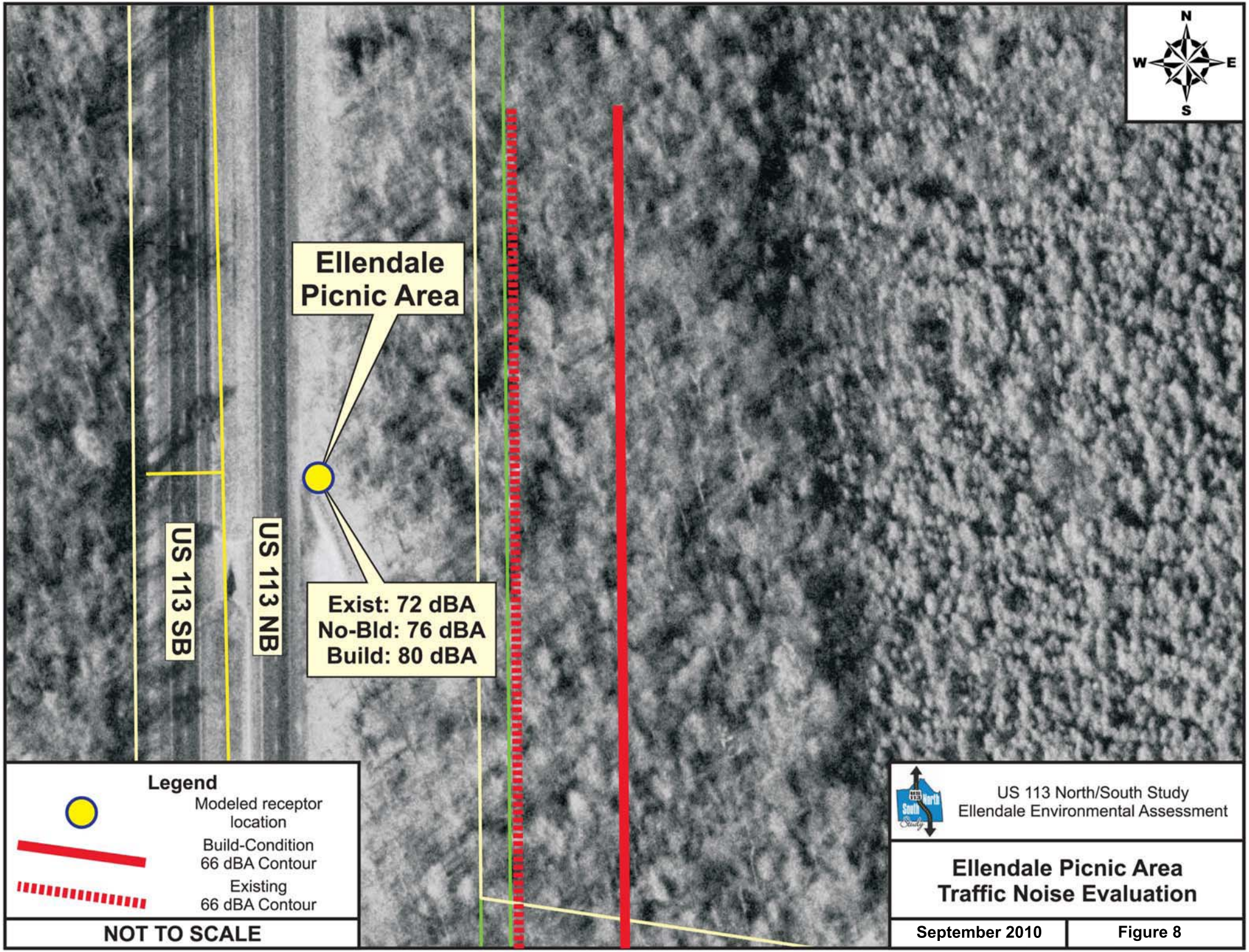
(2) The Ellendale State Forest Picnic Facility (CRS# S08151)

The Preferred Alternative at the Ellendale State Forest Picnic Facility would include no changes to the existing roadway alignment adjacent to the picnic rest area facility. The nearest mainline improvements would be located approximately 0.4 miles to the north. However, because of safety, the existing center median crossover lane at the north end of the picnic rest area facility would be removed. In addition, all turn around median breaks would be effectively eliminated except at the interchange or designated locations.

Thus, there would no longer be viable access to the picnic rest area from southbound US 113. In order for southbound traffic to access the picnic rest area facility, it would have to reverse travel direction at the nearest interchange (Redden Road), approximately 3.4 miles south of the property. The undertaking would not acquire property at the Ellendale State Forest Picnic Facility under the Preferred Alternative. The project would, therefore, have no direct effect on this resource. However, the level of engineering detail has not been determined at this time. There may be temporary disturbance to the existing paved shoulder. The shoulder and areas within the existing right-of-way are part of the designated historic boundary. **Appendix A, Preferred Alternative Sheet 2** illustrates the undertaking's effect on this property.

Indirect effects under 36 CFR 800.5(a)(2)(v) include changes in noise levels and visual components. Under Section 106 consultation, this effect is considered adverse to this property. Predicted existing, design year 2030 No-build Alternative, and design year 2030 Preferred Alternative build-condition loudest-hour equivalent traffic noise levels were assessed at a representative receptor locations of "frequent human use." As shown on **Figure 8**, the noise receptor for the Ellendale State Forest Picnic Facility was modeled at a location in close proximity to the existing US 113 alignment. The predicted loudest-hour equivalent traffic noise levels for existing conditions (72 dBA), 2030 No-build alternative (76 dBA), and 2030 Preferred Alternative (80 dBA) were determined. All were greater than the 66 dBA FHWA NAC traffic noise impact threshold for parklands, as defined by and applicable under the FHWA Guidelines for noise valuation as established in currently applicable 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. Because recorded and modeled noise levels directly within the picnic and parking facility may increase, an effect would occur. Comparing the 2030 No-build Alternative versus the 2030 Preferred Alternative, a 4 dBA further increase in audible level is not necessarily considered to be discernable by typical human hearing. In addition, it does not represent a moderate or high traffic noise impact due to a "substantial increase in noise" of 10 dBA or more, as defined by FHWA Guidelines for noise valuation as established in currently applicable 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. However, the projected audible increase is considered adverse and cumulative.

Back in the early 1990's, US 113 was dualized under an adverse effect finding for audible impacts upon the property. Although audible impacts are minor are a result of this undertaking (+4dBA at this location), collectively the past and current undertaking results a final projected noise of 80 dBA. Although under any No-Build situations, noise levels would generally increase as a result of anticipated traffic volumes. However, the type of noise at 80 dBA by 2030 has been precipitated by past and this future federal undertaking. For Section 106 consultation, the


N
W
E
S
Ellendale
Picnic Area
US 113 SB
US 113 NB
Exist: 72 dBA
No-Bld: 76 dBA
Build: 80 dBA
Legend
Modeled receptor location
Build-Condition 66 dBA Contour
Existing 66 dBA Contour
NOT TO SCALE
US 113 North/South Study
Ellendale Environmental Assessment
Ellendale Picnic Area
Traffic Noise Evaluation
September 2010
Figure 8

viability as a roadside picnic rest area seems questionable as an amenity at 80 dBA near frequent human use. Therefore, the ultimate audible impact and collective result is deemed adverse and cumulative in nature.

Mitigation to help reduce current and predicted traffic noise impacts would not be warranted, practical or feasible. Any effective methods of traffic noise level reduction would eliminate all access and functional use of the property. Noise studies for impacts and mitigation considerations are further discussed in **Chapter III Section D** and **Appendix D.**

Regarding visual effects, since the picnic rest area facility was originally built as a roadside stopping place, its relationship to vehicular traffic is a major component of its design and an important characteristic of its architectural significance under Criterion C. Changes in the volume of vehicular traffic or the facility's relationship to it may constitute an effect under Section 106. However, eliminating the center crossover median, which allows southbound traffic access to the facility, is not a visual effect.

Under the Preferred Alternative, access to the property would no longer be readily available from the southbound mainline travel lane, which has a center median crossover. Since this potentially constitutes a change of the character of the property's use, it is considered to be an effect under Section 106 (36 CFR 800.5(a)(2)(iv)). Based on the application of the criteria of adverse effect and in consultation with the SHPO, this effect is considered cumulative in nature and adverse.

It is reasonably expected that the majority of picnic rest area users are originating from the northbound travel way. Additionally, during the period of significance and during the National Register nomination (1991), the roadway was an undivided highway in both directions. From 1992 to 1994 conditions of US 113 changed reflecting a past federal undertaking by dualizing US 113 to a two-lane divided highway in each direction and separated by a grassy median (i.e. the current cross section or travel condition). However, a center crossover median was included. During this time and with the travel upgrades of US 113 to a high speedway classification, southbound access and reasonable use to the picnic rest area facility was reasonably compromised. High speed travel divided by a grassy median with few crossovers would make it more difficult to enter and use the facility.

The current picnic rest area facility is not specifically advertised for public use either northbound or southbound. Nor is access to the property really encouraged. In removing the center crossover lane at this location for any southbound travelers virtually eliminates all viable access and use to the property from US 113 southbound. The effect in the use of the property from southbound US 113 can now be deemed as adverse. As a mitigation measure, DelDOT will work with the State Forestry Department (property owner) to improve the viable and realistic access and signage for remaining northbound traffic to the property. This may safely alert the traveler that the historic picnic or rest area exists and is readily available to the public.

In terms of property owner input, the State Forestry Department (Delaware Department of Agriculture) personnel have been part of multiple agency discussions, historic background research, environmental reporting, and staff participated in public workshops. Under the Preferred Alternative, the issue to nearly eliminate all southbound traffic from potential use into the Ellendale State Forest Picnic Facility was never a concern. The issue or potential long term impact was never raised. From a Section 106 perspective, there is no documented historic property concern **(see Chapter IV).**

In sum, the project undertaking would have an adverse effect on the Ellendale State Forest Picnic Facility under 36 CFR 800.5(a)(2)(iv), but not under 36 CFR 800.5(a)(2)(v). To adequately

ensure that the adverse affect is addressed, mitigation or provisional measures for additional travel signage and access to the property are proposed. These measures are more formally documented in the Section 106 MOA included in **Appendix B**.

(3) McColley's Chapel (CRS# S00150)

McColley's Chapel is located off Redden Road more than a quarter mile west of US 113. No changes to Redden Road in the vicinity of the chapel are planned as part of the Preferred Alternative. Access and parking to the property would remain the same. The distance from the property to the closest local roadway improvements is approximately 0.12 miles to the east on Redden Road and 0.27 miles north on McColley's Chapel Road. Based on the Preferred Alternative, there are no property takes or projected temporary construction easements for this resource. The project would therefore have no direct effect on this resource. **Appendix A, Preferred Alternative Sheet 1** best illustrates the undertaking's effect on this property.

The Preferred Alternative includes a new interchange at the intersection of Redden Road and the US 113 mainline. Thus, indirect impacts in the form of changes to noise levels and increased flow of traffic levels may be anticipated. These effects may be considered applicable under 36 CFR 800.5(a)(2)(v).

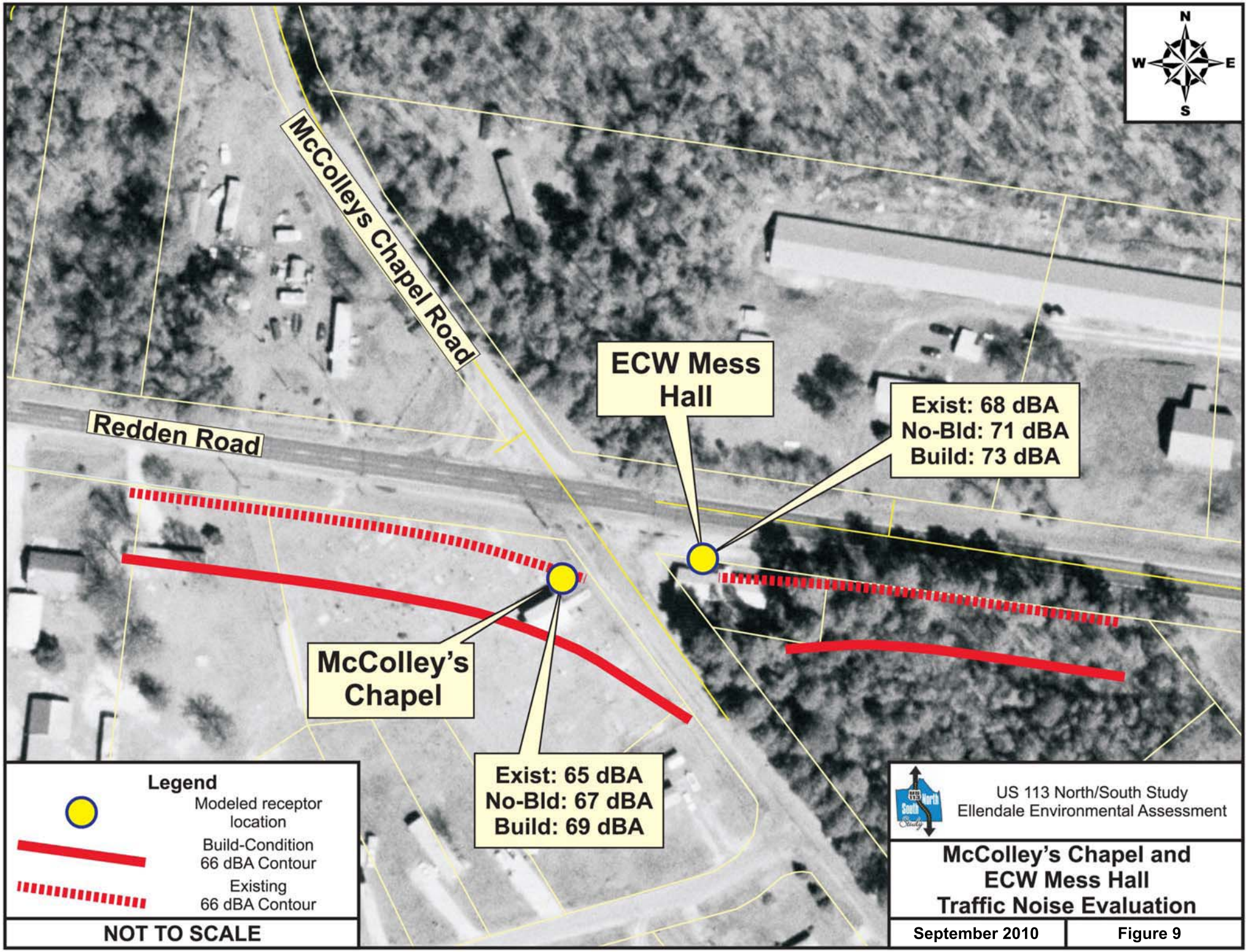
Regarding noise, predicted existing, design year 2030 No-build Alternative, and design year 2030 Preferred Alternative build-condition peak hour equivalent traffic noise levels were assessed at a representative receptor location of "frequent human use." As shown on **Figure 9**, the noise receptor for McColley's Chapel was modeled at a location in close proximity to the southwest corner of the existing intersection of McColley's Chapel Road and Redden Road. The predicted loudest-hour equivalent traffic noise level for existing conditions is 65 dBA. This is below the 66 dBA DelDOT and FHWA NAC traffic noise impact threshold as defined by, and enforceable under, FHWA Transportation Noise Policy for a church. The predicted loudest-hour equivalent traffic noise levels for the 2030 No-build alternative is 67 dBA, while the 2030 Preferred Alternative is modeled at 69 dBA.

The predicted loudest-hour equivalent noise level would be 2 dBA greater in the design year 2030 Preferred Alternative build condition (69 dBA) than under the No-build condition (67 dBA). A 2 dBA increase is deemed undetectable under FHWA noise policy guidance and is not considered an affect for Section 106 consultation.

Both the predicted design year 2030 No-build Alternative and design year 2030 Preferred Alternative loudest-hour equivalent traffic noise levels are projected to be greater than the applicable 66 dBA FHWA Guidelines for noise valuation as established in currently applicable 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. In comparison to existing modeled noise levels, this future effect is not considered adverse. Noise studies for impacts and mitigation considerations are discussed in **Chapter III Section D** and **Appendix D.**

Visual effects are applicable for McColley's Chapel, but are also not considered adverse. To understand why the effect is not considered adverse, it is important to know what could be foreseeable later in time the under the Preferred Alternative.

As coordinated with the SHPO and FHWA, summer weekday peak traffic volume for Redden Road near McColley's Chapel is currently estimated at 2,100 vpd (300 per hour). Under the 2030 No-build Alternative, it is expected to rise to 4,500 vpd (600 per hour), and under the Preferred Alternative to 7,400 vpd (1,000 per hour), largely because the proposed Redden Road


N
W
E
S
McColleys Chapel Road
Redden Road
ECW Mess Hall
Exist: 68 dBA
No-Bld: 71 dBA
Build: 73 dBA
McColley's Chapel
Exist: 65 dBA
No-Bld: 67 dBA
Build: 69 dBA
Legend
Modeled receptor location
Build-Condition 66 dBA Contour
Existing 66 dBA Contour
NOT TO SCALE
US 113 North/South Study
Ellendale Environmental Assessment
McColley's Chapel and ECW Mess Hall Traffic Noise Evaluation
September 2010
Figure 9

interchange is likely to attract or channel new traffic patterns. In addition, the average off-peak speed is currently 50 mph. This is expected to remain the same under the 2030 No-build Alternative and the Preferred Alternative. However, peak-hour speed would change.

Peak hour speed is currently estimated at 49 mph. Under the No-build Alternative the Peak-hour speeds would decrease to 35 mph, and under the Preferred Alternative to 30 mph.

Traffic on McColley's Chapel Road is expected to decrease. Current peak estimates are 2,400 vpd (340 per hour); under the No-build Alternative this would increase to 3,000 vpd (400 per hour), but under the Preferred Alternative would decrease to 1,600 vpd (200 per hour). Travel speeds at both off-peak and peak travel times, currently 40 mph and 39 mph, respectively, would remain largely unchanged under both the No-build and Preferred Alternatives.

McColley's Chapel was not built as a roadside stopping place, but as a 19th-century Methodist meeting house designed to sit at a crossroads where it might be visible and draw worshippers from the local countryside. Its open, rural setting, critical to conveying its architectural significance, is linked to its location at the intersection of two small, lightly traveled roads. The partial interchanges at US 113 with Redden Road and changes to local access on Deer Forest Road may alter local travel patterns to utilize Redden Road on a more frequent basis.

Changes to the qualities of vehicular traffic or the facility's relationship to it have the potential to alter the characteristics that make the property eligible under Criterion C and therefore constitute an affect under Section 106. However, the Redden Road interchange and overpass improvements under the Preferred Alternative would not be visible from the chapel property. They are too far away and are concealed by existing vegetation and dwellings on adjacent properties. Of concern, however, is the introduction of additional visual elements in the form of increased traffic volume. The average daily and hourly number of vehicles on Redden Road is expected to more than triple by 2030 under the Preferred Alternative. On the other hand, average speed at peak travel times is predicted to decrease nearly 20 mph. Further, traffic volume on McColley's Chapel Road is expected to decrease. While there would be more vehicles passing the chapel on Redden Road, they would likely be traveling at lower speeds, and there would be less traffic passing the façade of the chapel on McColley's Chapel Road. Together, the changes in traffic patterns would not alter the rural feeling of the setting, which is integral to the property's architectural significance under Criterion C. The anticipated visual and audible impacts under the Preferred Alternative are therefore not an adverse effect under 36 CFR 800.5(a)(2)(v).

In sum, the project undertaking would not have an adverse effect on the McColley's Chapel property under 36 CFR 800.5(a)(2)(v). Mitigation measures for property are not proposed and church officials had an opportunity to comment and ascertain data during the public workshops (see **Chapter IV**).

(4) ECW Camp S-53 Mess Hall (CRS# S12179)

Like McColley's Chapel, the ECW Camp S-53 Mess Hall is located on a local road (Redden Road) nearly 1/4 of a mile west of US 113. No changes to Redden Road in the vicinity of the building are planned as part of the Preferred Alternative and access to the property would remain the same. The distance from the property to the closest local roadway improvements (resurfacing) is approximately 1/10 of a mile to the east on Redden Road and 0.27 miles north on McColley's Chapel Road. Although final engineering details have not been developed to date, there would not be any property take or temporary construction easement to the mess hall property under the Preferred Alternative. The project would therefore have no direct effect on

this resource. **Appendix A, Preferred Alternative Sheet 1** illustrates the undertaking's effect on this property.

The Preferred Alternative includes a new interchange at the intersection of Redden Road and the US 113 mainline. Thus, indirect impacts in the form of changes to noise levels and increased flow of traffic levels are anticipated. These may be effects considered applicable under 36 CFR 800.5(a)(2)(v).

It is also foreseeable that in the future, a traffic situation may develop. It is possible that increased traffic may necessitate that the paved shoulder and roadside parking (all within state right-of-way) for the facility be eliminated or discouraged for better or safer on-site parking. The property lacks sufficient parking on-site and utilizes portions of state right-of-way on Redden Road as temporary parking. Mess Hall visitors are also obligated to use the McColley's Church property across the street or park along the shoulder. The overall property lot is small (0.17 acres) and the building is situated very close to the road. As such, it is foreseeable that an effect under 36 CFR 800.5(a)(2)(iv) could apply.

Figure 9 illustrates the predicted loudest-hour equivalent traffic noise levels for the parish hall/community center historically known as the ECW Camp S-53 Mess Hall. Predicted existing, design year 2030 No-build Alternative, and design year 2030 Preferred Alternative build-condition loudest-hour equivalent traffic noise levels were assessed at a representative receptor location of "frequent human use." As shown on **Figure 9**, the noise receptor for the ECW Camp S-53 Mess Hall was modeled at a location in close proximity to the southeast corner of the existing intersections of McColley's Chapel Road and Redden Road.

The predicted loudest-hour equivalent traffic noise levels for existing conditions (68 dBA), 2030 No-build Alternative (71 dBA), and 2030 Preferred Alternative (73 dBA) are all greater than the 66 dBA FHWA NAC traffic noise impact threshold for a church or community building, as defined by and applicable, under FHWA Transportation Noise Policy.

However, the predicted loudest-hour equivalent noise level will only be 2 dBA greater in the design year 2030 Preferred Alternative build condition than under the No-build condition. This 2 dBA increase is not considered an effect for Section 106 purposes. This increase is deemed undetectable under FHWA guidance and is not considered an effect for Section 106 consultation. Noise studies for impacts and mitigation considerations are discussed in **Chapter III Section D** and **Appendix D.**

Visual effects are applicable, but are also not considered adverse under 36 CFR 800.5(a)(2)(v). To understand why the effect is not considered adverse, it is important to know what may be foreseeable as a result of implementing the Preferred Alternative.

Summer weekday traffic volume (peak) for Redden Road near the ECW Camp S-53 Mess Hall is currently estimated at 2,100 vpd (300 per hour). Under the year 2030 No-build Alternative, vehicular traffic is expected to increase to 4,500 vpd (600 per hour), and under the Preferred Alternative to 7,400 vpd (1,000 per hour), largely because the nearby interchange is likely to attract new traffic and limit travel patterns. Average off-peak speed is currently 50 mph, and is expected to remain the same under the 2030 No-build Alternative and the Preferred Alternative. Peak-hour speed would, however, change. Speeds are currently estimated at 49 mph under the No-build Alternative and would decrease to 35 mph under the Preferred Alternative. Traffic on McColley's Chapel Road, however, is expected to decrease. Current estimates are 2,400 vpd (340 per hour). Under the No-build Alternative this would increase to 3,000 vpd (400 per hour), but under the Preferred Alternative would decrease to 1,600 vpd (200 per hour). Travel speeds at

both off-peak and peak travel times, currently 40 mph and 39 mph, respectively, would remain largely unchanged under both the No-build and Preferred Alternatives.

The average daily and hourly number of vehicles on Redden Road is expected to more than triple by 2030 under the Preferred Alternative. On the other hand, average speed at peak travel times is predicted to decrease nearly 20 mph. Further, traffic volume on McColley's Chapel Road is expected to decrease. While there would be more vehicles passing the Mess Hall on Redden Road, they would likely be traveling at lower speeds. Meanwhile, roadway and infrastructure improvements under the Preferred Alternative would not be visible from the ECW Camp S-53 Mess Hall's location due to roadway configuration, distance factors, and adjacent properties with buildings/trees present that have established visual buffers. Together, the changes or foreseeable effects with traffic patterns, volumes, and speeds, the anticipated visual impacts under the Preferred Alternative are not considered an adverse effect under 36 CFR 800.5(a)(2)(v). The Preferred Alternative would not alter any of the characteristics of the ECW Camp S-53 Mess Hall that make it architecturally significant under National Register Criterion C. Further, since the building has been moved to its current location, the setting and location for a visual impact is largely immaterial to its eligibility.

Under the Preferred Alternative, Redden Road is likely to stay the same. So, the ability to pull out of traffic and park in front of the building would remain. This element would not be directly altered under the project. However, it is foreseeable that by the year 2030 and under the Preferred Alternative, an estimated 7,400 vpd (1,000 per peak hour) traveling along the front of the property may present itself as a safety issue for the building's use and function at this location and intersection. Parking restrictions may be warranted as well as a traffic signal and/or curbing and turning lane movements. These elements may present a foreseeable effect under 36 CFR 800.5(a)(2)(iv).

However, the foreseeable effects suggested above would be deemed not adverse in nature. Parking would still be available along the roadside shoulder and across the street. Local traffic is also projected to increase regardless of whether or not the undertaking occurs. So, parking or safety conditions may be an issue, regardless of the federal participation of the Preferred Alternative.

In sum, the project undertaking would not have a visual adverse effect on the ECW Camp S-53 Mess Hall property under 36 CFR 800.5(a)(2)(v). Foreseeable effects distant in time or further removed in distance could occur under 36 CFR 800.5(a)(2)(iv), but are also not considered adverse. Mitigation or monitoring measures for property are not proposed in the Section 106 MOA and church officials, that also operate the ECW Camp S-53 Mess Hall, had an opportunity to comment and ascertain data during the public workshops.

(5) Maringola Produce Stand (CRS# S08570)

Beyond general paving and resurfacing proposals at this location, the Preferred Alternative at the Maringola Produce Stand would include no changes to the existing roadway alignment adjacent to the facility. The nearest local access road improvements would be located 0.15 miles to the south, and the improvements to the mainline would stop approximately 0.4 miles south of the property. Under the Preferred Alternative the roadway adjacent to the produce stand would not be converted into a limited access highway, so access to the property would not change. There would not be a property take or use of the property under the Preferred Alternative, and the project would have no direct effects on this resource. Despite the absence of full engineering detail, temporary construction easements beyond the exiting right-of-way and onto the property

are not expected. **Appendix A, Preferred Alternative Sheet 3** illustrates the undertaking's effect on this property.

Improvements under the Preferred Alternative are south of the property and are too far away to suggest visual effects may occur. The proposed improvements are also screened by adjacent properties and vegetation. However, based on traffic projections increases in traffic may occur. Summer weekday peak traffic volume for the Maringola Produce Stand location is estimated at 17,000 vpd. Under the 2030 No-build Alternative, it is expected to rise to 39,000 vpd, and under the Preferred Alternative to 44,000 vpd. The average off-peak speed is currently 50 mph. The travel speeds are expected to remain the same under the 2030 No-build Alternative and the Preferred Alternative.

Since the produce stand was originally built as a roadside stopping place, its relationship to vehicular traffic and volumes is a major component of its design and an important characteristic of its architectural significance under Criterion C. Changes to the qualities of vehicular traffic or the facility's relationship to it do not constitute as an effect under Section 106. Regardless, the building is currently vacant. The only potential impacts to the Maringola Produce Stand may be indirect, consisting of changes in noise levels. This criteria of adverse effect, as suggested under 36 CFR 800.5(a)(2)(v), is not considered applicable.

Predicted existing, design year 2030 No-build Alternative, and design year 2030 Preferred Alternative build-condition loudest-hour equivalent traffic noise levels were assessed at a representative receptor location of "frequent human use." As shown on **Figure 10**, the noise receptor for the Maringola Produce Stand was modeled at a location near the southwest corner of the historic building, in close proximity to the existing US 113 alignment.

The predicted loudest-hour equivalent traffic noise levels for existing conditions (73 dBA), 2030 No-build Alternative (76 dBA), and 2030 Preferred Alternative (77 dBA) are all greater than the 71 dBA FHWA NAC traffic noise impact threshold for a commercial land use, as defined by and applicable, under FHWA Transportation Noise Policy.

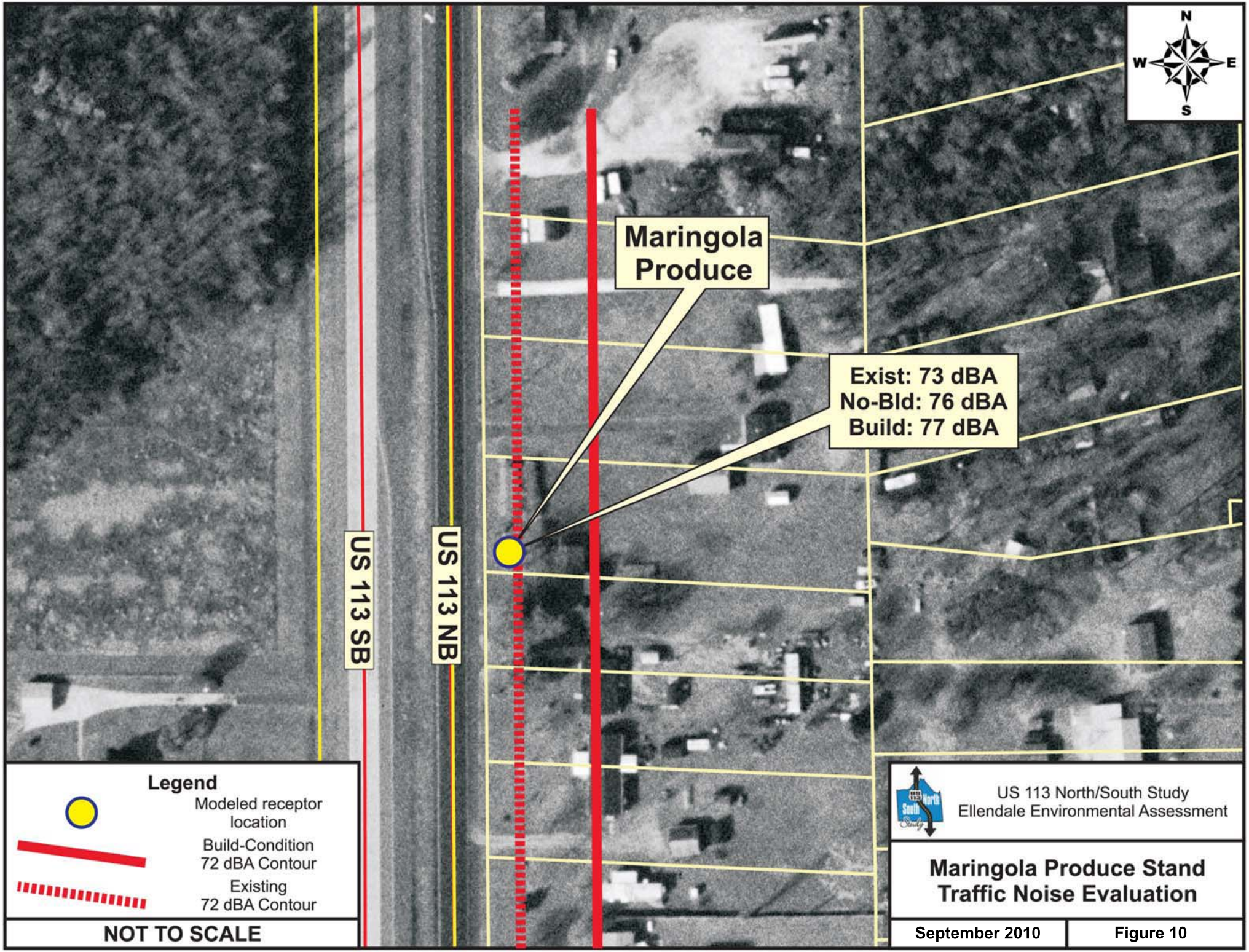
Because modeled noise levels directly in front of the building are anticipated to increase up to 4 dBA (existing versus build) or 1 dBA (No-build versus Build), an audible effect is likely to occur. However, the 1 dBA increase is not considered an effect for Section 106 purposes. This increase is deemed undetectable under FHWA noise policy guidance and is not considered an affect for Section 106 consultation.

Mitigation to help reduce predicted traffic noise impacts would not be warranted, practical or feasible, since effective methods of traffic noise level reduction would eliminate all access and functional use of the property. Noise studies for impacts and mitigation considerations are discussed in **Chapter III Section D** and **Appendix D.**

In sum, the anticipated audible impacts for the Maringola Produce stand under the Preferred Alternative are not applicable under 36 CFR 800.5(a)(2)(v). No effect is expected and mitigation or monitoring measures for property are not proposed in the Section 106 MOA.

2. Archaeological Resources

A historic context and archaeological sensitivity model were prepared for the US 113 Ellendale study area. Relevant information for prehistoric and early historic archaeological sensitivity is presented in the *US Route 113 North/South Study Archaeological Sensitivity - New CRS Properties - US 113 / DuPont Highway Historic Context Cultural Resource Management Document*. The historic-period sensitivity model for Ellendale was updated in May 2008.


N
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Maringola Produce
Exist: 73 dBA
No-Bld: 76 dBA
Build: 77 dBA
US 113 SB
US 113 NB
Legend
Modeled receptor location
Build-Condition 72 dBA Contour
Existing 72 dBA Contour
NOT TO SCALE
US 113 North/South Study
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Figure 10

The archaeological sensitivity model was prepared as a planning tool to assist in the development of the designs for the various alternatives under consideration for the project and to aid in the assessment of their relative potential impacts on archaeologically sensitive areas. Both prehistoric (referring to pre-contact Native American history) and historic archaeological potential are considered in this model. Characterization of the environment has been accomplished using data available in Geographic Information System (GIS) format, used to compare the relative significance of the criteria within the various parts of the project area. Historic and modern ground disturbances were modeled to qualify the areas of archaeological potential relative to their likely integrity. The results of the model are zones characterized by their sensitivity for prehistoric and historic archaeological resources.

The areas were illustrated in the January 2005 report and the May 2008 update, and reviewed by archaeologists on staff at DelDOT and the SHPO. Illustrations of these areas are not provided in this EA for the protection of the known and potential site areas. Section 304 of the NHPA, 36 CFR Part 800.11 of the ACHP's regulations implementing Section 106 of that same Act, and Delaware Code Title 7, Chapter 53, § 5314 permit the restriction of access to information on the location and nature of archaeological resources.

In order to evaluate the potential consequences of the Preferred Alternative, the archaeological sensitivity model was overlaid with the proposed limit of disturbance, thus determining the areas of each sensitivity level affected. The results are shown in **Table 2**.

Three known archaeological sites are within the Limit of Disturbance for the Preferred Alternative. The three sites have currently not been evaluated for National Register eligibility.

- S-08713 (7S-C-050) is a historic-period farmstead dating to the late nineteenth-early twentieth centuries. It was identified through surface collection during a Phase I survey for US 113 improvements in 1988, but no excavation was conducted.
- S-07957 (7S-F-067), "Redden Crossroads," is a historic-period farmstead dating to the nineteenth century. It was identified in eight shovel test pits excavated during a Phase I survey for US 113 improvements in 1988.
- S-07979 (7S-C-048) is a Woodland I/II prehistoric site identified through surface collection during a Phase I survey for US 113 improvements in 1988.

Based on a predictive model to estimate the prehistoric and early historic-period archaeological sensitivity of the area, Alternative 5, SR 16 Option 1 would impact 43.4 acres of land that are within a high and moderate prehistoric sensitivity zone. Alternative 5, SR 16 Option 2 would impact 47.2 acres of land that are within a high and moderate prehistoric sensitivity zone. In addition, a sensitivity study for later historic-period archaeological resources resulted in the identification of eight (8) locations within the Preferred Alternative where there is a high likelihood for historic period archaeological deposits. Based on the archaeological predictive model and what is known from a simple baseline, adverse effects to archaeological sites are expected under 36 CFR 800.5(a)(2)(i) and (iii). As such, DelDOT is committed to performing the necessary archaeological analysis to fully determine National Register eligibility for archaeological resources in the Ellendale APE.

FHWA, DelDOT, and SHPO have consulted and developed a draft Section 106 MOA to establish the process for identifying archaeological resources within the APE for the Preferred Alternative (**Appendix B**). This will allow DelDOT to evaluate the potential eligibility of all archaeological resources for the National Register. If eligible archaeological resources are

discovered, DelDOT and FHWA will consult with the SHPO to determine if the resources will truly be adversely affected, and if so, will look for ways to avoid impacts or minimize effects. If the effects cannot be avoided, traditional or alternative forms of archaeological mitigation will be utilized as specified in the Section 106 MOA.

Project initiation and consultation with federally recognized Native American tribes in Delaware have also taken place via nation to nation consultation initiated by FHWA to the Delaware Nation and the Stockbridge Munsee Tribe (**Appendix C**). In addition to the federally recognized tribes being consulted throughout this project, non-federally recognized state / local tribes have been contacted by DelDOT cultural resources staff. On April 13 2009, DelDOT sent letters to the Lenape and Nanticoke tribes in Delaware providing a project update which stated:

"This project is still under design to achieve a preferred alternative, and Archaeological compliance work has not begun. Currently DelDOT, SHPO, and FHWA are working on an MOA to complete all the Archaeological work."

As a result, the Delaware Nation is a consulting party for the project and the Section 106 MOA. As this project moves forward with Section 106 coordination, per the MOA, FHWA will continue their consultation on a nation to nation basis with the two federally recognized tribes and DelDOT will continue their consultation with the two non-federally recognized tribes.

3. Summary and Mitigation Measures

Five historic properties within the APE for the Preferred Alternative were identified as the result of architectural survey and evaluation in consultation with DelDOT, FHWA, and SHPO. Teddy's Tavern and the Ellendale State Forest Picnic Facility (Delaware CRS #S-8384 and CRS #S-8151) would experience an adverse effect in the form of limiting or altering access and cumulatively impacting noise levels, therefore changing the character of the property's use.

The remaining properties would experience "no effect" or "no adverse effect" as a result of audible, visual, minor access change, and potentially foreseeable impacts. To date, the National Register eligibility of the known archaeological sites within the APE has not yet been determined and investigation is needed.

Proposed mitigation measures for "adverse effects" are outlined in the Section 106 MOA. The document also outlines steps to be taken to complete the Section 106 consultation process with regard to archaeological sites. Archaeological data recovery, public outreach, preservation in place, consulting party protocol, and other mitigation measures are discussed and administered in the Section 106 MOA. The Delaware Nation has been identified as an additional consulting party (**Appendix B**).

C. Air Quality

The Ellendale study area is contained within the US Environmental Protection Agency (USEPA) designated Sussex County, Delaware non-attainment area for 8-hour ozone. The proposed alternatives for this project would not add increased vehicle capacity of the existing roadway nor would it increase vehicle miles traveled in the study area. Therefore, this project is deemed, "not regionally significant" and would not trigger a new regional analysis under the rules for transportation conformity. In concurrence with the USEPA and the Delaware Department of Natural Resources and Environmental Control (DNREC), FHWA has determined that the Air Program for Sussex County, Delaware Ozone Non-attainment Area adequately addresses and meets the requirements as specified in the November 1993 Federal Conformity Rule and its subsequent amendments. It is unlikely that the construction of a build alternative would have

stand-alone effects on statewide air quality. If an impact were to occur as a result of the project, the impact would likely be positive as the improved roadway would reduce congestion and lessen idling traffic.

The operation of heavy equipment would have minor, temporary impacts on air quality during the construction of the project. The primary impact would be wind blown soil and dust in active construction zones, and the second greatest source of air emissions would result from increased machinery exhaust pollutants. Measures would be taken to reduce levels of fugitive dust and windblown soil generated during construction by wetting disturbed soils, staging soil disturbing activities, and prompt revegetation of disturbed areas. The contractors will comply with all state and federal regulations to control construction equipment emissions.

D. Noise

Existing and design-year noise levels were modeled using FHWA Traffic Noise Model (TNM) version 2.5 for the Ellendale study area. The model incorporates vehicle noise emission levels updated for modern vehicle classification, traffic speed and traffic volume, sound propagation factors from atmospheric absorption, divergence, intervening ground, intervening barriers, and intervening rows of buildings and areas of heavy vegetation. Existing 2005 classified base vehicle volume data were used to predict existing noise levels. The model estimates existing noise levels at first-row residences along US 113 to range from 64 to 69 A-weighted decibels (dBA). Forty seven properties are predicted to be currently experiencing noise levels that meet or exceed 66 dBA.

Design-year noise levels for the No-build Alternative are predicted to range from 67 to 73 dBA, with 67 noise impacts. Alternative 5 SR 16 Option 1 noise levels are predicted to be 68 to 77 dBA, with 73 impacts.

Of the 73 impacts predicted with the Preferred Alternative, 53 are located on the northbound side of improved US 113. The majority of these impacts are grouped in two main areas - Fleatown Road/Hudson Pond (26 impacts), and Sharons Road/DE 16 (9 impacts). All of these properties require access to the US 113 frontage road, and such access would require gaps in any proposed mitigation to allow access. Effective noise reduction is not achievable in these cases; therefore, mitigation via a noise barrier (berm or wall) is not feasible. The remaining impacted residences, even if not requiring US 113 access, are too widely distributed throughout the study area to achieve cost-effective mitigation.

Noise mitigation was found not to meet DelDOT's criteria for both feasibility and cost-effectiveness for any community within the Ellendale study area. See **Appendix D**: Noise Technical Memorandum, May 2008 for detailed information.

E. Hazardous Materials

Based on coordination with DNREC, Division of Air and Waste Management, Waste Management Section and a review of their mapping, there are no known potential hazardous materials sites in the Ellendale study area. While hazardous materials issues are not expected to be encountered during the construction of the project, the greatest potential exists at the intersection of US 113 and SR 16, where two gas stations lie across US 113 from one another. Verification with DNREC's, Waste Management Section did not identify any reported spills at either of these locations. Areas will be tested and remediation, if needed, will be executed in accordance with all applicable state and local regulations.

F. Natural Environment

The impacts for the two On-alignment Alternative Options and the No-build Alternative are shown in **Table 4** and are discussed in detail in the following sections.

Table 4: Natural Environment Impacts

Resource	No-build Alternative 1	On-alignment Alternative 5 SR 16 Option 1	On-alignment Alternative 5 SR 16 Option 2
100-Year Floodplain (acres)	0	2.3	2.4
Wetlands (acres)	0	1.1	1.1
Hydric Soils (acres)	0	136	137
Subaqueous Lands (linear feet)	0	360	360
Waters of the US / streams and ditches (linear feet)	0	5,700	5,400
Natural Areas (acres)	0	5.5	5.5
State Resource Areas (acres)	0	10.5	10.5
Forestlands (acres)	0	21	21
Agricultural Districts, 10-Year (number of properties)	0	4	4

1. Surface Water and Subaqueous Lands

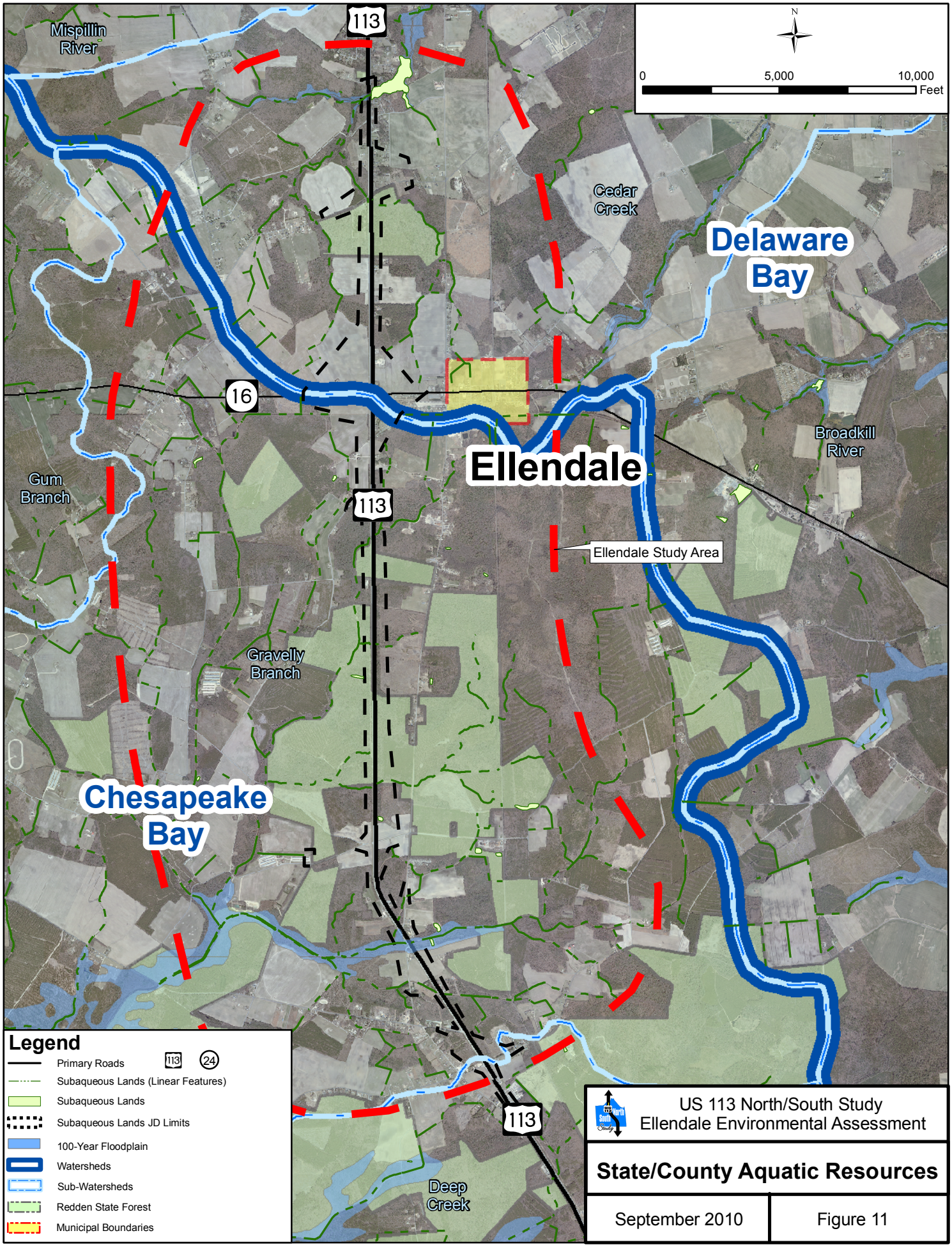
As shown on **Figure 11**, the Ellendale study area lies within the Delaware Bay and Chesapeake Bay watersheds and within four sub-watersheds (Cedar Creek, Gravelly Brach, Deep Creek and Gum Branch). The northern portion of the study area, from south of Hudson Pond south to the US 113/SR 16 intersection lies within the Delaware Bay watershed, Cedar Creek sub-watershed. The study area from SR 16 south to just north of the Deer Forest/Redden Road intersection lies within the Chesapeake Bay watershed, Gravelly Branch sub-watershed. The southern-most portion of the study area at the Deer Forest/Redden Road intersection lies within the Chesapeake Bay watershed, Deep Creek sub-watershed.

Three named surface water bodies (Hudson Pond, Maple Branch, and Gravelly Branch) flow through the study area, along with a number of unnamed tributaries to these streams and to Hudson Pond. The study area lies at the upper reaches of the watersheds, and most of the existing stream crossings are currently piped under the roadway.

Extensions of existing pipe and culvert crossings would be required along US 113 in the study area. The Road 213 overpass and Road 213/Old State Line Road frontage road would require a new crossing of Gravelly Branch. Projected impacts to surface water resources associated with the Preferred Alternative range from 5,400 linear feet to 5,700 linear feet depending on the SR 16 interchange option. Surface water impacts are shown in **Table 4**.

DNREC regulates surface waters from the ordinary high water mark towards the channel in non-tidal areas under 7 Del. C. §7212 as “Subaqueous Lands”. A preliminary Jurisdictional Determination field review initially based on GIS data, was conducted with DNREC Wetlands and Subaqueous Lands section on March 20, 2009 to identify jurisdictional Subaqueous Lands within the Ellendale study area. **Figure 11** shows the jurisdictional State / County Subaqueous Lands in the Ellendale study area.

Impacts to Subaqueous Lands associated with the Preferred Alternative are approximately 360 linear feet. In the Ellendale study area, Subaqueous Lands are a subset of jurisdictional water of the US and the impacts to Subaqueous Lands are duplicative of a portion of the waters of the US impacts.


Mispillin River
113
N
0
5,000
10,000
Feet
Cedar Creek
Delaware Bay
16
Broadkill River
Ellendale
Gum Branch
113
Ellendale Study Area
Gravelly Branch
Chesapeake Bay
113
Deep Creek
Legend
Primary Roads
113
24
Subaqueous Lands (Linear Features)
Subaqueous Lands
Subaqueous Lands JD Limits
100-Year Floodplain
Watersheds
Sub-Watersheds
Redden State Forest
Municipal Boundaries
US 113 North/South Study
Ellendale Environmental Assessment
State/County Aquatic Resources
September 2010
Figure 11

Avoidance and minimization efforts to reduce impacts to Subaqueous Lands and to ensure unimpeded aquatic species movement will continue during final design and appropriate compensatory mitigation will be required for unavoidable impacts to Subaqueous Lands.

Erosion and sediment control plans will be developed as part of the preparation of design plans for the project. Stormwater management measures would be designed to satisfy quality and quantity management requirements of the State of Delaware's Sediment and Stormwater Regulations.

2. Ground Water

There are no Recharge Resource Protection Areas or Wellhead Resource Protection Areas located within or near the study area. According to the Delaware Department of Agriculture, there are multiple domestic farm wells located throughout the study area. There is one domestic farm well located south of SR 16 on the west side of US 113 and two south of Gravelly Branch. All three Domestic Farm Wells are located along the existing US 113 alignment. There are two drinking water wells located within the study area, along US 113 just north of SR 16. According to the *Greater Ellendale Water System Feasibility Analysis (March 2006)*, the two wells are located on the Exxon Station and the Deluxe Dairy Market properties.

The Preferred Alternative would impact the drinking water well at the Exxon Station (see **Appendix A, Preferred Alternative Sheet 3**), in the northeast quadrant of the intersection of SR 16 and US 113. State procedures for closing wells, administered by DNREC, Division of Water Resources, Water Supply Section, would be followed for the Preferred Alternative prior to project construction or should any advance right-of-way acquisition occur at the request of the property owner.

Implementing appropriate construction procedures and design features will minimize potential impacts to the water quality of groundwater resources, even though these impacts are not considered significant. Activities that may potentially contaminate groundwater will be minimized. During construction, chemical products would be properly contained and disposed of offsite at an approved facility. All vehicular equipment shall be in good working condition with no fluid leakage. When not in use, the equipment will be parked on a non-permeable surface and spills or leaks will be cleaned immediately by removal of the contaminated soil. These practices and procedures will be included in the specifications for the construction of the project.

3. Floodplains

According to the Federal Emergency Management Agency (FEMA) flood boundary and floodway maps, two floodplains are located in the Ellendale study area (see **Figure 11**). The Gravelly Branch 100 year floodplain is located south of Robbins Road and intersects US 113 north of Redden Road. The proposed Old State Road overpass of US 113 and the frontage road connecting to Road 213 will both cross the Gravelly Branch Floodplain. The Hudson Pond floodplain is located along Hudson Pond east of US 113 and along the unnamed tributary to Hudson Pond west of US 113. The proposed southbound lanes of US 113 would cross the Hudson Pond floodplain. The Preferred Alternative and both interchange options would have similar impacts on floodplains. During design, hydrologic and hydraulic studies would be conducted to minimize and avoid floodplain impacts.

4. Rare, Threatened and Endangered Species

Coordination with the US Fish and Wildlife Service (USFWS) and DNREC indicates the potential to affect one rare species, the federally threatened Swamp Pink, which has known sites and habitat in the study area (see **Appendix C** for agency correspondence). In cooperation with DNREC, field investigations were conducted at known sites and habitat in the study area. A single Swamp Pink population was located during these investigations.

To avoid and minimize impacts to Swamp Pink, multiple options were developed in the Staytonville/Fleatown Road area. These options and their potential impacts on Swamp Pink were discussed with DNREC and USFWS. USFWS indicated that a Biological Assessment of the impacts to Swamp Pink should be conducted.

Property and community impacts in the area north of Fleatown Road have been reduced from previously considered preliminary engineering. The Preferred Alternative interchange options have been created to reduce these impacts. The options presented in this EA minimize environmental impacts and reduce property and community impacts.

DelDOT agreed with the findings of the Biological Assessment of impacts to Swamp Pink for the Preferred Alternative; however, based on discussions with USFWS, it is anticipated that the project is not likely to adversely affect Swamp Pink due to the implementation of avoidance and minimization measures. During project design, concurrence on the conclusion of the Biological Assessment will be sought by DelDOT to conclude the Section 7 consultation pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531, et seq.).

Coordination also indicated the potential presence of the recently de-listed Bald Eagle (*Haliaeetus leucocephalus*), a species protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The Bald Eagle is also listed as a State endangered species and revised endangered species protective language pertaining to the Bald Eagle is pending. DNREC tracks the location of nesting Bald Eagles and conducts annual Bald Eagle nesting surveys. DNREC has not located any nesting Bald Eagles in the study area.

Habitats for multiple state listed species have been identified throughout the study area by the DNREC. However, exhaustive field investigations to determine the presence of State listed RTE species have not been conducted and unidentified state listed species may be present in the project area. Because the Preferred Alternative remains primarily within the existing right-of-way, the potential impact on Bald Eagles and other state species is minimal.

5. Wetlands and Other Waters of the US

In 2002, the Delaware Office of State Planning Coordination (OSPC) mapped land use classifications, including wetlands, in the study area based on aerial imagery, mapped hydric soils and other available GIS data sets. The mapping identified extensive palustrine wetland resources throughout the study area. The wetland resources include shallow ponds, marshes, swamps and sloughs. In 2007, the OSPC revised mapped land use classifications, including wetlands, based on recent aerial imagery. The revised maps continued to show extensive palustrine wetland resources throughout the study area. Field reviews of the OSPC mapped wetlands in the study area with the Army Corps of Engineers (ACOE) revealed far fewer wetlands. It is evident that extensive tax and agricultural ditching have effectively drained and removed hydrology from many of the OSPC mapped wetlands. Since most of these areas are mature coastal plain hardwood forests dominated by facultative species the change in hydrology has not been reflected in the forest composition and cannot be easily detected through aerial

imagery. Field investigations were conducted to refine the OSPC land use mapped wetlands. Each OSPC identified wetland, potentially impacted by the Preferred Alternative, was visited and classified as either wetland or upland. In some cases, OSPC wetlands contained both wetland and upland areas and were divided accordingly. The OSPC wetlands refined through field investigation were used to evaluate impacts to wetlands (see **Table 4**) and are shown on mapping in **Appendix A, Preferred Alternative Sheets 1-3**.

US Geological Survey quadrangles, US Department of Agriculture Soil Survey Mapping, and Sussex County Stream and Ditch mapping were used to identify potential other Waters of the US in the study area. The mapping indicates extensive streams and ditches in the study area and Hudson Pond, a lacustrine, open water resource at the north end of the Ellendale study area. Recent joint guidance following the Rapanos court decision from EPA and ACOE has clarified the jurisdiction of some waters of the US. The guidance states that the agencies will generally not assert jurisdiction over ditches excavated wholly in and draining only uplands. A field review, conducted on March 20, 2009, evaluated the flow status and adjacent land cover of the potential waters of the US to determine jurisdiction under Rapanos guidance. Only other waters of the US that are jurisdictional under the joint guidance have been used to evaluate impacts (see **Table 4**). These waters of the US are shown on **Figure 6** and on the mapping in **Appendix A, Preferred Alternative Sheets 1-3**.

The impacts to wetlands, hydric soils, and other Waters of the US are shown in **Table 4**. The Preferred Alternative is expected to impact 1.1 acres of wetlands and between 5,400 and 5,700 linear feet of Waters of the US, depending on the SR 16 interchange option. Avoidance and minimization of wetland and other Waters of the US impacts will continue as plans are developed. An appropriate wetland compensation/mitigation program would also be developed and implemented for any impacts to wetlands or Waters of the US that would be expected with the final road design. It is expected that the actual acres of impact to wetlands and linear feet of Waters of the US will decrease both through avoidance and minimization measures and through accurate field delineation of wetland resources. This project would not require the relocation, stabilization or channelization of any streams.

6. Permits

An ACOE permit and a DNREC Subaqueous Lands permit would be required for work in Waters of the US, including streams and wetlands. There are no bridges or navigation channels located within the study area; therefore there is no need for a US Coast Guard permit. Coordination with DNREC's Coastal Zone Management Section would be required due to the study area's location within the Delaware Coastal Zone.

As discussed previously, impacts to wetlands and Waters of the US are unavoidable but minimization efforts will continue as detailed plans are developed. Compensation for the unavoidable impacts to wetlands and Waters of the US will be accomplished through a comprehensive mitigation strategy that will achieve the goal of "no net loss" and attempt to replace the functions and values of the aquatic resources affected by the project.

7. State Forest and Resource Areas

As discussed earlier, about 70 percent of the land adjacent to the US 113 Corridor in the Ellendale Study Area is forested. Some of those forested lands are owned by the Delaware Department of Agriculture, and are part of the Redden State Forest system. There would be adverse effects under Section 106 of the National Historic Preservation Act, 16 U.S.C. Part 470, and its implementing regulations (36 CFR Part 800) to the Ellendale State Forest Picnic Facility

(as per discussion between DelDOT and the Delaware State Historic Preservation Office on December 3, 2009) but there would be no Section 4(f) uses of this historic property. The Redden State Forest is Delaware's largest state forest, totaling almost 10,000 acres divided over 16 tracts. Loblolly pine (*Pinus taeda*) is the primary tree species in the forest, although Redden also has stands of mixed hardwoods, including oaks (*Quercus* spp.), maples (*Acer* spp.) and sweetgum (*Liquidambar styraciflua*). Redden State Forest's large timbered tracts are ideal for deer hunting and provide habitat for small game, ducks, and a variety of state rare plants, vegetation communities, and animal species.

Two tracts, the Appenzellar Tract (190 acres) and the Ellendale Tract (1,736 acres) are located in the study area and are shown in **Appendix A, Preferred Alternative Sheets 1-3**. The Appenzellar Tract is located on both sides of US 113 immediately south of Staytonville/Fleatown Roads. The Ellendale Tract is also located on both sides of US 113, south of VFW Road to north of Redden Road. All of the Redden State Forest is listed as a State Resource Area. Portions of the Redden State Forest system provide trails for hiking, horseback riding, bicycling and bird watching, a limited number of primitive camping sites, a small catch and release fishing pond, an historic carriage house which has been converted into a natural resource education facility and the Historic Redden Lodge, which is available for use by the public. However, none of these amenities are located on either the Appenzellar or Ellendale Tracts. To date, no historic objects associated with the State Forest system have been identified within the proposed limit of disturbance. DelDOT environmental staff surveyed the US 113 right-of-way within the Appenzellar Tract in June 2009, and did not locate any objects, old or new. Other State Resource Areas are found in the study area but are not impacted by the Preferred Alternative.

The Preferred Alternative and related options would impact 10.5 acres of State Resource Areas (see **Table 4**). These impacts are shown in **Appendix A, Preferred Alternative Sheets 1-3**. With the exception of a 1.4 acre impact on the Ellendale Tract associated with the realignment of Marsh Road to Maple Branch Road, the remainder of the impact is in the Appenzellar Tract. This impact is associated with the overpass of Staytonville/Fleatown Roads over US 113 and the frontage road connection to the overpass.

State Resource Areas as identified on 2006 DNREC mapping are void because of Court Ruling: Cartanza, et al. v. DNREC, et al. Civil Action No. 2641-MG. Impacts are included here as a representation of lands considered to have significant ecological value by DNREC.

Forest impacts in Delaware are regulated by the Delaware Forest Conservation Act (Delaware State Senate Bill #324). Mitigation requirements as outlined by the Delaware Forest Conservation Act are:

- 1-10 trees removed = 1:1 tree replacement ratio;
- 11-49 trees removed = 2:1 tree replacement ratio;
- 50 or more trees removed = acre for acre forest area replacement ratio.

Mitigation for impacts to forest areas will be determined during the design phase of the project. The Ellendale State Forest Picnic Facility within the Redden State Forest is listed in the National Register. There would be no Section 4(f) take or use of this property as a result of the Preferred Alternative. See **Chapter III Section B.1** for more discussion.

8. Indirect and Cumulative Effects (ICE)

The Code of Federal Regulations (40 CFR 1508) defines indirect (or secondary) effects as impacts that are "caused by the action and are later in time or farther removed in distance, but still reasonably foreseeable." Secondary effects are also referred to as induced impacts because they are the type of impacts that would not or could not occur if it were not for the implementation of the project. Secondary effects include those that occur farther away in space or time from the direct effects of the action – in this case, the US 113 project. Secondary effects may also occur if the action changes the extent, pace, and/or location of development, and if this change affects environmental resources.

Cumulative effects are the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions." Cumulative effects occur when there are additive impacts to a particular resource resulting from the proposed action in conjunction with other development projects, regardless of whether there is a causative relationship between the development project and the action.

Secondary Effects

Secondary effects in the study area are anticipated to be minor. Generally, secondary effects include changes in land use, zoning, or population as a result of, but not directly due to, the implementation of a build alternative. No transportation, residential, or commercial development projects are dependent on the completion of a US 113 build alternative. Because the Preferred Alternative is on the existing alignment, development along the corridor after construction would be similar to the pattern that exists today.

Secondary effects could also result from changes in accessibility and changes in the greater community structure (cohesion, interactivity, changes in location of some businesses) resulting from the implementation of a build alternative occurring near the areas of direct impacts. Most of the impacts will be located at interchanges/access points where development could occur, depending upon the alternative selected. The Preferred Alternative would generally limit access points along US 113, thus discouraging sprawl-type development along the corridor.

There may, however, be secondary effects to two historic properties, Teddy's Tavern and The Ellendale State Forest Picnic Facility. The US 113 project would result in the closing of access to Teddy's Tavern directly from US 113. Instead, access would be limited to a dead-end local road reached via the interchange at SR 16. The proposed change in access has the potential to diminish the volume of business, conceivably leading to closure, and the ultimate neglect and deterioration of the property.

Access to The Ellendale State Forest Picnic Facility would also be compromised. Because of safety reasons, the existing center median turning lane at the north end of the picnic rest area facility would be removed. In addition, all turn around median breaks would be effectively eliminated except at interchange or designated locations. Thus, from an impact perspective, there would no longer be viable access to the picnic rest area from southbound US 113. In order for southbound traffic to access the picnic rest area facility, it would have to reverse travel direction at the nearest interchange (Redden Road), approximately 3.4 miles south of the property. This could also have the cumulative effect of an underutilized state facility leading to its closure and endangerment.

Cumulative Effects

If the US 113 project directly or secondarily affects a resource, there is potential for cumulative effects to occur if another development or project affects the same resource. There are few direct impacts anticipated from the implementation of the Preferred Alternative. Because there is limited development within the US 113 Ellendale vicinity, at this time, there are no known development projects that, together with the US 113 Ellendale Project, would have a combined effect on environmental resources.

County, city and town master plans identify goals for land preservation and focus growth and development in suitable areas within their jurisdictions. Generally growth is restricted through zoning and various subdivision ordinances. The current land use, zoning and Livable Delaware Strategies within the project area guide development. These guides have and will continue to help minimize the amount of agricultural land lost to development and direct development and redevelopment into more suitable areas.

Future land use within the project area will be primarily influenced by the recommendations of the current comprehensive plans, land use plans and zoning, and state planning initiatives like *Livable Delaware*. The comprehensive plans include recommendations for growth and zoning for future development.

The *2007 Sussex County Comprehensive Plan Update* includes the following goals which will influence Sussex County's future land use policies:

- Direct development to areas that have community services or can secure them cost effectively.
- Conserve the County's agricultural economy by promoting farming and preserving agricultural land values.
- Protect critical natural resources, such as the inland bays, by guarding against over-development and permanently preserving selected lands.
- Encourage tourism and other responsible commercial and industrial job providers to locate and invest in the county.
- Expand affordable housing opportunities, particularly in areas near job centers.
- Ensure that new developments incorporate preserved useable open space and other best practices in subdivision design.
- Make Sussex County's growth and conservation policies clear to relevant Delaware State agencies, neighboring counties and Sussex County's incorporated municipalities.

IV. AGENCY AND PUBLIC COORDINATION

A. Agency Coordination

Agency coordination for the Ellendale project was initiated on July 8, 2004. It was recommended during project scoping that the Ellendale portion of the US 113 North / Study be evaluated under an Environmental Assessment.

The revised Notice of Intent (NOI) was published in the Federal Register on October 8, 2008 to identify DelDOT's intent to evaluate the US 113 project under the NEPA process in four separate environmental documents (Milford, Ellendale, Georgetown, and Millsboro-South).

Meetings were held with the environmental resource and regulatory agencies to keep them up to date on the project progress and community involvement efforts throughout the project development process. Attendees included representatives from the following agencies:

1. US Army Corps of Engineers
2. Environmental Protection Agency
3. US Fish and Wildlife Service
4. Federal Highway Administration
5. Delaware Department of Natural Resources and Environmental Control
6. Delaware State Historic Preservation Office
7. Delaware Department of Agriculture
8. Delaware Office of State Planning Coordination

Meetings were generally conducted at three month intervals, piggybacking on DelDOT's Joint Permit Review meetings, and were supplemented with field reviews as needed. As alternatives were developed, they were presented, along with their impacts, to the agencies for consideration and comment. Agency coordination meetings were held on:

1. July 8, 2004
2. September 8, 2004
3. October 14, 2004
4. January 13, 2005
5. April 20, 2005
6. July 14, 2005
7. September 9, 2005
8. January 12, 2006
9. April 13, 2006
10. October 23, 2008
11. December 2, 2008
12. January 13, 2009
13. February 19, 2009
14. March 26, 2009
15. May 28, 2009
16. July 7, 2009
17. September 24, 2009
18. November 4, 2009
19. December 10, 2009

The agencies focused their attention on the Preferred Alternative and related options and efforts to minimize impacts.

B. Public and Community Involvement

Involvement with the public and the local community began early in the Ellendale portion of the US 113 North/South Study with stakeholder interviews, the formation of a Working Group (meetings open to the public), a public outreach program that included mailings, announcements, a project website, and Public Workshops. The public included impacted or involved historic property owners. The public did not have any views on historic properties.

1. Listening Tour

Early in the project development process the project team conducted a Listening Tour to provide stakeholders with the opportunity to ask questions and to share ideas, thoughts, and comments. The Listening Tour was comprised of 22 individuals from the Ellendale area and included

residents, members of community associations and organizations, individuals from the Sussex County Planning and Zoning Commission, a real estate agent, the mayor of Ellendale, volunteers from the fire department and active police officers, as well as representatives from State government agencies such as the Delaware Department of Agriculture, Department of Natural Resources and Environmental Control, and Office of State Planning Coordination.

The comments and feedback from the Listening Tour included the following major themes:

- Development is impending and US 113 should be upgraded before it is too late
- Intersection improvements are needed at SR 16
- Ellendale should have a bypass north of town
- Accommodating through traffic could lead to an increase in traffic and would negatively impact the community
- Need to coordinate DelDOT and Town of Ellendale goals and future plans
- Highway improvements should be consistent with Town and County water and sewer plans
- Need to make provision for heavy farm equipment to cross US 113
- Ellendale would benefit from an expanded tax base (annexation of land between SR 213 and US 113, utilize potential economic opportunity at US 113 and SR 16)
- Need to support and expand businesses, housing, and community services
- Environmental concerns include: protection of forest land, environmentally sensitive stream crossings, and preserve farmland
- Expanded bus service is needed

The feedback received through the Listening Tour interviews provided the project team with a more complete understanding of the public's attitude, perceptions, and interests regarding the proposed project.

2. Working Group

The Listening Tour interviews also provided insight to determine candidates for the Working Group. A 20 member Working Group, with interests throughout the Ellendale study area, was established and met 6 times between July 2004 and November 2005.

The Working Group was comprised of individuals representing the following organizations, businesses and agencies:

- Delaware State Housing Authority
- Clendaniel Farms, Inc.
- Delaware Department of Agriculture
- New Hope Recreation and Development Center
- Philadelphia Pentecostal Holiness Church
- Town of Ellendale (Resident)
- Town of Ellendale (Mayor)
- Town Board (Secretary)
- Sussex County Planning & Zoning Commission
- Nutter Associates

- Mt. Zion A.M.E. Church
- Delaware Department of Agriculture Forest Service
- First State Community Action Agency
- Police Department (Chief)
- Office of State Planning Coordination
- Ellendale Volunteer Fire Company (Chief)
- Ellendale Civic Association (President)

A summary of the topics covered during each Working Group meeting follows:

Meeting #1- July 20, 2004
The first meeting of the Ellendale Working Group served as an introductory meeting. Topics covered were:

- US 113 Video – "The Time to Act is Now"
- Working Group Introductions
- Purpose and Role of the Working Group
- Introduction of the Project Team
- Working Group Guidelines
- Summary of Stakeholder Listening Tour
- Project Purpose and Need
- Vision, Goals and Objectives
- Summary of Land Use Plans and Proposals
- Developing and Evaluating Alternatives

Meeting #2 - September 13, 2004
Topics covered at the second Working Group Meeting included:

- Review of the Working Group Guidelines
- Review of the Vision, Goals and Objectives
- Environmental Constraints Map
- Comprehensive Plan Update
- Transit Issues
- Review of the Preliminary Alternatives in small breakout groups and a group discussion

Meeting #3 - October 19, 2004
Meeting #3 of the Working Group was devoted to reviewing updates to the alternatives in small breakout groups as well as in a group discussion.

Meeting #4 - February 22, 2005
Meeting #4 of the Working Group was devoted to presenting and discussing the alternatives.

Meeting #5 - April 26, 2005
Meeting #5 of the Working Group was devoted to presenting and discussing additions and modifications to the alternatives.

Meeting #6 - November 15, 2005
The final meeting of the Working Group covered Public Workshop Feedback, Comments from the Resource Agencies, and the Project Team alternative recommendations.

All of the Working Group meetings were open to the community and were conducted in the study area at the Ellendale Fire Hall to allow accessibility to the meetings. There was considerable public interest in the project as demonstrated by the public attendance at the Working Group meetings.

3. Public Workshops

Three (3) Public Workshops in the Ellendale area provided the greater community with the opportunity to view displays, hear presentations, and offer comments regarding the alternatives. Public Workshops were held on the following dates:

1. November 18, 2004
2. May 17, 2005
3. January 23, 2006

In addition, Public Workshops for the Milford area and Georgetown-South area of the US 113 North/South Study included copies of the Ellendale Area information to provide additional opportunity for the Ellendale community and the greater study area community to comment on the Ellendale alternatives.

Topics covered at the workshops included: Workshop #1- project purpose and need, potential range of alternatives and assessment of effects, environmental and cultural resources in the area; Workshop #2- preliminary alternatives and assessment of effects; and Workshop #3- Preferred Alternative. A Public Workshop summary booklet was prepared for each workshop. The booklet included the meeting displays, public notices, photographs, media coverage, attendance sheets, comments received at the workshops and through the public comment period, and a summary of the public comments.

4. Project Website

Since the inception of the US 113 North/South Study in 2003/2004, DelDOT has maintained a project website (www.deldot.gov/information/projects/us113) inclusive of the four areas that comprise the study area: Milford Area, Ellendale Area, Georgetown Area, and Millsboro-South Area. Much of the information on the website pertains to the entire US 113 study area including overall project information, the environmental process, public involvement efforts, travel and traffic information. There are several sections of the website where Ellendale-specific information is presented.

Under the section “Working Group Information”, there are links to each of the six Working Group meetings held in Ellendale including links to each meeting’s agenda and meeting minutes as well as other documents including the Working Group membership list, the purpose and role of the Working Group, Working Group guidelines, goals and objectives, and a schedule of all meetings. In addition, the PowerPoint presentations for meetings 1, 2, and 4 are available for viewing.

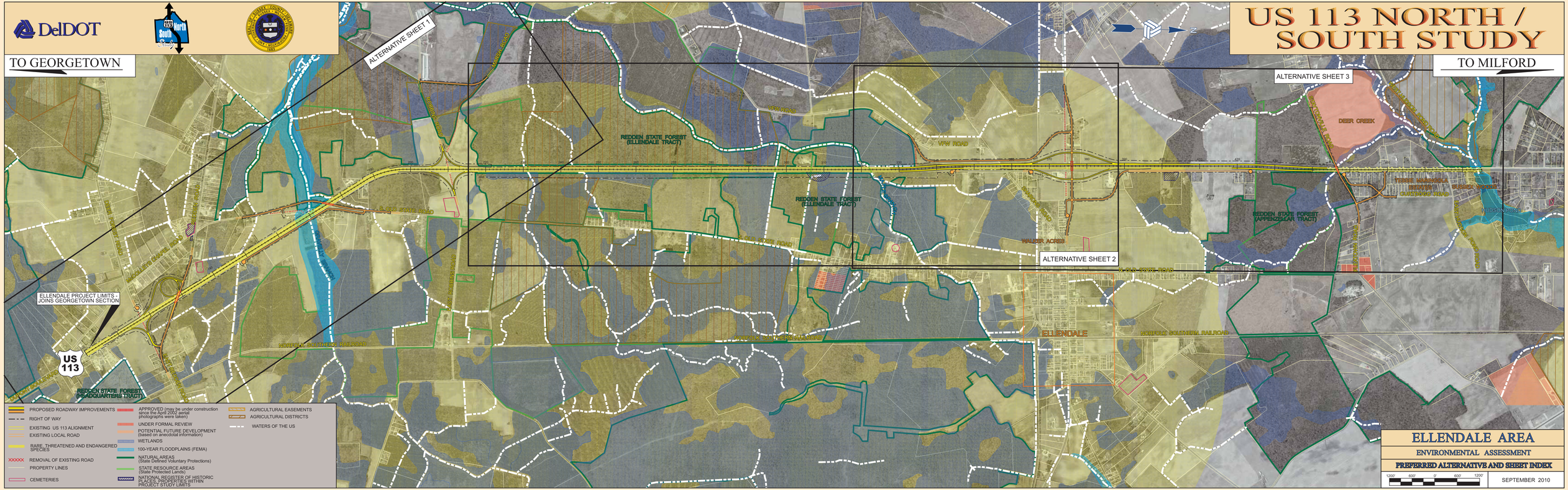
Under the section “Public Workshops”, information from the two public workshops (November 18, 2004 and May 12, 2005) is available. The available information includes: display boards, workshop handouts, alternatives mapping, comment forms, and summary of comments received.

5. Other Public Involvement Efforts

A mailing list was developed from sign-in sheets at every meeting and continuously updated. The mailing list was used to distribute meeting announcements and project updates.

The EA will be made available for public review and opportunity to comment. References for this EA may be found in the project files maintained by DelDOT.

Appendix A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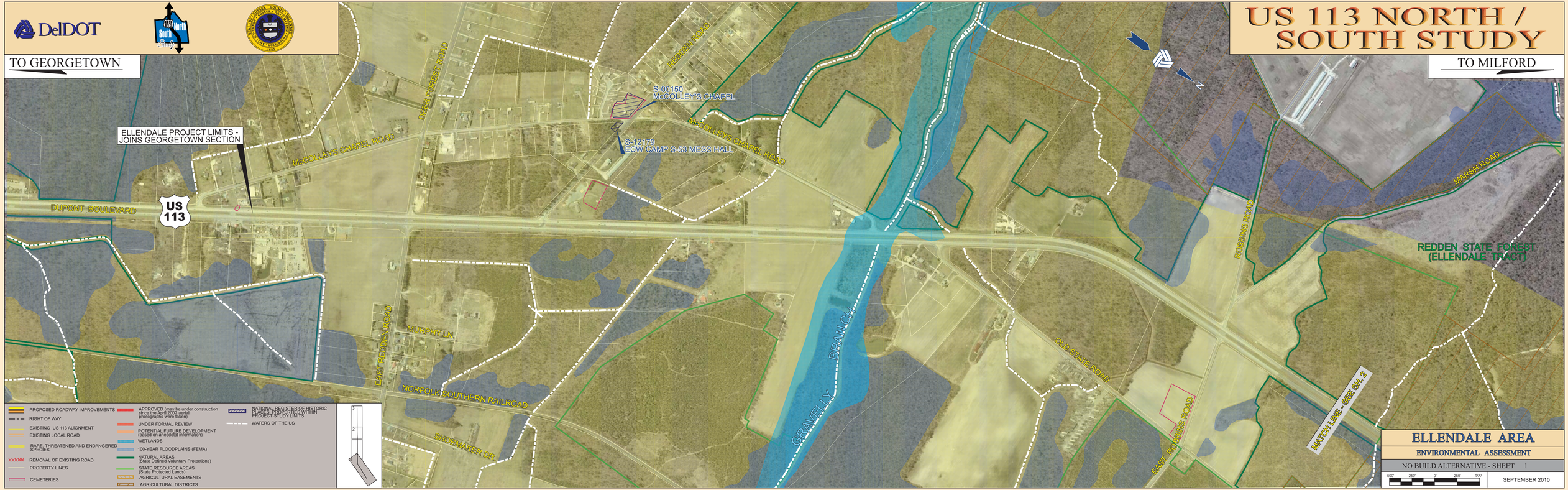
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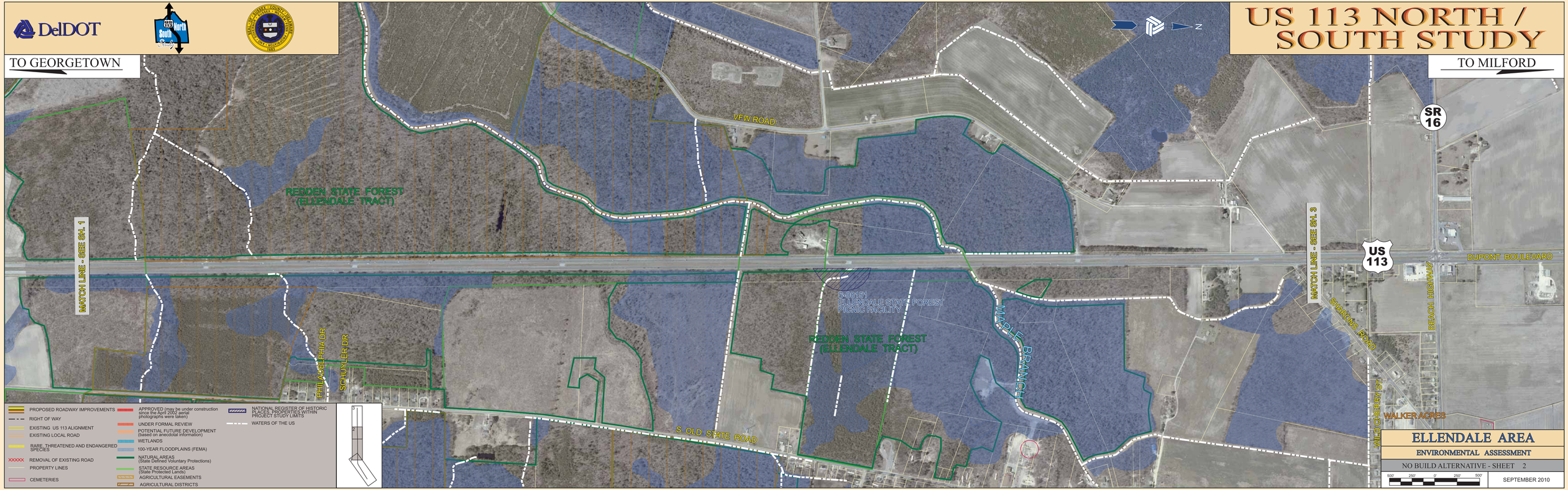
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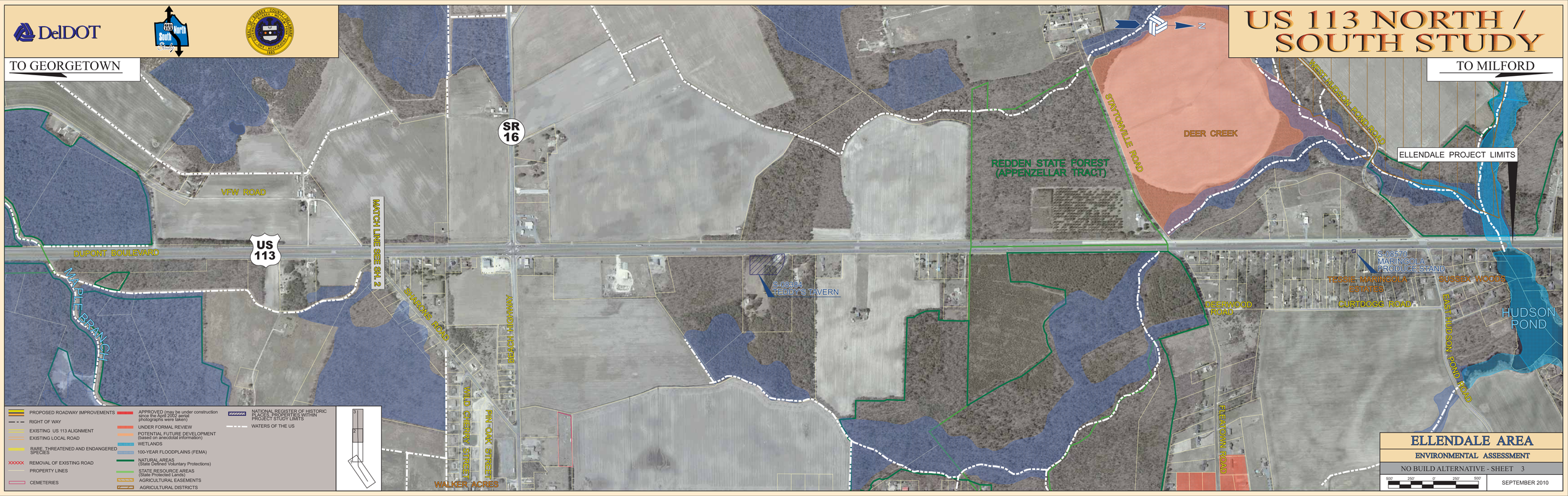
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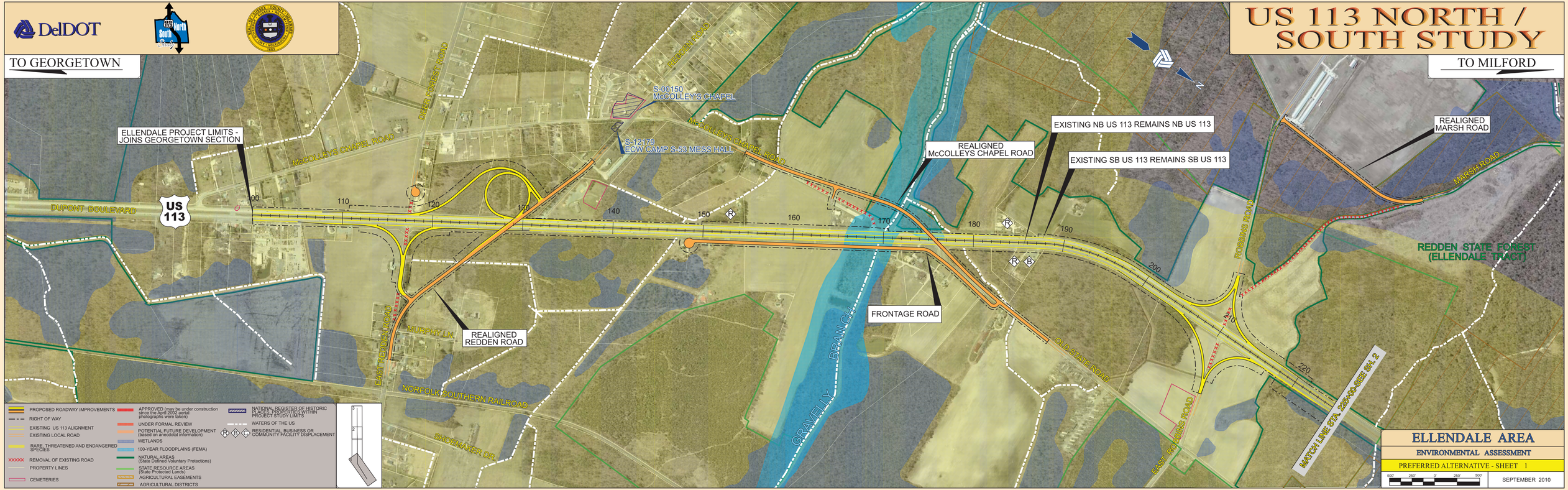
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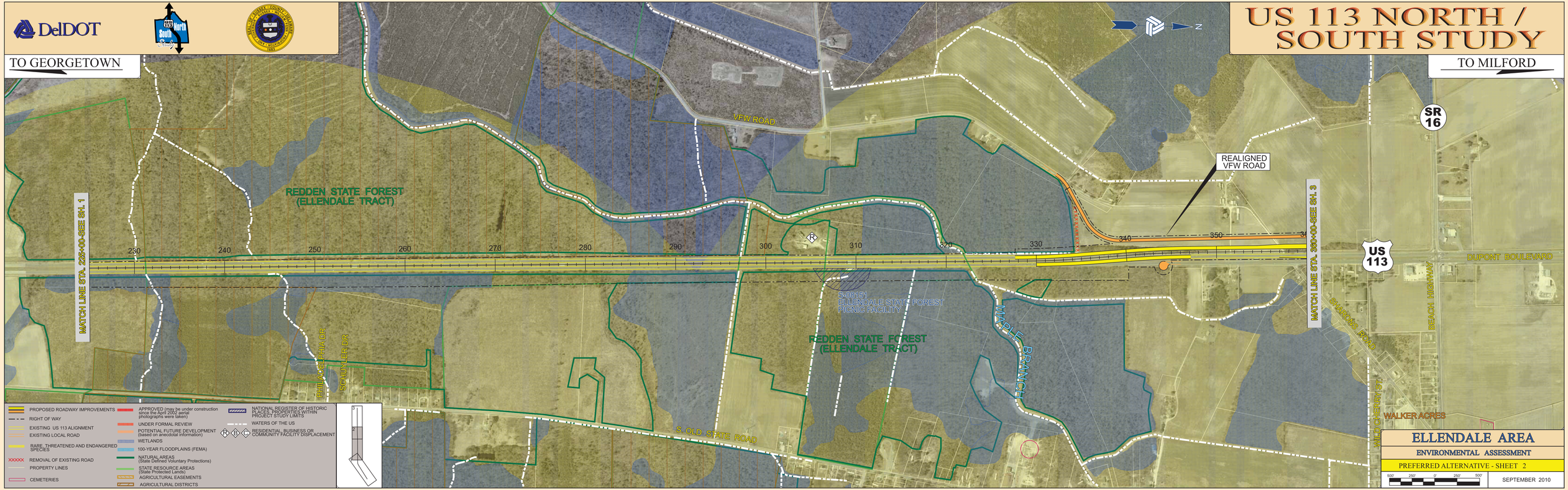
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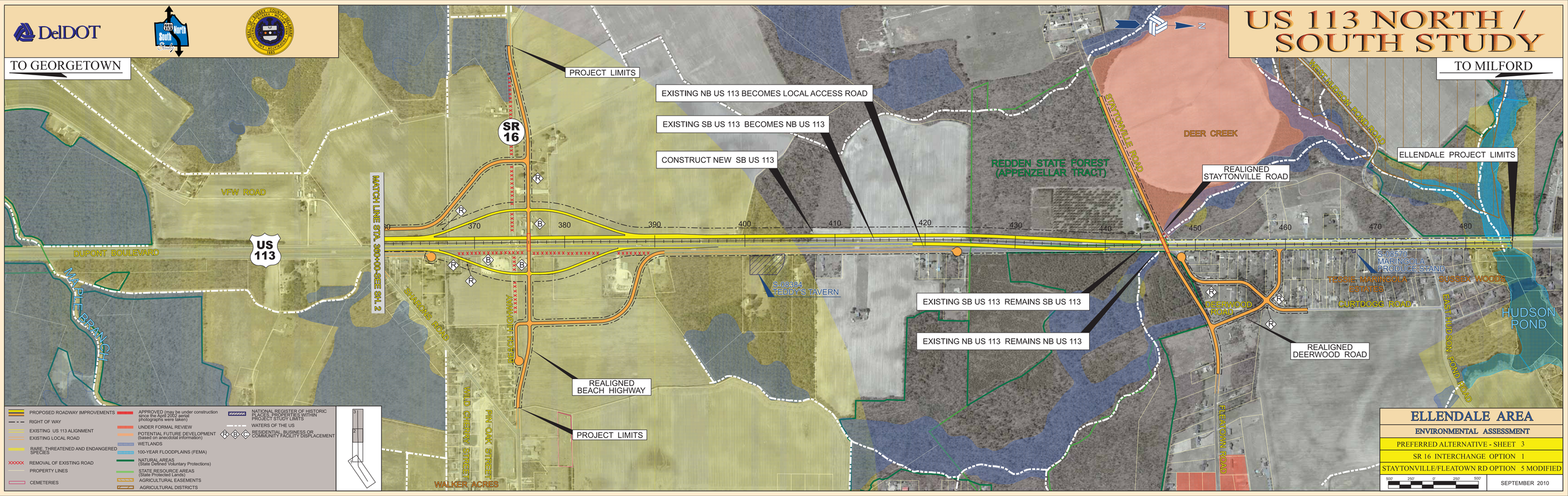
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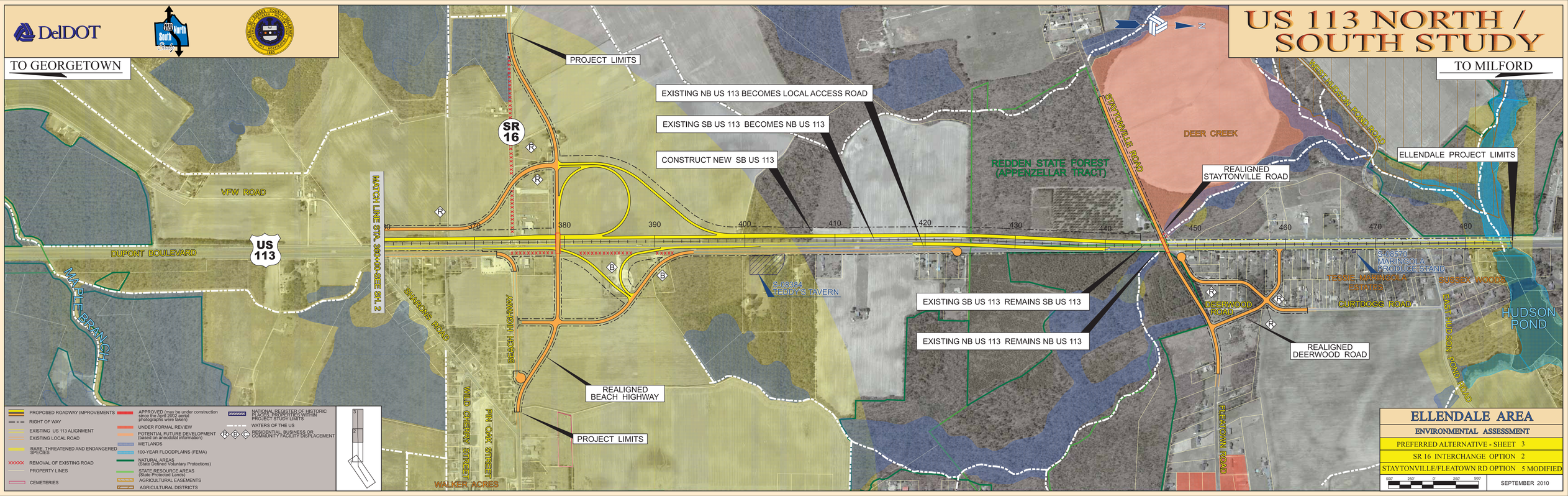
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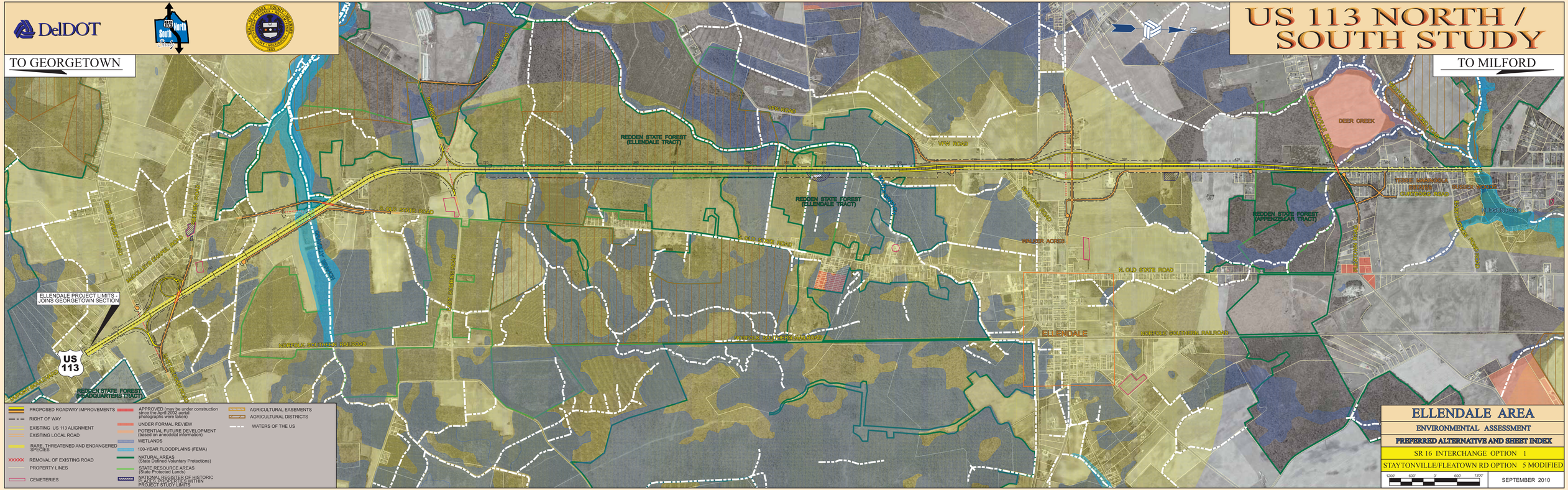
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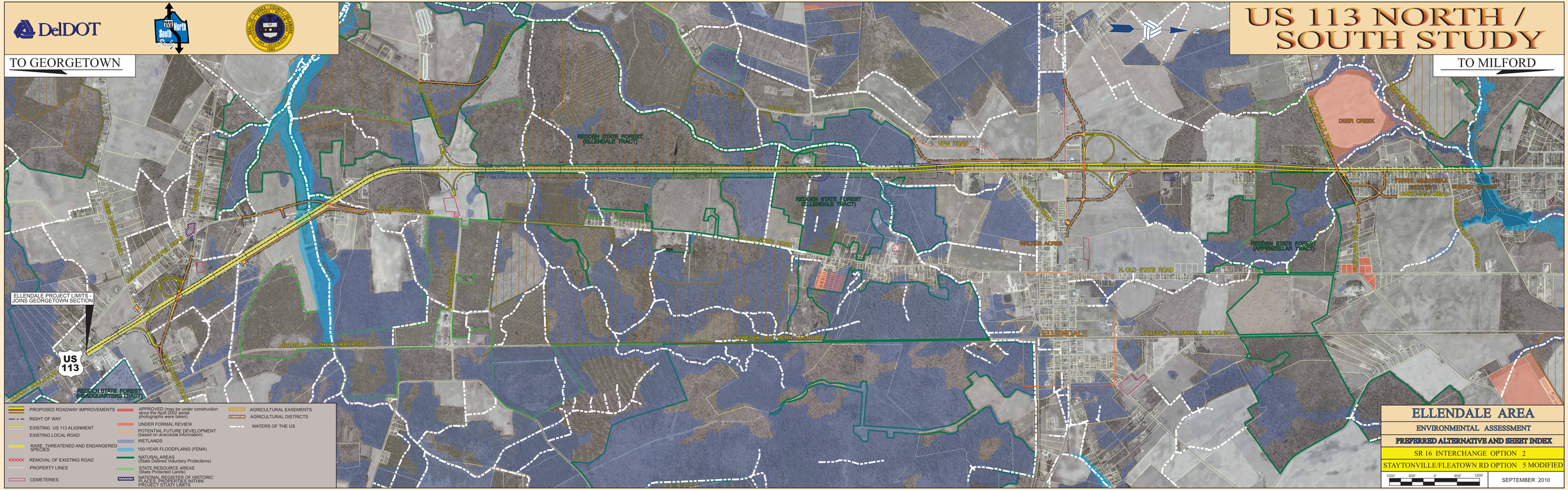
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Appendix B

SECTION 106 MEMORANDUM OF AGREEMENT (MOA)

AMONG THE FEDERAL HIGHWAY ADMINISTRATION, THE DELAWARE STATE HISTORIC PRESERVATION OFFICE, AND THE DELAWARE DEPARTMENT OF TRANSPORTATION

REGARDING IMPLEMENTATION OF THE U.S. 113 NORTH/SOUTH STUDY - ELLENDALE AREA, SUSSEX COUNTY, DELAWARE

STATE CONTRACT NUMBER: 22-127-01
FEDERAL AID NUMBER: TBD

WHEREAS, the Federal Highway Administration (FHWA) with the Delaware Department of Transportation (DelDOT) propose to construct approximately seven (7) miles of transportation improvements including, but not limited to, bridge overpasses and grade separated interchanges along U.S. 113 in the Ellendale area of Sussex County, Delaware, hereon referred to as the "Project"; and

WHEREAS, FHWA in consultation with the Delaware State Historic Preservation Office (DE SHPO) and DelDOT has established the Project undertaking's Area of Potential Effect (APE), as defined in 36 CFR Part 800.16(d), as those areas within the Limit of Construction (LOC), Temporary Construction Easements (TCE), Permanent Easements (PE), Right of Way (ROW), and adjacent or contiguous properties where visual effects may occur **(see Attachment A)**; and

WHEREAS, FHWA has consulted with the DE SHPO, in accordance with Section 106 of the National Historic Preservation Act, 16 U.S.C. Part 470, and its implementing regulations (36 CFR Part 800), to resolve any adverse effects that may occur as a result of this Project undertaking; and

WHEREAS, FHWA has afforded the public an opportunity to comment on the effects of the Project undertaking on historic properties through the National Environmental Policy Act (NEPA) of 1969, as amended, and through DelDOT's Public Involvement Procedures; and

WHEREAS, FHWA has elected to phase the identification and evaluation of historic properties as provided in 36 CFR Part 800.4(b)(2), but will ensure that DelDOT completes the process in a timely manner, to allow practical opportunities to avoid or minimize adverse affects to historic properties, as stipulated under this Memorandum of Agreement (MOA); and

WHEREAS, within the current APE (Attachment A), FHWA and DelDOT have identified and evaluated buildings, structures and districts built in or before 1962; and

WHEREAS, FHWA acknowledges that in the extensive period it will take for DelDOT to complete the Project, additional buildings, structures or districts in the APE will come to meet the minimum fifty (50) year age criterion for historic properties, and FHWA shall address such properties through the process stipulated in this MOA; and

WHEREAS, to date FHWA, pursuant to 36 CFR Part 800.4, has determined that, within the APE, the following properties are listed in or are eligible for inclusion to the National Register of Historic Places:

Teddy's Tavern (Cultural Resource Survey Number S08383);
The Ellendale State Forest Picnic Facility (S08151); and
Maringola Produce Stand (S08570); and
McColley's Chapel (S00150); and
ECW Camp S-53 Mess Hall (S12179); and

WHEREAS, FHWA, in consultation with the DE SHPO, has applied the criteria of adverse effect to known historic properties; and

WHEREAS, FHWA through DelDOT has determined that the Project will have no effect on:

Maringola Produce Stand (S08570); and

WHEREAS, FHWA, through DelDOT has determined that this Project will have no adverse effect on:

McColley's Chapel (S00150); and
ECW Camp S-53 Mess Hall (S12179); and

WHEREAS, FHWA, through DelDOT has determined that this project will have an adverse effect on:

Teddy's Tavern (S08383);
The Ellendale State Forest Picnic Facility (S08151); and

WHEREAS, FHWA has determined that the Project may also affect as yet unidentified historic properties that have not been subject to prior cultural resource investigations, such as areas that are associated with proposed alignment modifications or other Project-related ancillary activities including, but not limited to, stormwater management facilities, wetland mitigation sites, reforestation areas, staging, stockpiling and access areas, and disposal sites, and that the APE may need to be revised to consider such areas; and

WHEREAS, FHWA and DelDOT have notified the Advisory Council on Historic Preservation (ACHP) and the DE SHPO of their intent to use the NEPA process for Section 106 purposes (36 CFR Part 800.8(c)). The ACHP declined to participate in the consultation on June 24, 2010. However, if through the process outlined in this MOA, the signatories find that other historic properties may be adversely affected later in time, coordination with the ACHP may resume; and

WHEREAS, FHWA has contacted the Delaware Nation and the Stockbridge-Muncee Tribe concerning the Project. The Delaware Nation has previously indicated its interest in being a

consulting party to all projects within the State of Delaware, and therefore has been invited to participate in developing this MOA; and

WHEREAS, FHWA and DelDOT will include the binding commitment made under this MOA in the Environmental Assessment for the Project, in accordance with 36 CFR Part 800.8(c)(4)(i)(B), and

WHEREAS, DelDOT participated in the consultation, has responsibilities for implementing stipulations under this MOA, and has been invited to be a signatory to this MOA, pursuant to 36 CFR Part 800.6(c)(2); and

NOW, THEREFORE, FHWA, DE SHPO, and DelDOT agree that the Project will be implemented in accordance with the following stipulations, in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

FHWA shall ensure that the following stipulations are implemented:

I. Archaeological Resources

Within one (1) year of the execution of this MOA and NEPA approval of the selected alternative, DelDOT shall establish a Plan for funding and scheduling the archaeological program outlined in this Stipulation, to ensure that investigations will be completed in advance of construction or other ground disturbing activities. The Plan shall take into account the projected schedules for right of way acquisition, development of project plans, and construction of the Project. DelDOT shall provide the FHWA and DE SHPO with a copy of the Plan.

Should DelDOT acquire any land for the purposes of this Project prior to completing the archaeological program outlined in this Stipulation, DelDOT's Environmental Studies personnel shall, in consultation with the DE SHPO and FHWA, determine if the parcel(s) have the potential to contain archaeological sites. If so, DelDOT shall not permit any ground disturbing activities (including but not limited to building demolition, staging, stockpiling, etc.) to occur on the parcel(s) until such time as the necessary surveys or mitigation have been completed.

A. Identification/Evaluation

Prior to starting construction or other ground disturbing activities, FHWA and DelDOT, in consultation with the DE SHPO, shall conduct and complete identification level archaeological surveys (Phase I) within the APE for the Project, and will determine if identified sites will require a Phase II level archaeological survey to evaluate their National Register of Historic Places eligibility. Evaluation Studies (Phase II) may require additional background research and/or additional field excavations. All surveys shall conform to the requirements of Stipulation VII. of this MOA.

DelDOT shall prepare reports on findings of the archaeological identification/evaluation surveys and submit the reports to the DE SHPO for review and concurrence. Upon receipt of the document, the review period will be thirty (30) days. FHWA and DelDOT will take into account comments and will recommend any next steps.

During the Evaluation Studies (Phase II), FHWA and DelDOT shall apply the National Register criteria (36 CFR Part 60.4), in accordance with 36 CFR Part 800.4(c), taking into account applicable historic contexts and management plans developed for Delaware's historic and prehistoric archaeological resources.

If FHWA and DelDOT determine that any of the National Register criteria are met, and the DE SHPO agrees, the archaeological site(s) shall be considered eligible for the National Register.

If FHWA and DelDOT determine that the National Register criteria are not met, and the DE SHPO agrees, the archaeological site(s) shall be considered not eligible for the National Register.

Based on the Evaluation Studies (Phase II), should a signatory to this agreement not agree on the eligibility determination of an archaeological site(s), DelDOT and FHWA shall obtain a determination from the Secretary of the Interior, pursuant to 36 CFR Part 800.4(c)(2), and 36 CFR Part 63.2(c) and 63.3(d).

B. Effect Determination/Mitigation

If eligible archaeological sites are identified and affected within the APE, DelDOT will make a reasonable effort to avoid these sites or minimize impacts to them. If the eligible sites cannot be avoided, DelDOT will apply the Criteria of Adverse Effect in accordance with 36 CFR Part 800.5.

If the Project will have an adverse effect on archaeological sites, DelDOT, in consultation with the DE SHPO, shall develop a treatment plan. The treatment plan may include elements of data recovery and/or an alternative mitigation plan.

DelDOT shall submit the treatment plan to the DE SHPO, the Delaware Nation, and other interested or consulting parties that may be identified later in time, for their review and comment. Upon receipt of the document, the review period will be thirty (30) days. Following thirty (30) days, DelDOT will take into account any comments and will recommend any next steps.

Should data recovery investigations be warranted, DelDOT and FHWA shall ensure that a data recovery plan is developed in consultation with the DE SHPO, and other consulting parties or interested parties. The plan shall specify, at a minimum:

- the property, properties, or portions of properties where data recovery is to be carried out, and any property that will or may be destroyed without data recovery;
- research questions to be addressed through data recovery, with an explanation of their relevance and importance;

- the research methods to be used, with an explanation of their relevance to the research questions;
- the methods to be used in analysis, data management, and data dissemination, including a schedule;
- a provision for assessing materials that may be in need of conservation;
- proposed disposition of recovered materials and records;
- proposed methods for involving the interested public in the data recovery, and for disseminating the results of the work to the interested public;
- a proposed schedule for the submission of progress reports to the DE SHPO; and
- provisions to meet on-site in order to evaluate the success of the initial fieldwork phase of any data recovery program, and again near the end of the fieldwork efforts to validate substantial completion.

When or if an alternative mitigation strategy is chosen and approved by the DE SHPO, FHWA, and DelDOT, it may include but is not limited to: analysis and synthesis of past data accumulated through the DE SHPO, FHWA, and DelDOT projects, update of the relevant DE SHPO and DelDOT cultural resource-related websites and GIS databases; development of historic and prehistoric contexts and preservation priorities; statewide predictive models; development of travel or informational displays with the cultural resource work for this Project; oral histories or documentaries related to the project APE and vicinity; virtual tour/website about the archaeological sites being mitigated in the APE; and improved archaeological data management and access for both DE SHPO and DelDOT.

DelDOT will complete all necessary data recovery fieldwork prior to commencing construction in the site areas. Alternative mitigation may or may not be completed prior to commencing construction in the site areas.

DelDOT shall provide all draft and final archaeological reports and public information materials to the DE SHPO for their review and comment. DelDOT shall also provide all such reports and materials that pertain to Native American archaeological sites to the Delaware Nation for their review and comment. DelDOT will take into account any comments received. All final reports shall meet the *Secretary of the Interior's Standards and Guidelines for Archaeological Documentation* (48 FR 44734-37), while also satisfying the necessary DE SHPO's guidelines for archaeological surveys or investigations.

C. Public Involvement

If mitigation is necessary, DelDOT will prepare a public participation plan and public information materials. DelDOT shall submit the proposed action plan(s) with any materials to FHWA, DE SHPO, the Delaware Nation, and other consulting or interested parties that may be identified for their review and comment. Upon receipt of the materials, the review period will be thirty (30) days. Following thirty (30) days, DelDOT will take into account any comments received, and will recommend any next steps, if necessary, to the FHWA, DE SHPO and the Delaware Nation.

The public participation plan may include, but is not limited to archaeological site tours for the public and educational groups. The specific public outreach materials produced will be determined individually for each site for which mitigation is necessary and may include, but are not limited to pamphlets, videos, historical markers, brochures, websites, exhibits, displays for public buildings booklets on the history or prehistory of the Project area, lectures or presentations at academic conferences, and/or public institutions such as schools and historical societies.

DelDOT shall distribute the public information materials to other consulting parties, interested parties, local schools, historical societies, libraries, museums and/or other venues and individuals deemed pertinent in consultation with the DE SHPO, FHWA and the Delaware Nation.

D. Registration of Site(s)

After completion of the data recovery effort, DelDOT shall, in consultation with the DE SHPO, and other interested parties, as deemed appropriate by FHWA, reevaluate the site(s) to determine if it has yielded and/or may still yield information important in the prehistory or history of Delaware. If DelDOT and the DE SHPO agree that the site(s) still meets the Criteria for Eligibility to the National Register of Historic Places, then DelDOT shall prepare (or instruct its qualified cultural resource consultant to prepare) a Determination of Eligibility form for possible use as a formal nomination to the National Register of Historic Places for the remaining areas of the site(s), and submit it to the DE SHPO for review and further revision, as necessary.

E. Curation

DelDOT shall ensure that all records and materials resulting from the archaeological investigations will be processed, prepared for, and curated in accordance with 36 CFR Part 79 and the Division of Historical and Cultural Affairs (DHCA) "*Guidelines for the Curation of Archaeological Collections*" (2001).

These records and materials shall be curated at the DHCA, or its designee, following the policies of the institution, except as may be provided for under the following paragraph.

As part of the Public Involvement efforts outlined in Stipulation I.C. of this Agreement, FHWA, DelDOT and DE SHPO will consult to determine if any archaeological materials may be loaned to a public museum or other public institution for the purposes of exhibit or research, following the Division's loan policy and procedures. Such loans and exhibits may occur only after the curatorial procedures, referenced in the first paragraph in this stipulation, have been completed. As deemed appropriate by FHWA, DelDOT, and the DE SHPO, the Delaware Nation and other consulting or interested parties identified later in time will be consulted concerning curation and any public exhibition of artifacts.

F. Discovery of and Treatment of Human Remains and Burials

DelDOT Environmental Studies and/or appropriate DelDOT construction engineering staff shall immediately (within 24 hours) notify the DE SHPO and FHWA of the discovery of any human

remains encountered during the archaeological investigations or the project construction. DelDOT shall cease all activities that may disturb or damage the remains, and comply with the Delaware Unmarked Human Remains Act (7DE Code Chapter 54).

If the human remains are of Native American affiliation, then FHWA will immediately notify the Delaware Nation and the Stockbridge-Muncee Tribe (the Tribes). FHWA and DelDOT will forward information regarding Native American discoveries to the DE SHPO and the Tribes for review and comments. This will occur as soon as possible, within a period no longer than two (2) weeks. FHWA will request that the parties comment on the information within two (2) weeks of receipt. FHWA will then consult with the Tribes, the DE SHPO and DelDOT to determine an appropriate course of action in accordance with 36 CFR 800, and taking into account the above cited state law.

The DE SHPO will comply with the Native American Graves Protection and Repatriation Act of 1990 (PL 101-601) with regard to disposition of the remains and/or associated funerary objects, as applicable.

G. Residual Right of Way

The Project will require property acquisition that may or may not involve impacts to archaeological sites. Should existing right of way or lands acquired for purposes of the Project be later subdivided and/or declared excess right of way (to be leased, transferred, or sold), preservation covenants for that subject parcel will first be considered among DelDOT, FHWA, and DE SHPO before DelDOT takes any action to divest itself from such lands. The parties will determine if the subject parcel(s) contain, or has the potential to contain, any historic properties, and if so, determine the need for any legal instrument that would ensure long-term preservation of such properties. This will adequately address any reasonably foreseeable adverse effects that could occur due to transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions to ensure long-term preservation (or mitigation) of the property's historic significance (36 CFR Part 800.5(a)(2)(vii)).

II. Historic Buildings, Structures, and Districts

The Project will adversely affect the following historic properties by introducing changes in vehicular access and use to the property. Access is a key element in the significance of the resource and has correlated impacts upon the physical, functional, and setting features that contribute to their historic significance and viability as a historic property.

Teddy's Tavern (S-08383); and
The Ellendale State Forest Picnic Facility (S-08151)

To mitigate for the adverse effects to these two historic properties, DelDOT shall, in consultation with the DE SHPO and the property owners, develop conceptual plans for new travel information and/or directional signs. This also includes consideration of naming the converted service road to "Teddy's Tavern Road" or other mutually agreeable roadway name. DelDOT's Chief of Traffic will participate in the consultation. The intent of the roadside signs or new road

name is to ensure that the typical traveler has sufficient, safe, and advanced knowledge that the property exists and remains open and accessible despite changes or access limitations resulting from the Project.

Conceptual plans will include suggested number, size, location, and content of the signs. If approved by the historic property owner, DelDOT shall install the signs in accordance with the agreed upon plans.

*DelDOT shall place t*he travel information or directional signs for each property *in locations that conform to* DelDOT's Manual on Uniform Traffic Control Devices (MUTCD) (http://deldot.gov/information/pubs_forms/manuals/de_mutcd/index.shtml), FHWA Policy, *and Sussex County code, as applicable.*

DelDOT shall install the travel information or directional signs prior to or as part of the Project.

Being within state right of way, the travel or directional signs will be permanent fixtures and will remain "in perpetuity" under management of DelDOT's Traffic or Sign Shop Section so long as historic buildings, structures, or other fixtures remain visible from the U.S. 113 corridor and remain open for public use. This will alert the vehicular traveler on how access can be achieved to either facility.

The travel or directional signs for the historic properties may be combined, updated, or replaced with similar amenities for other roadside businesses or attractions that may be installed during the Project or later in time.

During the annual review of this MOA, mandated in Stipulation X, DelDOT shall consult with the DE SHPO and FHWA to determine the need for additional survey for buildings, structures, or districts that have come to meet the minimum fifty (50) year age criterion. If so needed, DelDOT shall identify and evaluate any additional such properties, and assess the effects of the Project thereon, following the process outlined for Archaeological Resources in Stipulations I.A. and I.B. of this MOA.

III. Unexpected Discoveries

In the event that previously unidentified cultural resources are discovered or unanticipated effects to historic properties occur during construction, DelDOT shall instruct the contractor to cease construction in the immediate area, and immediately notify FHWA. FHWA shall comply with 36 CFR Part 800.13 by consulting with the DE SHPO. If said discovery or unanticipated effects pertain to resources of Native American affiliation, FHWA and DelDOT shall include the Delaware Nation in the consultation. The FHWA will notify the DE SHPO and the Delaware Nation within one (1) working day of the discovery. The FHWA, DelDOT, and the DE SHPO will meet at the location of the discovery within forty-eight (48) hours of the initial notification to determine appropriate treatment of the discovery prior to resumption of construction activities within the area of discovery. If the affected resource is of Native American affiliation, FHWA shall first consult with the Delaware Nation before implementing any such treatment option.

IV. Disposal of Project Related Materials

DelDOT shall consult with the DE SHPO concerning the location of the disposal of materials produced by any demolition, construction, excavation, and/or dredging associated with the Project. Upon the provision of adequate information, the DE SHPO will have thirty (30) days to review any and all such locations to ensure the disposal will not adversely affect historic properties. DelDOT shall notify the contractor, if the DE SHPO objects to the proposed disposal sites, and request alternative disposal site(s). In turn, this site(s) will be subject to DE SHPO review. DelDOT shall ensure that its contractors do not use any such site(s) if the activity may adversely affect historic properties.

V. Review of Project Related Plans

DelDOT shall provide copies of the preliminary, semi-final, and final design plans of the Project to the DE SHPO. FHWA will also notify the Delaware Nation of the availability of the plans, and if so requested, provide copies for their review and comment. The DE SHPO and the Delaware Nation as consulting parties will have thirty (30) days from the receipt of all materials to provide comments on the plans. DelDOT shall take into account any comments provided.

VI. Subsequent Changes to the Project

If DelDOT proposes any significant changes to the Project affecting location, design, methods of construction, materials, or footprint of the Project, DelDOT shall provide the DE SHPO, the Delaware Nation, and other consulting parties identified later in time with information concerning the proposed changes. The DE SHPO and consulting parties will have thirty (30) days from the receipt of this information to comment on the proposed changes. DelDOT shall take into account any comments, prior to implementing such changes.

Should changes occur, DelDOT, in consultation with the DE SHPO, may need to redefine the APE beyond the areas depicted in **Attachment A**. DelDOT shall consult with the DE SHPO to identify and evaluate historic buildings, structures, sites, and/or districts in any newly affected areas, and assess the effects of the Project thereon, following the process outlined for Archaeological Resources in Stipulations I.A. and I.B of this agreement, or as applicable under 36 CFR Part 800.13.

VII. Administrative Stipulations

A. Personnel Qualifications

All cultural resource work carried out pursuant to this agreement will preformed by or under the direct supervision of a person or persons meeting at a minimum the "*Secretary of the Interior's Standards and Guidelines*" (http://www.cr.nps.gov/local-law/Arch_Standards.htm), formerly 36 CFR Part 61 Appendix A.

DelDOT's Environmental Studies personnel will have direct authority to select and authorize any and all qualified cultural resource management firms or subconsultants to carry out this work on an as-needed basis throughout the duration of the Project.

B. Survey and Data Recovery Standards

DelDOT shall ensure that any and all cultural resource surveys and/or data recovery plans conducted pursuant to this MOA are done in accordance with the *Secretary of the Interior's Standards and Guidelines for Identification and Evaluation*, and for *Archaeological Documentation*, and in accordance with the DE SHPO's *Guidelines for Architectural and Archaeological Surveys in Delaware* (1993), as applicable.

Survey proposals and data recovery plans shall include a research design that stipulates: determination of objectives, methods, and expected results; production of draft and final reports; and preparation of materials for curation in accordance with Stipulation I.E., including budgeting for initial conservation assessments and treatment. Additional requirements for data recovery plans are found in Stipulation I.B. of this Agreement.

All data recovery plans shall also take into account the ACHP's guidance for *Recommended Approach for Consultation on Recovery of Significant Information from Archaeological Sites.* Reports will meet professional standards set forth by the Department of the Interior's "*Format Standards for Final Reports of Data Recovery Program*" (42 FR 5377-79).

All data recovery plans, public outreach, or future consultation shall also follow and/or consider any supplemental guidance and provisions provided by, but not limited to, the American Association of State Highway Transportation Officials, FHWA, Transportation Research Boards, National Park Service, ACHP, and/or recognized academic journals or professional organizations as identified by DelDOT and/or the DESHPO.

DelDOT shall ensure that all draft and final cultural resource reports are provided to the FHWA and DE SHPO within four (4) years of the completion of nay fieldwork. Relevant draft and final cultural resource reports will also be provided to the Delaware Nation.

VIII. Resolving Objections

Should any signatory to this MOA object in writing to FHWA regarding any action carried out or proposed with respect to the Project or implementation of this MOA, FHWA shall consult with the objecting party to resolve the objection. If after initiating such consultation FHWA determines that the objection cannot be resolved through consultation, FHWA shall forward all documentation relevant to the objection to the ACHP, including FHWA's proposed response to the objection. Within thirty (30) days after receipt of all pertinent documentation, the ACHP shall exercise one of the following options.

A. Advise FHWA that the ACHP concurs in FHWA's proposed response to the objection, whereupon FHWA shall respond to the objection accordingly;

B. Provide FHWA with recommendations, which FHWA shall take into account in reaching a final decision regarding its response to the objection; or

C. Notify FHWA that it will comment pursuant to 36 CFR Part 800.7(a) and proceed to comment. Any ACHP comment provided in response to such a request will be taken into account by FHWA in accordance with 36 CFR Part 800.7(c)(4).

Should the ACHP not exercise one of the above options within thirty (30) days after receipt of all pertinent documentation, FHWA may assume the ACHP's concurrence in its proposed response to the objection.

Any recommendation or comment provided by the ACHP will be understood to pertain only to the subject of the dispute; FHWA's responsibility to carry out all actions under this MOA that are not the subject of the objection will remain unchanged.

At any time during the implementation of the measures stipulated in this MOA, should any objection pertaining to any such measure or its manner of implementation be raised by a member of the public, FHWA shall notify the parties of this MOA and take the objection into account consulting with the objector and, should the objector so request, with any of the parties to this MOA to resolve the objection.

IX. Duration

This MOA shall remain in force until its Stipulations have been fulfilled. This time period shall not exceed five (5) years from the date of the final signature. If within six (6) months of the end of this five year period, stipulations remain unfulfilled, the parties to this Agreement will consult to determine if extension or other amendment of the Agreement is needed. No extension or amendment will be considered in effect unless all the signatories to the MOA have agreed to it in writing.

X. Review of Implementation

FHWA, DelDOT, and the DE SHPO shall review the Project annually to monitor progress of the implementation of the terms and conditions within this MOA. This review should occur in January of each year following the execution of the MOA.

XI. Amendments

Any signatory to this MOA may propose to FHWA that the MOA be amended, whereupon FHWA shall consult with the other parties to consider such an amendment, in accordance with 36 CFR Part 800.6(c)(7).

XII. Termination

A. If the FHWA or DelDOT determines that it cannot implement the terms of this MOA, or the

DE SHPO determines that the MOA is not being properly implemented, FHWA, DelDOT, or the SHPO may propose to the other parties that the MOA be terminated in accordance with 36 CFR Part 800.6(c)(8).

B. The party proposing to terminate this MOA shall notify all other parties to this MOA, explaining the reasons for proposing termination and affording them at least thirty (30) days to consult and seek alternatives to termination. The parties shall then consult.

C. Should all consultation fail, FHWA or the DE SHPO may terminate the MOA by so notifying all parties in writing.

D. Should this MOA be terminated, FHWA shall either:

1. Consult in accordance with 36 CFR 800.6(a)(1) to develop a new MOA or;

2. Request the comments of the ACHP pursuant to 36 CFR 800.7(a)(2)

Execution of this MOA by the FHWA, DE SHPO and DelDOT, and implementation of its terms is evidence that the FHWA has afforded the ACHP an opportunity to comment on the US 113 North/South Study – Ellendale Area Project and that the FHWA has taken into account the effects of the undertaking on historic properties.

FEDERAL HIGHWAY ADMINISTRATION

By: _____ Date: 8/12/10
Hassan Razza, FHWA Delmar Division Administrator

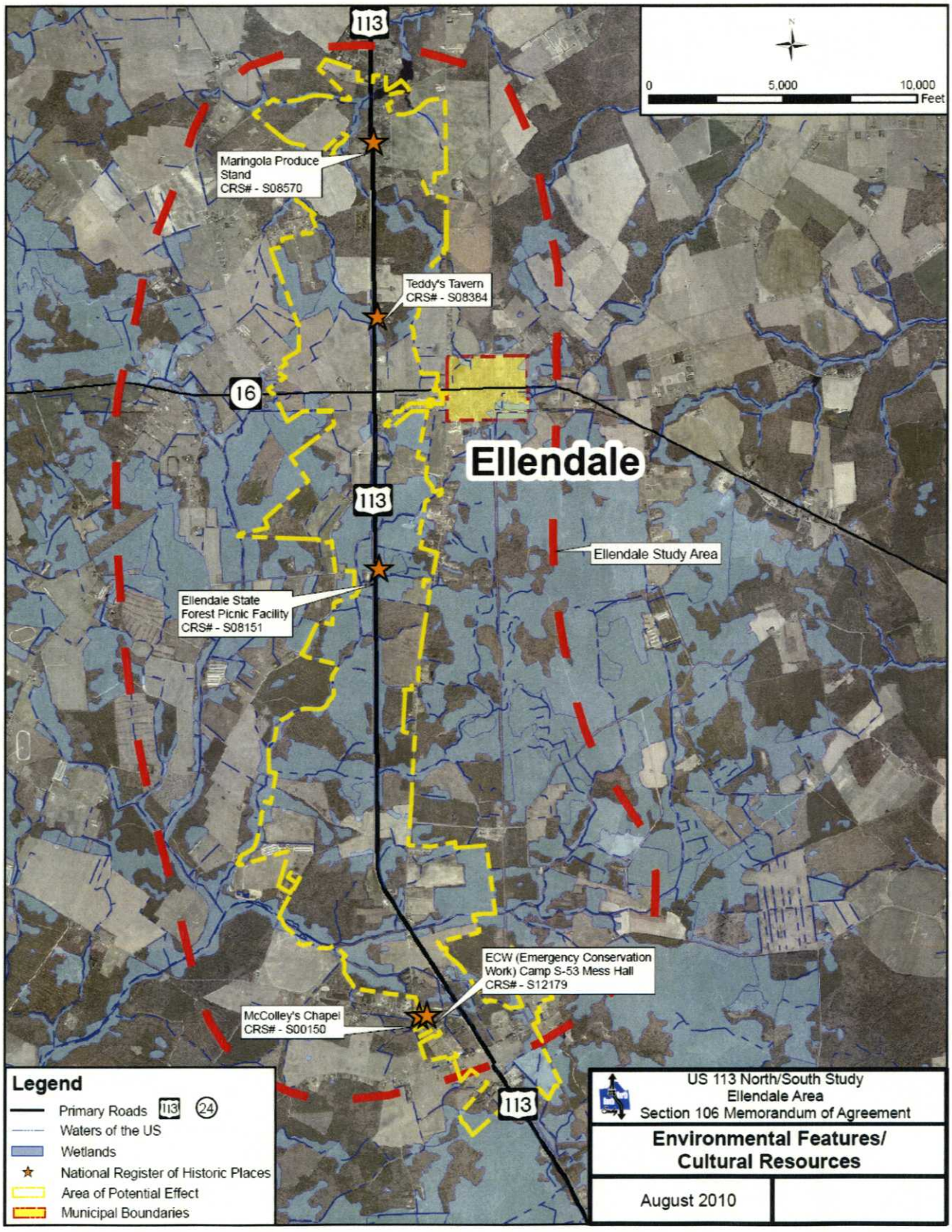
DELAWARE STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: 8.9.10
Timothy Slavin, DHCA Director and State Historic Preservation Officer

DELAWARE DEPARTMENT OF TRANSPORTATION

By: Natalie Barnhart Date: 8/5/10
Natalie Barnhart, DelDOT Chief Engineer

ATTACHMENT A



Appendix C

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
410/573-4575

July 11, 2008

RECEIVED

JUL 14 2008

RUMMEL, KLEPPER & KAHL, LLP

Mr. Justin T. Reel
Rummel, Klepper &Kahl, LLP
81 Mosher Street
Baltimore, Maryland 21217

Re: Route 113 Interchange at Staytonville and Fleatown Rds., Sussex County, DE

Dear Mr. Reel:

We have reviewed the maps showing the plans for the five options under review for the referenced interchange north of Ellendale, Delaware, and the comments of Matthew Bailey of Delaware Fish and Wildlife concerning these alternatives. Our primary concern is the effect of this interchange on the adjacent population of the Federally threatened swamp pink (*Helonias bullata*). The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531, et seq.).

We concur with Matthew Bailey's comments concerning the five alternatives. We concur that option 5 is the best choice for minimizing potential effects on swamp pink and that the following measures are needed to avoid adverse effects on the species:

1) Culverts under Staytonville Road and the bridge/culverts under Rt. 113 shall be designed to maintain post-project flows at currently existing levels,
2) No fill shall be placed in the wetland area adjacent to the known swamp pink population,
3) Strict silt and erosion control measures will be implemented and enforced for the entire interchange during and following construction,
4) Any removal of trees in the area of the interchange should be avoided to the maximum extent feasible.

It is recommended that a Biological Assessment be prepared with Option 5 as the selected option, incorporating these measures in the project design. This assessment will make clear that it is the intention of the Delaware Department of Transportation to select this option and allow us to complete the informal consultation on this project.

Should you have any questions regarding this letter, please contact Andy Moser of my Endangered Species Program at (410) 573-4537.

Sincerely,

Leopoldo Miranda
Field Supervisor

Cc: Matthew Bailey, DNREC

----- Forwarded Message -----
From: "Bailey Matthew (DNREC)" <Matthew.Bailey@state.de.us>
To: kkratzer@wrallp.com, "Justin Reel" <jreel@rkkengineers.com>
Sent: Wednesday, September 13, 2006 10:10:33 AM GMT -05:00 US/Canada Eastern
Subject: natural communities shapes for rt 113 and field explanation

Hi Karl and Justin,
I'm beginning to send to you the 113 shape files. I'll send one shape per email in order to keep clear what has been sent/received. I am also attaching to this message the Explanations of Fields document. There are a total of five shape files that I am sending you. If you don't receive any of them or have any trouble opening them, please let me know.
Thanks,
Matt Bailey

----- Forwarded Message -----
From: "Bailey Matthew (DNREC)" <Matthew.Bailey@state.de.us>
To: kkratzer@wrallp.com, "Justin Reel" <jreel@rkkengineers.com>
Sent: Wednesday, September 13, 2006 12:30:44 PM GMT -05:00 US/Canada Eastern
Subject: addition to 113 forest shape

Hi Folks,
I was just looking at the forest layer and noticed that one of the edits that got me to the layer I sent you had altered the ploygon for one of the few surveyed forests in the shape file. This tract is numbered 1173 and the attached shape file contains its attributes and ploygon.
Matt

----- Forwarded Message -----
From: "Bailey Matthew (DNREC)" <Matthew.Bailey@state.de.us>
To: "Justin Reel" <jreel@rkkengineers.com>, kkratzer@wrallp.com
Sent: Wednesday, March 14, 2007 1:52:56 PM GMT -05:00 US/Canada Eastern
Subject: helonias shape

Hi Karl and Justin,
Attached is a shape file that Bill McAvoy helped me generate. We went through each alternative route and Bill pulled out the streams that he thought should be surveyed for Swamp Pink. The shapes themselves don't necessarily denote exact boundaries, only that the stream has potential.
At the same time we generated this shape file, we also discussed what protocols might be recommended for swamp pink surveys. I wrote those up the other day and sent them to Bill to review. After he edits/OK's them, I'll send them to you all and then we can begin to see where they might dovetail with previous work you might have done.

Thanks,
Matt
302-382-4151

April 13, 2009

Chief Dennis J. Coker,
Lenape Indian Tribe of Delaware, Inc.
PO Box 79 Cheswold, DE 19936

Subject: Archaeology Update for Delaware Department of Transportation Projects

Dear Mr. Coker:

The Delaware Department of Transportation (DelDOT) on behalf of the Federal Highway Administration (FHWA) is providing you with an update on the on-going Archaeological work in the State of Delaware for the following projects:

301 - A copy of the signed Memorandum of Agreement (MOA) and project maps are attached. As stipulated in the MOA, Archaeological survey is on-going with background research completed and initial fieldwork to start this summer. Also enclosed is a copy of the public brochure to be handed out describing the Archaeological work that will be done throughout the project corridor.

http://www.deldot.gov/information/projects/us301/

Little Heaven - The Little Heaven Project Phase I a & b archaeological surveys have been underway for the past few years and continues to date. No known Native American sites have been discovered so far. When and if any Native American archaeological sites are found, FHWA and DelDOT will continue coordination with you. Attached is a preliminary Draft MOA and project map outlining the commitments that DelDOT will fulfill regarding the unfinished archaeological work and any future work if any site is found eligible to the National Register of Historic Places.

http://www.deldot.gov/information/projects/little_heaven/index.shtml

Frederica North - Pursuant to the signed MOA (attached with project maps) "DelDOT shall have a qualified cultural resources consultant complete the Phase II survey of the Areas 2,

5, & 6, of the Solie Grey Farm site (7K-F-169)." This work is on going, and certain site boundaries and site numbers still need to be determined. A portion of Area 5 will be considered eligible for listing in the National Register for it's prehistoric Native American significance. Upon completion of the fieldwork, DelDOT and the State Historic Preservation Office (SHPO) will work together to determine the appropriate level of effort for site documentation, and boundary determinations based on the results of the current fieldwork. After the current fieldwork is completed, DelDOT and SHPO will convene to discuss mitigation treatment of the site as stipulated in the MOA. As for the current Phase III mitigation in area 1 of the Grey Farm site (7K-F-11) the fieldwork is going well and DelDOT's consultant Archaeological and Historical Consultants is on schedule to complete the excavation prior to DelDOT beginning their construction project. Attached is the project handout being distributed to the public about the nature of the site.

Ellendale – This project is still under design to achieve a preferred alternative, and Archaeological compliance work has not begun. Currently DelDOT, SHPO, and FHWA are working on an MOA to complete all the Archaeological work. Attached is a project area map

http://www.deldot.gov/information/projects/us113/

FHWA and DelDOT look forward to continue working with you on these and other projects. If needed, please contact David Clarke at (302) 760-2271 with any project-related questions and/or comments or recommendations you can offer as we move forward to improve our tribal consultations.

As always thank you for your continued cooperation.

Sincerely,

Therese M. Fulmer
Manager, Environmental Studies

TMF (Attachments)
CC: Nick Blendy, FHWA
Gwen Davis, DE SHPO
Kevin Cunningham, DelDOT
Therese Fulmer, DelDOT
Monroe Hite, DelDOT
Thad McIlvaine, DelDOT
David Clarke, DelDOT
Diane Bernardo, DelDOT
Mark Harbeson, DelDOT
Steve Martz, DE SHPO
File

April 13, 2009

Chief James Larry Jackson,
Nanticoke Indian Association, Inc.
27073 John J. Williams Hwy. Millsboro, DE 19966

Subject: Archaeology Update for Delaware Department of Transportation Projects

Dear Mr. Coker:

The Delaware Department of Transportation (DelDOT) on behalf of the Federal Highway Administration (FHWA) is providing you with an update on the on-going Archaeological work in the State of Delaware for the following projects:

301 - A copy of the signed Memorandum of Agreement (MOA) and project maps are attached. As stipulated in the MOA, Archaeological survey is on-going with background research completed and initial fieldwork to start this summer. Also enclosed is a copy of the public brochure to be handed out describing the Archaeological work that will be done throughout the project corridor.

http://www.deldot.gov/information/projects/us301/

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Frederica North - Pursuant to the signed MOA (attached with project maps) "DelDOT shall have a qualified cultural resources consultant complete the Phase II survey of the Areas 2, 5, & 6, of the Solie Grey Farm site (7K-F-169)." This work is on going, and certain site boundaries and site numbers still need to be determined. A portion of Area 5 will be considered eligible for listing in the National Register for it's prehistoric Native American significance. Upon completion of the fieldwork, DelDOT and the State Historic Preservation Office (SHPO) will work together to determine the appropriate level of effort for site documentation, and boundary determinations based on the results of the current fieldwork. After the current fieldwork is completed, DelDOT and SHPO will convene to discuss mitigation treatment of the site as stipulated in the MOA. As for the current Phase III mitigation in area 1 of the Grey Farm site (7K-F-11) the fieldwork is going well and DelDOT's consultant Archaeological and Historical Consultants is on schedule to complete the excavation prior to DelDOT beginning their construction project. Attached is the project handout being distributed to the public about the nature of the site.

Ellendale – This project is still under design to achieve a preferred alternative, and Archaeological compliance work has not begun. Currently DelDOT, SHPO, and FHWA are working on an MOA to complete all the Archaeological work. Attached is a project area map

http://www.deldot.gov/information/projects/us113/

FHWA and DelDOT look forward to continue working with you on these and other projects. If needed, please contact David Clarke at (302) 760-2271 with any project-related questions and/or comments or recommendations you can offer as we move forward to improve our tribal consultations.

As always thank you for your continued cooperation.

Sincerely,

Therese M. Fulmer
Manager, Environmental Studies

TMF (Attachments)
CC: Nick Blendy, FHWA
Gwen Davis, DE SHPO
Kevin Cunningham, DelDOT
Therese Fulmer, DelDOT
Monroe Hite, DelDOT
Thad McIlvaine, DelDOT
David Clarke, DelDOT
Diane Bernardo, DelDOT
Mark Harbeson, DelDOT
Steve Martz, DE SHPO

U.S. Department of Transportation
Federal Highway Administration

DELMAR Division – Delaware

300 South New St., Suite 2101
Dover, Delaware 19904

August 28, 2009

Kerry Holton, Tribal President
Delaware Nation
PO Box 825
Anadarko, OK 73005

Dear Mr. Holton,

The purpose of this letter is to initiate consultation between the Delaware Nation and the Federal Highway Administration (FHWA) regarding the following federally funded project: **Ellendale Environmental Assessment, Sussex County, State Contract No. 22-127-01.**

The Ellendale Project is currently being developed as an Environmental Assessment (EA) to achieve a preferred alternative. An upgrade of the existing four-lane US 113 is anticipated to be recommended by the Delaware Department of Transportation (DelDOT). Archaeological surveys have yet to start and FHWA, DelDOT and the Delaware State Historic Preservation Officer (SHPO) staff are currently working on developing a Draft Memorandum of Agreement (MOA).

Attached are the project location map and preliminary Draft MOA outlining the commitments that DelDOT will fulfill regarding the archaeological work and any future work if any site is found eligible to the National Register of Historic Places. You may contact David Clarke, DelDOT Project Archaeologist at (302) 760-2271 to discuss any questions that you or other Delaware Nation members may have regarding the archaeological surveys and Draft MOA.

Please let us know of the Delaware Nation interests in the Ellendale EA Project. We invite your participation as a consulting party in the continued development of the enclosed Draft MOA.

Thank you for your input in reviewing the above cited project. If interested in the project, FHWA and DelDOT look forward to working with you and members of the Delaware Nation. If you have any questions or would like further information please contact me at (302) 734-2966 or by email at nick.blendy@dot.gov.

Sincerely,

Nick Blendy

Nick Blendy
Environmental Specialist

RECOVERY.GOV

cc: Tamara Francis, Cultural Preservation Director
Gwen Davis, DE SHPO
David Clarke, DelDOT
Kevin Cunningham, DelDOT
Terry Fulmer, DelDOT
Mike Simmons, DelDOT

U.S. Department of Transportation
Federal Highway Administration

DELMAR Division – Delaware

300 South New St., Suite 2101
Dover, Delaware 19904

August 28, 2009

Sherry White
Stockbridge-Munsee Tribal Historic Preservation Office
W13447 Camp 14 Road
P.O. Box 70
Bowler, WI 54416

Dear Ms. White,

The purpose of this letter is to initiate consultation between the Stockbridge-Munsee Tribe and the Federal Highway Administration (FHWA) regarding the federally funded project: **Ellendale Environmental Assessment, Sussex County, State Contract No. 22-127-01.**

The Ellendale Project is currently being developed as an Environmental Assessment (EA) to achieve a preferred alternative. An upgrade of the existing four-lane US 113 is anticipated to be recommended by the Delaware Department of Transportation (DelDOT). Archaeological surveys have yet to start and FHWA, DelDOT and the Delaware State Historic Preservation Officer (SHPO) staff are currently working on developing a Draft Memorandum of Agreement (MOA).

Attached are the project location map and preliminary Draft MOA outlining the commitments that DelDOT will fulfill regarding the archaeological work and any future work if any site is found eligible to the National Register of Historic Places. You may contact David Clarke, DelDOT Project Archaeologist at (302) 760-2271 to discuss any questions that you or other Stockbridge-Munsee members may have regarding the archaeological surveys and Draft MOA.

Please let us know of the Stockbridge-Munsee Community interests in the Ellendale EA Project. We invite your participation as a consulting party in the development of the Draft MOA.

Thank you for your input in reviewing the above cited project. If interested in the project, FHWA and DelDOT look forward to working with you and members of the Delaware Nation. If you have any questions or would like further information please contact me at (302) 734-2966 or by email at nick.blendy@dot.gov.

Sincerely,

Nick Blendy

Nick Blendy
Environmental Specialist

cc: Gwen Davis, DE SHPO
David Clarke, DelDOT
Kevin Cunningham, DelDOT
Terry Fulmer, DelDOT
Mike Simmons, DelDOT

U.S. Department of Transportation
Federal Highway Administration

DELMAR Division – Delaware
April 15, 2010

300 South New St., Suite 2101
Dover, Delaware 19904

In Reply Refer To: HDA-DE

Mr. Leopoldo Miranda
Field Supervisor
U.S. Fish and Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis MD 21401

Attention: Dr. Mary J. Ratnaswamy

Dear Mr. Miranda,

Pursuant to the requirements under Section 7 of the Endangered Species Act, this letter serves to initiate formal consultation and to transmit the Biological Assessment for the US 113 project in Ellendale, Sussex County, Delaware. Informal consultation has been ongoing between our agencies and the Delaware Department of Transportation (DelDOT). Based on this informal consultation, the best available scientific and commercial data and professional judgment, we believe the proposed project may affect but is unlikely to adversely affect known Swamp Pink populations, and will not jeopardize their continued existence.

The attached Biological Assessment considers the direct, indirect, secondary and cumulative effects of the US 113 Ellendale Environmental Assessment Project on Swamp Pink. The report presents survey efforts, agency correspondence, and avoidance and minimization efforts. We would like to express our appreciation for the cooperation of Dr. Mary J. Ratnaswamy, Mr. Bob Zepp and Mr. Andy Moser of your staff during the development of this study. This report is submitted for your review and we respectfully request your concurrence in the report conclusions.

Thank you for your continued cooperation. Should you have any questions concerning the enclosed, please contact Mr. Nick Blendy of our staff at 302-734-2966.

Sincerely yours,

Hassan Raza
Division Administrator

Enclosure

Cc:
Mr. Monroe Hite III, DelDOT
Ms. Terry Fulmer, DelDOT
Mr. Matt Bailey, DNREC
Mr. Justin Reel, RK&K
Mr. Dan Montag, FHWA
Ms. Anna Price, FHWA

U.S. Department of Transportation
Federal Highway Administration

DELMAR Division – Delaware

300 South New St., Suite 2101
Dover, Delaware 19904

May 12, 2010

In Reply Refer To: HDA-DE

Secretary Carolann Wicks
Delaware Department of Transportation
Dover, Delaware

Dear Carolann:

In response to DelDOT's letter of April 30, 2010 regarding **US 113 North/South Study, Ellendale Area Project in Kent County; State Contract 22-127-01- (No federal number)** we are approving the cited project as an Environmental Assessment pursuant to 23 CFR 771.119. The approved signature page is attached. We are also approving the enclosed Public Notice for the 30-day public availability notice in local newspapers.

If you wish to discuss this project, please contact Dan Montag or Nick Blendy of my staff.

Sincerely yours,

/s/ Hassan Raza
Division Administrator

cc: Natalie Barnhart, Chief Engineer, DelDOT
Mike Williams, Manager, Public Relations, DelDOT
Mike Simmons, Assistant Director, Transportation Solutions DelDOT
Monroe Hite, Project Manager, Transportation Solutions DelDOT
Robert McCleary, Assistant Director, Engineering Support DelDOT
Terry Fulmer, Environmental Studies DelDOT
Mike Hahn, Environmental Studies DelDOT
Dan Montag, Area Engineer, FHWA DelMar
Jeanette Mar, Environmental Group Leader FHWA DelMar
Nick Blendy, Environmental Specialist, FHWA DelMar
Project File

FEDERAL HIGHWAY ADMINISTRATION

DELMAR DIVISION

US 113 North/South Study
Ellendale Area
From South of Hudson Pond to East Redden Road/Deer Forest Road Intersection

Sussex County, Delaware

ADMINISTRATIVE ACTION

ELLENDALE AREA ENVIRONMENTAL ASSESSMENT

UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
and
DELAWARE DEPARTMENT OF TRANSPORTATION

Submitted Pursuant to: 42 U.S.C. 4332(2)(c); 49 U.S.C. 303
23 U.S.C. 128 (a) and CEQ Regulations (40 CFR 1500 et. seq.)

Approved for advertisement of availability for public review and comment:

Natalie Barnhart — April 30, 2010

NATALIE BARNHART, P.E.
CHIEF ENGINEER
DELAWARE DEPARTMENT OF TRANSPORTATION

Date

Hassan Raza — 5/12/2010

HASSAN RAZA
DIVISION ADMINISTRATOR
FEDERAL HIGHWAY ADMINISTRATION, DELMAR DIVISION

Date

Delaware Department of Transportation

Carolann Wicks, P.E.
Secretary

US 113 NORTH/SOUTH STUDY
Ellendale Area Environmental Assessment
State Contract #22-127-01

30-Day Comment Period for Environmental Assessment

The Delaware Department of Transportation (DelDOT) and the Federal Highway Administration (FHWA) are undertaking a project to identify, select and protect an alignment for a limited access highway from north of Milford south to the Maryland state line, a distance of approximately 40 miles. A limited access highway will be needed to meet the long-term transportation needs in the US 113 corridor to accommodate existing and planned economic growth and development while minimizing impacts to properties and environmental and historic resources. The Ellendale Area, from south of Milford to north of Georgetown, is just one section of a much larger US 113 North/South Study, which will lead to the conversion of US 113 into a limited access highway in Sussex County, Delaware.

The Ellendale Area Environmental Assessment contains the environmental analysis of the On-Alignment Alternative which DelDOT has identified as the Recommended Preferred Alternative for the Ellendale Area in June 2007. The On-Alignment Alternative includes the construction of two additional lanes in and adjacent to the existing right-of-way on the west side of existing US 113 from Hudson Pond to approximately VFW Road, as its Preferred Alternative for this area. These additional lanes would become limited access Southbound US 113. The existing southbound lanes of US 113 would become the limited access Northbound US 113. The existing northbound lanes would become a two-way frontage road providing access for properties fronting on the east side of existing US 113. An interchange (overpass with ramps) replaces the existing US 113/Delaware Route 16 intersection and provides access between limited access US 113 and the local road system. From VFW Road south, to the end of the Ellendale Area portion of the US 113 North/South Study at East Redden Road, development and/or access rights, from the properties fronting US 113, would be acquired by DelDOT. A second interchange constructed in the vicinity of the existing intersection of Road 213, Old State Road, and US 113, would provide access between limited access US 113 and the local road system.

DelDOT and the FHWA, in accordance with the Federal requirements of 23 CFR 771.119, are hereby notifying the public of the availability of the Ellendale Area Environmental Assessment.

A copy of the document is available for review at the following locations:

- DelDOT Administration Building in Dover;
- DelDOT South District Administration Building in Georgetown;
- Ellendale Town Hall in Ellendale

The Ellendale Area Environmental Assessment may also be viewed via the project's website www.deldot.gov/information/projects/us113 or a copy of the document may be purchased (for the price of printing) by contacting DelDOT Public Relations at 1-800-652-5600 (in DE) or (302) 760-2080.

All interested parties are invited to comment on the Ellendale Area Environmental Assessment. Comments must be submitted in writing within 30 days of the publication of this notice or by Monday, June 28, 2010. Written comments may be sent to the following address:

Office of Public Relations
Delaware Department of Transportation
800 Bay Road
P.O. Box 778
Dover, Delaware 19903

PUBLIC NOTICE

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

May 28, 2010

Mr. Mark Davis
Delaware Department of Agriculture
2320 South DuPont Highway
Dover, DE 19901

Dear Mr. Davis:

The Delaware Department of Transportation (DelDOT) is pleased to submit the Draft Environmental Assessment for the **Ellendale Area of the US 113 North/South Study in Sussex County.** The DelDOT Contract Number is 22-127-01.

DelDOT and the Federal Highway Administration (FHWA) are undertaking a project to identify, select and protect an alignment for a limited access highway from north of Milford south to the Maryland state line in Selbyville. The Ellendale Area is just one section of a much larger US 113 North/South Study, which will lead to the conversion of US 113 into a limited access highway.

Please provide any comments you may have within thirty (30) days of receiving the Draft Environmental Assessment.

We look forward to continuing our coordination with you on this project.

Sincerely,

Monroe C. Hite, III
Project Manager

MH:mhm
Enclosure
cc: Daniel Montag, Federal Highway Administration, DelMar Division
Nick Blendy, Federal Highway Administration, DelMar Division
Natalie Barnhart, Chief Engineer
Michael Williams, Manager, Public Relations
Therese Fulmer, Manager, Environmental Studies
Michael H. Simmons, Assistant Director, Transportation Solutions
File

DelDOT

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

May 20, 2010

Mr. Reid Nelson
Advisory Council on Historic Preservation
The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

Dear Mr. Nelson:

The Delaware Department of Transportation (DelDOT) is pleased to submit the Draft Environmental Assessment for the **Ellendale Area of the US 113 North/South Study in Sussex County, Delaware.**

DelDOT and the Federal Highway Administration (FHWA) are undertaking a project to identify, select and protect an alignment for a limited access highway from north of Milford south to the Maryland state line in Selbyville. The Ellendale Area is just one section of a much larger US 113 North/South Study, which will lead to the conversion of US 113 into a limited access highway.

Pursuant to 36 CFR 800.8, we are electing to satisfy the steps and procedures for Section 106 compliance and purposes through use of the National Environmental Policy Act (NEPA) process. Formal consultation has been ongoing between our office, the FHWA, and the Delaware State Historic Preservation Office (DE SHPO). As such, we would like to offer your office the opportunity to comment on any adverse effects within thirty (30) days of receiving the Draft Environmental Assessment. Written and official comments, if any, should be offered to this office and FHWA during this time period.

In addition, we anticipate preparing a Finding of Adverse Affect document and Memorandum of Agreement (MOA) to deal with the future potential for archeological resource impacts. Please advise us if the Advisory Council would like to participate in the MOA process.

DelDOT

Should you have any questions, please feel free to contact me at (302) 760-2120.

Sincerely,

Monroe C. Hite, III
Project Manager

MH:mhm
Enclosure
cc: Daniel Montag, Federal Highway Administration, DelMar Division
Nick Blendy, Federal Highway Administration, DelMar Division
Gwen Davis, DE SHPO
Natalie Barnhart, Chief Engineer
Michael Williams, Manager, Public Relations
Therese Fulmer, Manager, Environmental Studies
Michael C. Hahn, Environmental Studies
David S. Clarke, Archeologist, Environmental Studies
Michael H. Simmons, Assistant Director, Transportation Solutions
File

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

May 20, 2010

Mr. Leopoldo Miranda
United States Fish and Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

Dear Mr. Miranda:

The Delaware Department of Transportation (DelDOT) is pleased to submit the Draft Environmental Assessment for the **Ellendale Area of the US 113 North/South Study in Sussex County**. The DelDOT Contract Number is 22-127-01.

DelDOT and the Federal Highway Administration (FHWA) are undertaking a project to identify, select and protect an alignment for a limited access highway from north of Milford south to the Maryland state line in Selbyville. The Ellendale Area is just one section of a much larger US 113 North/South Study, which will lead to the conversion of US 113 into a limited access highway.

Please provide any comments you may have within thirty (30) days of receiving the Draft Environmental Assessment. Please note that we have been coordinating this project with Dr. Mary J. Ratnaswamy, Mr. Bob Zepp, and Mr. Andy Moser of your office.

We look forward to continuing our coordination with you on this project.

Sincerely,

Monroe C. Hite, III
Project Manager

MH:mhm
Enclosure
cc: Daniel Montag, Federal Highway Administration, DelMar Division
Nick Blendy, Federal Highway Administration, DelMar Division
Natalie Barnhart, Chief Engineer
Michael Williams, Manager, Director of Public Relations
Therese Fulmer, Manager, Environmental Studies
Michael H. Simmons, Assistant Director, Transportation Solutions
Bob Zepp, United States Fish and Wildlife Service (with enclosure)
File

DelDOT

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

May 20, 2010

Mr. Frank Cianfrani
Army Corps of Engineers
Philadelphia District
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

Dear Mr. Cianfrani:

The Delaware Department of Transportation (DelDOT) is pleased to submit the Draft Environmental Assessment for the **Ellendale Area of the US 113 North/South Study in Sussex County**. The DelDOT Contract Number is 22-127-01.

DelDOT and the Federal Highway Administration (FHWA) are undertaking a project to identify, select and protect an alignment for a limited access highway from north of Milford south to the Maryland state line in Selbyville. The Ellendale Area is just one section of a much larger US 113 North/South Study, which will lead to the conversion of US 113 into a limited access highway.

Please provide any comments you may have within thirty (30) days of receiving the Draft Environmental Assessment. Please note that we have been coordinating this project with Mr. Edward Bonner of your office.

We look forward to continuing our coordination with you on this project.

Sincerely,

Monroe C. Hite, III
Project Manager

MH:mhm
Enclosure
cc: Daniel Montag, Federal Highway Administration, DelMar Division
Nick Blendy, Federal Highway Administration, DelMar Division
Natalie Barnhart, Chief Engineer
Michael Williams, Manager, Director of Public Relations
Therese Fulmer, Manager, Environmental Studies
Michael H. Simmons, Assistant Director, Transportation Solutions
Edward Bonner, Army Corps of Engineers (with enclosure)
File

DelDOT

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

May 20, 2010

Ms. Sara Cooksey
DNREC
Division of Soil & Water Conservation
89 Kings Highway
Dover, DE 19901

Dear Ms. Cooksey:

The Delaware Department of Transportation (DelDOT) is pleased to submit the Draft Environmental Assessment for the **Ellendale Area of the US 113 North/South Study in Sussex County**. The DelDOT Contract Number is 22-127-01.

DelDOT and the Federal Highway Administration (FHWA) are undertaking a project to identify, select and protect an alignment for a limited access highway from north of Milford south to the Maryland state line in Selbyville. The Ellendale Area is just one section of a much larger US 113 North/South Study, which will lead to the conversion of US 113 into a limited access highway.

Please provide any comments you may have within thirty (30) days of receiving the Draft Environmental Assessment.

We look forward to continuing our coordination with you on this project.

Sincerely,

Monroe C. Hite, III
Project Manager

MH:mhm
Enclosure
cc: Daniel Montag, Federal Highway Administration, DelMar Division
Nick Blendy, Federal Highway Administration, DelMar Division
Natalie Barnhart, Chief Engineer
Michael Williams, Manager, Director of Public Relations
Therese Fulmer, Manager, Environmental Studies
Michael H. Simmons, Assistant Director, Transportation Solutions
File

DelDOT

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

May 20, 2010

Mr. Matthew Bailey
DNREC
Division of Fish & Wildlife
4876 Hay Point Landing Road
Smyrna, DE 19977

Dear Mr. Bailey:

The Delaware Department of Transportation (DelDOT) is pleased to submit the Draft Environmental Assessment for the **Ellendale Area of the US 113 North/South Study in Sussex County.** The DelDOT Contract Number is 22-127-01.

DelDOT and the Federal Highway Administration (FHWA) are undertaking a project to identify, select and protect an alignment for a limited access highway from north of Milford south to the Maryland state line in Selbyville. The Ellendale Area is just one section of a much larger US 113 North/South Study, which will lead to the conversion of US 113 into a limited access highway.

Please provide any comments you may have within thirty (30) days of receiving the Draft Environmental Assessment.

We look forward to continuing our coordination with you on this project.

Sincerely,

Monroe C. Hite, III
Project Manager

MH:mhm
Enclosure
cc: Daniel Montag, Federal Highway Administration, DelMar Division
Nick Blendy, Federal Highway Administration, DelMar Division
Natalie Barnhart, Chief Engineer
Michael Williams, Manager, Director of Public Relations
Therese Fulmer, Manager, Environmental Studies
Michael H. Simmons, Assistant Director, Transportation Solutions
File

DelDOT

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

May 20, 2010

Ms. Laura Herr
DNREC
Division of Water Resources
Wetlands & Subaqueous Lands Section
89 Kings Highway
Dover, DE 19901

Dear Ms. Herr:

The Delaware Department of Transportation (DelDOT) is pleased to submit the Draft Environmental Assessment for the **Ellendale Area of the US 113 North/South Study in Sussex County.** The DelDOT Contract Number is 22-127-01.

DelDOT and the Federal Highway Administration (FHWA) are undertaking a project to identify, select and protect an alignment for a limited access highway from north of Milford south to the Maryland state line in Selbyville. The Ellendale Area is just one section of a much larger US 113 North/South Study, which will lead to the conversion of US 113 into a limited access highway.

Please provide any comments you may have within thirty (30) days of receiving the Draft Environmental Assessment.

We look forward to continuing our coordination with you on this project.

Sincerely,

Monroe C. Hite, III
Project Manager

MH:mhm
Enclosure
cc: Daniel Montag, Federal Highway Administration, DelMar Division
Nick Blendy, Federal Highway Administration, DelMar Division
Natalie Barnhart, Chief Engineer
Michael Williams, Manager, Director of Public Relations
Therese Fulmer, Manager, Environmental Studies
Michael H. Simmons, Assistant Director, Transportation Solutions
File

DelDOT

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

May 20, 2010

Mr. Kevin Magerr
Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103

Dear Mr. Magerr:

The Delaware Department of Transportation (DelDOT) is pleased to submit the Draft Environmental Assessment for the **Ellendale Area of the US 113 North/South Study in Sussex County**. The DelDOT Contract Number is 22-127-01.

DelDOT and the Federal Highway Administration (FHWA) are undertaking a project to identify, select and protect an alignment for a limited access highway from north of Milford south to the Maryland state line in Selbyville. The Ellendale Area is just one section of a much larger US 113 North/South Study, which will lead to the conversion of US 113 into a limited access highway.

Please provide any comments you may have within thirty (30) days of receiving the Draft Environmental Assessment. We look forward to continuing our coordination with you on this project.

Sincerely,

Monroe C. Hite, III
Project Manager

MH:mhm
Enclosure
cc: Daniel Montag, Federal Highway Administration, DelMar Division
Nick Blendy, Federal Highway Administration, DelMar Division
Natalie Barnhart, Chief Engineer
Michael Williams, Manager, Director of Public Relations
Therese Fulmer, Manager, Environmental Studies
Michael H. Simmons, Assistant Director, Transportation Solutions
File

DelDOT

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

May 20, 2010

Mr. Timothy Slavin, Director
Division of Historic and Cultural Affairs
21 The Green, Suite A
Dover, DE 19901

Dear Mr. Slavin:

The Delaware Department of Transportation (DelDOT) is pleased to submit the Draft Environmental Assessment for the **Ellendale Area of the US 113 North/South Study in Sussex County**. The DelDOT Contract Number is 22-127-01.

DelDOT and the Federal Highway Administration (FHWA) are undertaking a project to identify, select and protect an alignment for a limited access highway from north of Milford south to the Maryland state line in Selbyville. The Ellendale Area is just one section of a much larger US 113 North/South Study, which will lead to the conversion of US 113 into a limited access highway.

Please provide any comments you may have within thirty (30) days of receiving the Draft Environmental Assessment.

We look forward to continuing our coordination with you on this project.

Sincerely,

Monroe C. Hite, III
Project Manager

MH:mhm
Enclosure
cc: Daniel Montag, Federal Highway Administration, DelMar Division
Nick Blendy, Federal Highway Administration, DelMar Division
Gwen Davis, DE SHPO
Natalie Barnhart, Chief Engineer
Michael Williams, Manager, Public Relations
Therese Fulmer, Manager, Environmental Studies
Michael H. Simmons, Assistant Director, Transportation Solutions
File

DelDOT

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

May 20, 2010

Ms. Constance Holland, AICP
State Planning Director
Office of State Planning Coordination
122 William Penn Street
Haslet Armory, 3rd Floor
Dover, DE 19901

Dear Ms. Holland:

The Delaware Department of Transportation (DelDOT) is pleased to submit the Draft Environmental Assessment for the **Ellendale Area of the US 113 North/South Study in Sussex County.** The DelDOT Contract Number is 22-127-01.

DelDOT and the Federal Highway Administration (FHWA) are undertaking a project to identify, select and protect an alignment for a limited access highway from north of Milford south to the Maryland state line in Selbyville. The Ellendale Area is just one section of a much larger US 113 North/South Study, which will lead to the conversion of US 113 into a limited access highway.

Please provide any comments you may have within thirty (30) days of receiving the Draft Environmental Assessment. Please note that we have been coordinating this project with Mr. Bryan Hall of your office.

We look forward to continuing our coordination with you on this project.

Sincerely,

Monroe C. Hite, III
Project Manager

MH:mhm
Enclosure
cc: Daniel Montag, Federal Highway Administration, DelMar Division
Nick Blendy, Federal Highway Administration, DelMar Division
Natalie Barnhart, Chief Engineer
Michael Williams, Manager, Public Relations
Therese Fulmer, Manager, Environmental Studies
Michael H. Simmons, Assistant Director, Transportation Solutions
Bryan Hall, Office of State Planning Coordination
File

DelDOT

U.S. Department of Transportation
Federal Highway Administration

DELMAR Division – Delaware

300 South New St., Suite 2101
Dover, Delaware 19904

June 7, 2010

President Kerry Holton
The Delaware Nation
31064 State Highway 281
Anadarko, OK 73005

Dear Mr. Holton,

The Federal Highway Administration (FHWA) is providing the Delaware Nation a copy of the Environmental Assessment (EA) for the federally funded project: **Ellendale Environmental Assessment, Sussex County, State Contract No. 22-127-01.** The Delaware Nation was mailed an August 28, 2009 correspondence that included a Draft Memorandum of Agreement (MOA) (copy attached). No formal response on the MOA was received from the Delaware Nation. The draft MOA is appended to the enclosed EA dated April 2010.

Cultural Resources are discussed on Pages 23 through 40 of the enclosed EA document including Archaeological Resources discussions starting on Page 37. We invite any comments the Delaware Nation may have as a consulting party to the Ellendale Project and MOA. A copy of the 30 day public notice is attached. The MOA will be circulated for signature after the June 28 close of comment period. A copy of the signed MOA will be forwarded to the Delaware Nation.

Thank you once again for all the help the Delaware Nation has provided in Delaware. If you have any questions or would like to further discuss, please contact me at (302) 734-2966 or by email at nick.blendy@dot.gov.

Sincerely,

Nick Blendy
Environmental Specialist

cc: Tamara Francis, Delaware Nation (w/attachment)
Jason Ross, Delaware Nation (w/attachment)
Gwen Davis, DE SHPO
Terry Fulmer, DelDOT
Mike Hahn, DelDOT
David Clarke, DelDOT
Kevin Cunningham, DelDOT
Monroe Hite, DelDOT
Mike Simmons, DelDOT
Dan Montag, FHWA

Preserving America's Heritage

June 24, 2010

Mr. Monroe C. Hite, Ill
Project Manager
Department of Transportation
800 Bay Road
Dover, DE 19903

Ref: *Draft Environmental Assessment for the Ellendale Area of the US 113 North/South Study Sussex County, Delaware*

Dear Mr. Hite:

On May 25, 2010, the Advisory Council on Historic Preservation (ACHP) received the Draft Environmental Assessment for the Ellendale Area of the US 113 North/South Study. Based upon the information provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer, affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and you determine that our participation is needed please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Delaware State Historic Preservation Office (SHPO) and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA, and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

If you have any questions or require further assistance, please contact Ms. Carol Legard at (202) 606-8522 or clegard@achp.gov.

Sincerely,

LaShavio Johnson

LaShavio Johnson
Historic Preservation Technician
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION

1100 Pennsylvania Avenue NW, Suite 803 • Washington, DC 20004
Phone:202-606-8503 • Fax: 202-606-8647 • achp@achp.gov • www.achp.gov

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, Maryland 21401
http://www.fws.gov/chesapeakebay

August 2, 2010

Mr. Hassan Raza
U.S. Department of Transportation
Federal Highway Administration
300 South New St., Suite 2101
Dover, Delaware 19904

Attention: Nick Blendy

RE: Biological Assessment for US 113 North/South Study: Ellendale, Delaware

Dear Mr. Raza:

This responds to your letter of April 15, 2010, transmitting the referenced Biological Assessment for our review. We are providing comments in accordance with Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

We have reviewed the Biological Assessment which evaluates the impact of the proposed project on the Federally threatened swamp pink (*Helonias bullata*). We concur that the selected alternative as described in the assessment is not likely to adversely affect this threatened species. Therefore, no further consultation is required for this project under Section 7 of the Endangered Species Act.

We appreciate your cooperation and the cooperation of the Delaware Department of Transportation in modifying the design of this project to minimize any impact on swamp pink. Should you have any questions regarding this response, please contact Andy Moser of my endangered species staff at (410) 573-4537.

Sincerely,

For Leopoldo Miranda
Supervisor

cc: Matt Bailey, DNREC
Justin Reel, RK&K

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AUG 0 6 2010
RUMMEL, KLEPPER & KAHL, LLP

TAKE PRIDE® IN AMERICA

State of Delaware
Historical and Cultural Affairs

21 The Green
Dover, DE 19901-3611

Phone: (302) 736.7400 Fax: (302) 739.5660

N. White DelDOT

August 9, 2010

Mr. Nicholas Blendy
Environmental Specialist
Federal Highway Administration
J. Allen Frear Federal Building
300 South New Street
Dover, DE 19904-6726

RE: US 113 North-South Study – Ellendale Area; Finding of Adverse Effect and Memorandum of Agreement

Dear Mr. Blendy:

The DE SHPO has reviewed the revised documentation of Adverse Effect for the US 113 Ellendale project, included in the Environmental Assessment. The revised documentation addresses most comments this office provided on the draft, and contains the information needed to support this finding, as stipulated in 36 CFR Part 800.11(e) of the regulations which implement Section 106 of the National Historic Preservation Act.

The documentation demonstrates that the Federal Highway Administration (FHWA) has, with assistance from the Delaware Department of Transportation (DelDOT), applied the Criteria of Adverse Effect (§800.5) to the five properties located within the Preferred Alternative's Area of Potential Effect that are known to be listed in or are eligible for the National Register of Historic Places. The FHWA has made the following determinations with respect to these properties:

1. One historic property will not be affected by the project: Maringola Produce Stand (Cultural Resource Survey Number S08570); and

2. Two properties will not be adversely affected by the project: McColley's Chapel (S00150) and the ECW Camp S-53 Mess Hall (S12179); and

3. Two properties will be adversely affected by the project: Teddy's Tavern (S08383) and the Ellendale State Forest Picnic Facility (S08151).

Based on the current proposed design of the project, the DE SHPO concurs with these findings.

SAVING DELAWARE HISTORY

DelDOT's proposed measures to mitigate for adverse effects to Teddy's Tavern and the Ellendale State Forest Picnic Facility are outlined in the Memorandum of Agreement (MOA), which DelDOT prepared in consultation with this office. The MOA also provides for periodic review of the project and its APE to determine if other historic properties may be affected. With respect to potential archaeological properties, the MOA specifically outlines the process for:

1. establishing a plan for completing the archaeological program prior to the start of construction or other ground disturbing activities; and
2. phased identification and evaluation of archaeological sites; and
3. assessing the effects of the project on eligible archaeological sites; and
4. consulting on ways to avoid, minimize and/or mitigate for adverse effects; and
5. involving other consulting parties, including Native American tribes, and the public.

This office agrees that the measures outlined in the MOA adequately address this complex undertaking, providing for continued consultation as the project is developed and carried out over a long period of time. Therefore, the Delaware State Historic Preservation Officer has signed the MOA and is forwarding it to DelDOT by copy of this letter.

After the FHWA has signed the MOA, please provide us with a copy of the executed agreement. The FHWA must also send copies to the Advisory Council on Historic Preservation (along with a copy of this letter) and to the Delaware Nation, in accordance with §800.6(b)(1)(iv) and (c)(9).

Thank you for your consideration of these comments. This office looks forward to continuing to work with FHWA and DelDOT in implementing the stipulations of the MOA. If you have any questions at this time, please do not hesitate to contact me (at gwen.davis@state.de.us or 302-736-7410.

Sincerely,

Gwenyth A. Davis
Archaeologist

cc: Edward Bonner, Philadelphia District, U.S. Army Corps of Engineers
Timothy Slavin, Director and SHPO, Division of Historical & Cultural Affairs
Stephen Marz, Deputy Director and Deputy SHPO, Division of Historical & Cultural Affairs
Robert McCleary, Assistant Director, Engineering Support, DelDOT
Therese M. Fulmer, Manager, Environmental Studies, DelDOT (w/signed MOA)
Monroe Hite, Project Manager, DelDOT
Michael C. Hahn, Senior Highway Planner, DelDOT
David Clarke, Archaeologist, DelDOT
C. Daniel Parsons, Historic Preservation Planner, Sussex County

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

CAROLANN WICKS, P.E.
SECRETARY

August 17, 2010

Mr. Hassan Raza, Division Administrator
Federal Highway Administration, DelMar Division
J. Allen Frear Federal Building
300 South New Street, Suite 2101
Dover, DE 19904

Dear Mr. Raza:

The Delaware Department of Transportation (DelDOT) is requesting a Finding of No Significant Impact (FONSI) for the **Ellendale Area of the US 113 North/South Study in Sussex County**. The DelDOT Contract Number is 22-127-01.

Public notice of the availability of the Environmental Assessment (EA) was posted in the *News Journal* on May 25, 2010, the *Delaware State News* on May 25, 2010, the *Sussex Countian* on May 26, 2010, the *Milford Chronicle* on May 26, 2010, and the *Milford Beacon* on May 27, 2010 providing a 30-day comment period (copy of notice is enclosed). The 30-day comment period ended on June 28, 2010. To date, no comments have been received on the public notice.

On May 20, 2010, copies of the Environmental Assessment (EA) were forwarded to the Delaware Division of Natural Resources and Environmental Control (DNREC) Wetlands and Subaqueous Lands Section, Natural Heritage Program, and Coastal Zone Management Office, the United States Army Corps of Engineers, the United States Environmental Protection Agency, the United States Fish and Wildlife Service, the Office of State Planning Coordination, the Delaware Department of Agriculture, the Delaware State Historic Preservation Office (DE SHPO), and the Advisory Council on Historic Preservation for a 30-day review period. To date, we received agency comments from the Army Corps of Engineers, DE SHPO, and your office, which have been incorporated into the enclosed Final EA. Also, enclosed please find an errata sheet listing the revisions in the document for your reference.

Based on the above and enclosed information, we request your concurrence in a FONSI determination for the Ellendale Area of the US 113 North/South Study.

Following your approval, we will notify the State Clearinghouse of the availability of the FONSI and issue a public notice on the FONSI determination (a draft notice is enclosed for your approval) along with any other notifications you feel are appropriate.

As always, thank you for your continued cooperation.

Sincerely,

Natalie Barnhart

Natalie Barnhart, P.E.
Chief Engineer

NB:mhs
Enclosures
cc: Daniel Montag, Federal Highway Administration, DelMar Division
Nick Blendy, Federal Highway Administration, DelMar Division
Michael Williams, Manager, Director of Public Relations
Therese Fulmer, Manager, Environmental Studies
Michael H. Simmons, Assistant Director, Transportation Solutions
Monroe Hite, III, Project Manager, Transportation Solutions

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

DELMAR Division – Delaware

**300 South New St., Suite 2101
Dover, Delaware 19904**

August 17, 2010

President Kerry Holton
The Delaware Nation
31064 State Highway 281
Anadarko, OK 73005

Dear Mr. Holton,

The Federal Highway Administration (FHWA) is providing the Delaware Nation a copy of the executed Memorandum of Agreement (MOA) for the federally funded project: **Ellendale Environmental Assessment, Sussex County, State Contract No. 22-127-01.** The draft MOA was mailed to the Delaware Nation on April 28, 2009. A copy of the Environmental Assessment was mailed to you on June 7, 2010. No comments have been received from the Delaware Nation.

We are also attaching a copy of the DE SHPO's concurrence letter dated August 9, 2010. Please advise if the Delaware Nation requests a copy of the final Environmental Assessment for files.

Thank you again for the assistance the Delaware Nation has provided to the State of Delaware. If you have any questions or would like to further discuss, please contact me at (302) 734-2966 or by email at nick.blendy@dot.gov.

Sincerely,

Nick Blendy

Nick Blendy
Environmental Specialist

RECOVERY.GOV

cc: Tamara Francis, Delaware Nation (w/attachment)
Jason Ross, Delaware Nation (w/attachment)
Gwen Davis, DE SHPO
Mike Hahn, DelDOT
David Clarke, DelDOT
Kevin Cunningham, DelDOT
Terry Fulmer, DelDOT
Monroe Hite, DelDOT
Mike Simmons, DelDOT
Dan Montag, FHWA

U.S. Department of Transportation
Federal Highway Administration

DELMAR Division – Delaware

300 South New St., Suite 2101
Dover, Delaware 19904

August 30, 2010

Mr. Reid Nelson
Director, Office of Federal Agency Programs
Advisory Council on Historic Preservation
1100 Pennsylvania Avenue, N.W., Suite 809
Washington, D.C. 20004

Attn.: Ms. Carol Legard

Dear Mr. Nelson:

In accordance with 36 CFR 800.6(b)(1)(iv), the Federal Highway Administration (FHWA) wishes to transmit the fully executed Memorandum of Agreement (MOA) for the **Ellendale Area Environmental Assessment, Sussex County, State Contract No. 22-127-01.** The project has an adverse effect on two historic resources, Teddy's Tavern (S-08383) and The Ellendale State Forest Picnic Facility (S-08151) which are eligible for listing in the National Register of Historic Places. The MOA stipulates the measures to mitigate the adverse effect and was prepared in consultation with the Delaware State Historic Preservation Officer (SHPO), the Delaware Department of Transportation (DelDOT), the Delaware Nation and the FHWA.

Should you have any questions, please contact Mr. Nick Blendy of my staff at (302) 734-2966 or by email at nick.blendy@dot.gov.

Sincerely yours,

Hassan Raza
Division Administrator

Attachment: Memorandum of Agreement

cc: Therese M. Fulmer, Manager, Location and Environmental Studies Manager
Timothy A. Slavin, Director, Division of Historic and Cultural Affairs
Gwen Davis, Division of Historic and Cultural Affairs
Tamara Francis, Cultural Preservation Director, Delaware Nation

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Appendix D

This technical memorandum details the evaluation of potential noise impacts associated with the US 113 project, On-alignment, Preferred Alternative Option 01 in the Ellendale area. The study area includes first- and second-row properties adjacent to existing and improved US 113 from Hudson Pond to Redden Road. Noise criteria/activity relationships and standards are presented, followed by discussion of existing and future noise conditions that may result from the proposed improvements. Impacts to noise sensitive receptors are identified, and the potential for mitigation is discussed.

1. Criteria for Determining Noise Impacts

The Federal Highway Administration (FHWA) has issued guidelines for noise evaluation as established in Title 23 of the Code of Federal Regulations (CFR) Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise*. Highway traffic noise studies, noise abatement procedures, coordination requirements and design noise levels in CFR Part 772 constitute the noise standards mandated by 23 U.S.C. 109(i). Design noise levels for various types of activity (land use) categories are summarized in the following section.

a. FHWA Noise Abatement Criteria (NAC)

To describe noise environments and to assess impact on noise sensitive areas, a sound frequency weighing measure that simulates the subjective human response to noise is customarily selected. A-weighted sound levels reflect the human ear's reduced sensitivity to low and high frequencies within the range of human hearing. It correlates positively with human perceptions of the annoying aspects of noise, including from traffic noise sources. As such, FHWA uses A-weighted decibels (dBA) as the metric for quantifying traffic noise levels. Furthermore, FHWA has developed Noise Abatement Criteria (NAC) and procedures to be used in the planning and design of highways to determine whether highway noise levels are compatible with various land uses. A summary of the FHWA NAC is presented in **Table 1-1**, below.

Table 1-1: FHWA Noise Abatement Criteria/Activity Relationships

Activity Category	Design Noise Level $L_{eq(h)}$	Description of Activity Category
A	57 dBA (Exterior)	Land 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 dBA (Exterior)	Residences, motels, hotels, schools, churches, libraries, hospitals, picnic areas, recreation areas, playgrounds, active sports areas, and parks.
C	72 dBA (Exterior)	Developed lands, properties or activities not included in categories A and B above.
D	--	Undeveloped lands.
E	52 dBA (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

Most environmental noise fluctuates from moment to moment. To correlate noise environments with community annoyance, a single-number noise descriptor called the equivalent sound level, L_{eq}, which characterizes the fluctuating sound, is commonly used. The L_{eq} is the value or level of a steady, non-fluctuating sound that represents the same amount of acoustical energy over the same period of time. For traffic noise assessment, L_{eq} is typically evaluated over a one-hour period, $L_{eq(h)}$.

The design noise levels indicated in **Table 1-1** have been used to determine highway traffic noise impacts and the need for considering abatement measures associated with different land uses or activities in existence at the time of project design. Noise-sensitive land uses potentially affected by the proposed improvements are in activity categories B and C. The following Noise Abatement Criteria (NAC) are applicable: $L_{eq(h)}$ approaches 67 dBA (exterior) for residential areas, churches, schools, etc. where outdoor activity is present, and $L_{eq(h)}$ approaches 72 dBA (exterior) for industrial areas and commercial properties. When the predicted design-year build alternative noise levels in the project area approach or exceed the NAC, a noise impact occurs, and requires the consideration of mitigation to reduce traffic noise.

In December 1993, the FHWA issued a memorandum to provide guidance on interpreting the word "approach" in section 772.5(g) of 23 CFR. The FHWA defined noise levels, which "approach" the noise abatement criteria, to be 1 dBA less than the Noise Abatement Criteria. Therefore, the FHWA NAC define traffic noise impacts for activity category B and category C when the loudest-hour traffic noise levels, $L_{eq(h)}$, are equal to or greater than 66 dBA and 71 dBA, respectively.

b. DelDOT Transportation Noise Policy Traffic Noise Impact Criteria

Criteria adopted by DelDOT for the determination of an impacted receptor under the State Noise Abatement Policy are:

- Loudest hour A-weighted noise levels, $L_{eq(h)}$
- Design year noise levels approach or exceed the FHWA NAC levels
- Design year noise levels substantially exceed existing noise levels by 10 dBA or more.

c. Analysis Procedures and Methodology

Loudest hour traffic noise levels cited in this technical memorandum were modeled-only. Previous modeling efforts conducted for the Millsboro and Milford study areas demonstrated good agreement between measured and predicted noise levels, especially for first-row receptors most susceptible to effects from traffic noise. The noise predictions were performed with the FHWA Traffic Noise Model (TNM) version 2.5 (FHWA-PD-96-009). The model incorporates vehicle noise emission levels updated for modern vehicle classifications, traffic speeds, and traffic volumes, as well as sound propagation factors from atmospheric absorption, divergence, intervening ground, intervening barriers, intervening rows of buildings, and areas of heavy vegetation. Existing 2005 classified base vehicle volume data were used to predict existing noise levels.

2. Environmental Consequences

a. Existing Noise Levels

In order to comprehensively assess loudest-hour traffic noise levels throughout the Ellendale study area, individual receptors were modeled at all first- and second-row noise-sensitive locations identified near the vicinity of existing US 113 and the Preferred Alternative alignment. The model predicts that traffic noise currently impacts a total of 47 noise-sensitive receptors. The majority of the predicted existing traffic noise impacts are concentrated in two areas – on the northbound side of US 113 from Fleatown Road to Hudson Pond, and on the northbound side of US 113 from Sharons Road to DE 16.

Table 1-2: Noise Levels and Impacts - Existing

Location	Noise Levels $L_{eq(h)}$	Predicted Traffic Noise Impacts
Fleatown Rd / Hudson Pond	64 - 69 dBA	24
Sharons Rd / DE 16	66 - 69 dBA	9
Other Individual Receptors	46 - 68 dBA	10
Historic Properties	65 - 75 dBA	4

Receptors were modeled at exterior areas of frequent human use. Variations in predicted traffic noise levels are due to differing distances between the receptors and roadway, and different traffic volumes, vehicle mix percentages, and speeds in the vicinity of a given receptor.

b. Predicted Design Year 2030 No-Build Noise Levels

Design year 2030 (future) traffic noise levels were predicted at all modeled receptors for which existing traffic noise levels were assessed. Design-year 2030 peak traffic volumes were utilized for No-Build and the main links of Preferred Alternative Option 01. These volumes consisted of the greater of peak hourly AM or PM traffic flow, and do not exceed LOS E.

The No-Build condition would result in 67 traffic noise impacts. Almost all (90%) of the additional No-Build impacts over the Existing condition would occur among the isolated "Other Individual Receptors" that are distributed broadly throughout the study area.

Table 1-3: Noise Levels and Impacts – No-Build, DY 2030

Location	Noise Levels $L_{eq(h)}$	Predicted Traffic Noise Impacts
Fleatown Rd / Hudson Pond	67 - 73 dBA	25
Sharon Rd / DE 16	69 - 73 dBA	9
Other Individual Receptors	46 - 71 dBA	28
Historic Properties	67 - 78 dBA	5

c. Predicted Design Year 2030 Preferred Alternative Build-Condition Noise Levels

The Preferred Alternative Option 01 would results in 73 total noise impacts in the Ellendale study area. Six (6) additional impacts would be generated by the Preferred Alternative over No-Build. The number of impacts in the two most densely-populated communities would remain the same as in the No-Build condition. Any property takes associated with improvements on the southbound side of the roadway are not accounted for in this analysis, and may include the residence with the 77 dBA predicted loudest-hourly equivalent Preferred Alternative Option 1 noise level.

Table 1-4: Noise Levels and Impacts – Option 01, DY 2030

Location	Noise Levels $L_{eq(h)}$	Predicted Traffic Noise Impacts
Fleatown Rd / Hudson Pond	68 - 73 dBA	26
Sharon Rd / DE 16	69 - 72 dBA	9
Other Individual Receptors	46 - 77 dBA	33
Historic Properties	69 - 80 dBA	5

d. Existing, No-Build and Preferred Alternative Noise Levels for Historic Properties

The noise receptor for the ***Teddy's Tavern*** property was modeled at a location near the southwest corner of the building, in close proximity to the existing US 113 alignment (**see Figure 1**). The predicted loudest-hour equivalent traffic noise levels for existing conditions (75 dBA), 2030 No-build Alternative (78 dBA), and 2030 Preferred Alternative (76 dBA) are all greater than the 71 dBA FHWA Noise Abatement Criteria (NAC) traffic noise impact threshold for a commercial land use, as defined by, and enforceable under DelDOT and FHWA Transportation Noise Policy.

The noise receptor for the ***Ellendale State Forest Picnic Facility*** was modeled at a location in close proximity to the existing US 113 alignment (**see Figure 2**). The predicted loudest-hour equivalent traffic noise levels for existing conditions (72 dBA), 2030 No-build alternative (76 dBA), and 2030 Preferred Alternative (80 dBA) are all greater than the 66 dBA FHWA Noise Abatement Criteria (NAC) traffic noise impact threshold for park lands, as defined by, and enforceable under DelDOT and FHWA Transportation Noise Policy.

The noise receptor for ***McColley's Chapel*** was modeled at a location in close proximity to the southwest corner of the existing intersection of McColley's Chapel Road and Redden Road (**see Figure 3**). The predicted loudest-hour equivalent traffic noise level for existing conditions is 65 dBA. This is below the 66 dBA FHWA Noise Abatement Criteria (NAC) traffic noise impact threshold for a church, as defined by, and enforceable under DelDOT and FHWA Transportation Noise Policy. Predicted loudest-hour equivalent traffic noise levels for the 2030 No-Build alternative is 67 dBA, and 2030 Preferred Alternative is modeled at 69 dBA.

The noise receptor for the ***ECW Camp S-53 Mess Hall*** was modeled at a location in close proximity to the southeast corner of the existing intersections of McColley's Chapel Road and Redden Road (**see Figure 3**). The predicted loudest-hour equivalent traffic noise levels for

existing conditions (68 dBA), 2030 No-build Alternative (71 dBA), and 2030 Preferred Alternative (73 dBA) are all greater than the 66 dBA FHWA Noise Abatement Criteria (NAC) traffic noise impact threshold for a church or community building, as defined by, and enforceable under DelDOT and FHWA Transportation Noise Policy. As such, impacts are anticipated absent, but also inclusive of future federal involvement for this undertaking.

The noise receptor for the ***Maringola Produce Stand*** was modeled at a location near the southwest corner of the historic structure, in close proximity to the existing US 113 alignment (**see Figure 4**). The predicted loudest-hour equivalent traffic noise levels for existing conditions (73 dBA), 2030 No-build Alternative (76 dBA), and 2030 Preferred Alternative (77 dBA) are all greater than the 71 dBA FHWA Noise Abatement Criteria (NAC) traffic noise impact threshold for a commercial land use, as defined by, and enforceable under DelDOT and FHWA Transportation Noise Policy.

3. Impact Assessment/Abatement

a. Noise Abatement Criteria

Traffic noise impacts were assessed, and the potential for introducing mitigation, such as noise walls or berms, was evaluated. Consideration for mitigation is based on the size of the impacted area, the predominant activity within the area, visual impact, construction practicality, feasibility, and reasonableness. The factors considered when determining whether the mitigation would be considered, as detailed in DelDOT's Transportation Noise Policy, are outlined as follows:

- A reasonable and feasible noise mitigation method is available. DelDOT will identify and evaluate impacts that noise abatement measures will have on the social, economic, and natural environments when determining the feasibility and reasonableness of a noise barrier project. An attempt will be made to provide noticeable and effective noise reductions of at least 5 decibels at impacted receptors. This reduction is known as Insertion Loss.
- Noise mitigation is cost-effective – not to exceed **$20,000 per benefited residence**.
- A benefited residence is a dwelling unit that would receive a noise reduction of at least 3 decibels from the installation of noise mitigation.
- Noise mitigation is acceptable to the majority of people affected.

When determining the cost-effectiveness of mitigation, residences that receive insertion loss of 3 to 5 dBA or greater are considered to benefit from noise wall or berm construction. For the purposes of cost evaluation, noise wall costs are estimated at $25.00 per square foot and $10.00 per cubic yard for noise berms. Cost figures are based upon prior experience and reflect the cost of constructing an earth berm or ground mounted noise wall system.

b. Impacts and Mitigation Feasibility and Reasonableness

Of the 73 predicted traffic noise impacts that would be associated with the construction of the Preferred Alternative, 50 are located on the northbound side of improved US 113. Approximately half of the 73 predicted Build-Condition traffic noise impacts are grouped in two

main areas - Fleatown Rd / Hudson Pond with 26 impacts, and Sharons Rd / DE 16 with 9 impacts. All of these noise-sensitive receptors require access to US 113, and such access would require gaps in any proposed mitigation to allow access. Effective noise reduction is not achievable in these cases; therefore, mitigation is not feasible. The remaining impacted receptors, even those for which direct access to US 113 is not required, are too broadly distributed throughout the study area to achieve cost-effective mitigation.

4. Impact Assessment/Abatement Conclusions

The main factor that will contribute to increased traffic noise levels and traffic noise impacts in the Ellendale study area will be the increase in 2030 design-year traffic volumes. The number of predicted traffic noise impacts for the Preferred Alternative Option 01 is slightly higher (by 6 impacts) than for the No-Build condition. For the cases where the density of noise-sensitive receptors might otherwise be sufficient to examine noise mitigation, measures required to allow property access would negate the effectiveness of the mitigation. For cases where noise mitigation would be feasible, the receptors are too widely distributed for the measures to be cost effective. Noise mitigation was not found to meet DelDOT Transportation Noise Policy feasibility and cost-reasonableness criteria for any locations within the Ellendale study area.