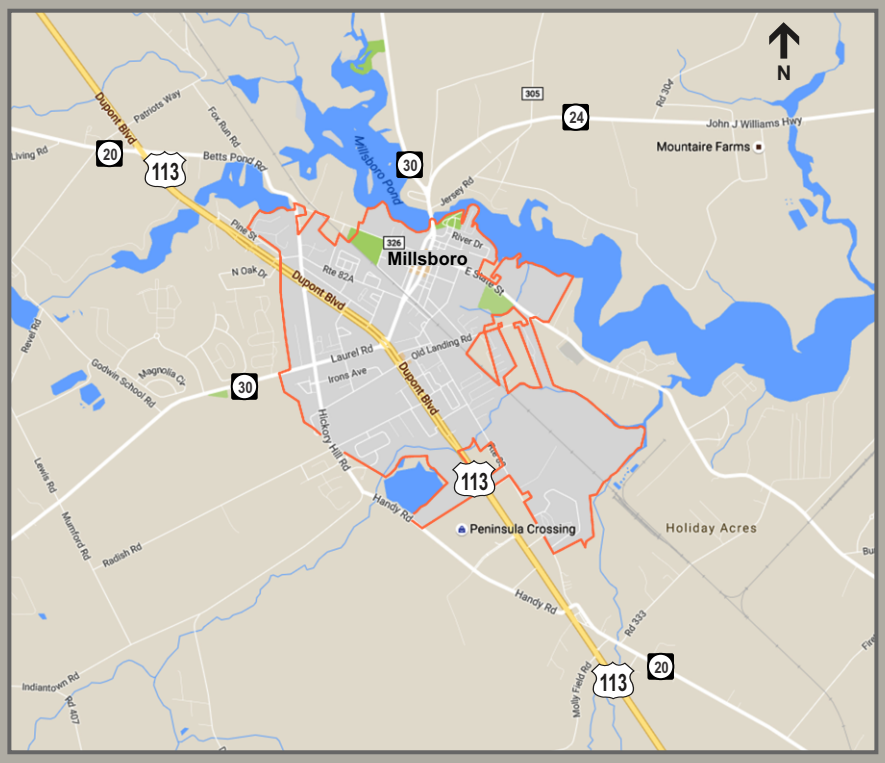
US 113 North / South Study

Millsboro-South Area Supplemental Draft Environmental Impact Statement



Federal Highway Administration

Delaware Department of Transportation

Sussex County Delaware

December 2016

FHWA ID No. E8–23669

US 113 North/South Study

From South of the Intersection of US 113 and Avenue of Honor to South of the MD State Line,
Sussex County, Delaware

MILLSBORO-SOUTH AREA SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT (SDEIS)

SUBMITTED PURSUANT TO
42 USC 4332(2)(C) and CEQ Regulations (40 CFR 1500 (et. seq.))

by the

United States Department of Transportation
Federal Highway Administration

and the

Delaware Department of Transportation

In cooperation with:

United States Army Corps of Engineers
United States Environmental Protection Agency
United States Fish and Wildlife Service

12/9/2016
Date of Approval

Mary Ridgeway, P.E.
Division Administrator
Federal Highway Administration

11/29/2016
Date of Approval

Rob McCleary, P.E.
Chief Engineer
Delaware Department of Transportation

The purpose of this project is to preserve mobility for local residents and businesses while providing highway improvements that reduce congestion, decrease frequency and severity of accidents, and accommodate anticipated growth in local, seasonal, and through traffic. The needs of the US 113 North/South Study: Millsboro-South Area project are: (1) meeting the growing traffic demand created by existing and future development; (2) addressing safety issues; (3) preserving a transportation corridor; (4) considering modal interrelationships; and (5) maintaining consistency with state and local plans for transportation systems.

The project area in Sussex County, Delaware, is centered on US 113. It extends approximately four miles west of Dagsboro; approximately two miles east of Dagsboro; approximately one mile south of the Maryland/Delaware state line; and approximately two miles north of Betts Pond. Evaluated alternatives include the No-build Alternative and the SDEIS Preferred Alternative. This document describes and summarizes the environmental impacts and costs associated with each of the alternatives.

Information on the date, time, and location of the public hearing will be published in local newspapers. Comments on the SDEIS are due by February 13, 2017 and may be submitted to either of the addresses below or made orally at the public hearing.

Additional project information, including an electronic version of this document, is available on the project website, http://deldot.gov/information/projects/us113/. The following persons may be contacted for additional information concerning this document:

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(_) Record of Decision

C. Informational Contacts

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D. Decision to Reconsider

This Supplemental Draft Environmental Impact Statement (SDEIS) has been prepared pursuant to 23 CFR§771.130, to review changes made to the US 113 North/South Study: Millsboro-South Area since the publication of the Draft Environmental Impact Statement (DEIS) in 2013 and to evaluate the changes to potential impacts.

The DEIS was released for public review and comment on August 16, 2013. DEIS Public Hearings were held on September 18 and 19, 2013 and were followed by a comment period ending October 4, 2013. Due to strong public opposition, the Delaware Department of Transportation (DelDOT) and the Federal Highway Administration (FHWA) agreed to reconsider the Purpose and Need of the project and the limits of the project area. This SDEIS reflects the updated Purpose and Need and the modified alternative that meets the new Purpose and Need.

Since substantial changes were made to the proposed action that are relevant to environmental concerns, FHWA and DelDOT prepared this SDEIS in accordance with National Environmental Policy Act (NEPA) regulations.

E. Purpose and Need

In response to comments on the DEIS, the provision for a limited access roadway has been removed from the Millsboro-South Area of the project. The purpose of the US 113 North/South Study, Millsboro-South Area is to preserve mobility for local residents and businesses while providing highway improvements that reduce congestion, decrease frequency and severity of accidents, and accommodate anticipated growth in local, seasonal, and through traffic. The needs of the US 113 North/South Study: Millsboro-South Area project are: (1) meeting the growing traffic demand created by existing and future development; (2) addressing safety issues; (3) preserving a transportation corridor; (4) considering modal interrelationships; and (5) maintaining consistency with state and local plans for transportation systems.

F. Description of Proposed Action

The Yellow Alternative, one of the retained build alternatives from the DEIS, was modified to address public comments on the alternatives evaluated in the DEIS. This Modified Yellow Alternative, referred to as the SDEIS Preferred Alternative, includes a two-lane State Route (SR) 24 Connector on new alignment, along with widening a segment of the existing alignment of US 113 in Millsboro from four to six lanes. Unlike the DEIS alternatives, the SDEIS Preferred Alternative proposes no construction between the SR 20 (Dagsboro Rd) intersection with US 113, south of Millsboro and the Delaware/Maryland State Line. Beginning approximately two miles north of SR 26 in Dagsboro and extending about 2.8 miles north to Betts Pond, US 113 will be widened from four to six lanes. A majority of the widening will be constructed in the existing grass median or within the existing right-of-way in areas where the grass median is too narrow. This alternative would eliminate the six unsignalized crossovers, while retaining the four existing signalized intersections along this stretch of roadway. The DEIS Yellow Alternative proposed grade separated intersections and overpasses to eliminate all left turns and cross traffic.

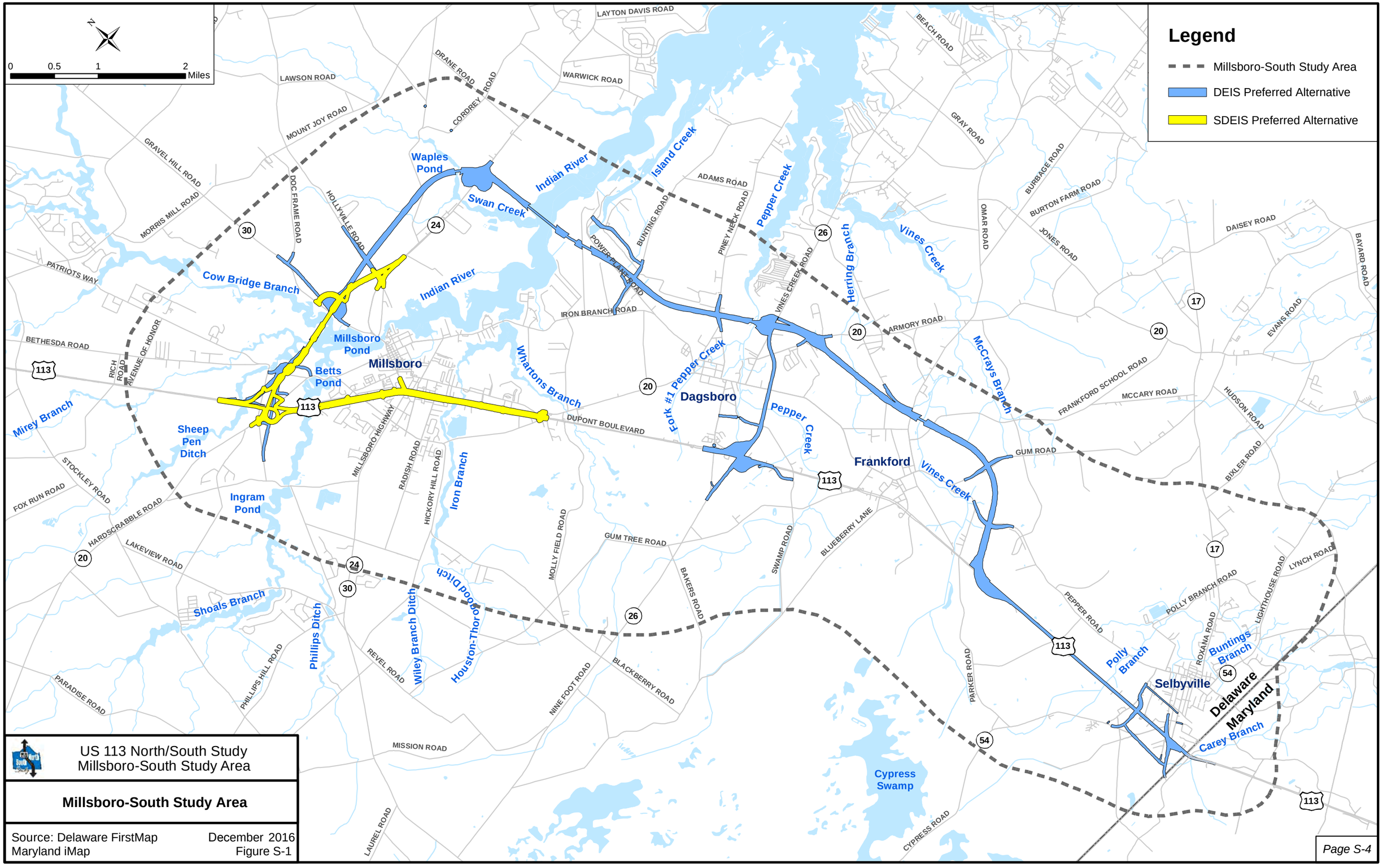
In response to comments received at the October 2015 Public Workshop, modifications were made to the geometry of the proposed SR 24 Connector to reduce impacts to surrounding properties. The new two-lane SR 24 Connector will tie into a realigned segment of SR 20 (Hardscrabble Road) west of US 113 and cross US 113 about 300 feet north of the existing intersection with SR 20 at a new grade separated intersection. The proposed SR 24 Connector will tie into existing SR 24 about 2.3 miles east of US 113, which is about one mile east of the existing SR 24 crossing near Millsboro Pond. A new roadway will be constructed to provide access from the SR 24 Connector to SR 30.

Figure S-1 shows the study area, comparing the SDEIS Preferred Alternative (Modified Yellow Alternative) with the DEIS Preferred Alternative (Blue Alternative).

G. Summary of Potential Impacts

The impacts of the SDEIS Preferred Alternative as compared to the No-build Alternative and the DEIS Preferred Alternative are summarized in **Table S-1**. These impacts are calculated based on the limits of disturbance as determined by the level of design at the time of analysis, and may change as the design is refined. Details regarding the proposed impacts of the retained alternatives may be found in **Chapter 3** of this **SDEIS** and **Chapter 3** of the **DEIS**.

This SDEIS relies heavily on the information provided in the DEIS. Documentation in the SDEIS focuses on the updates to the data since the DEIS was prepared, as well as changes in impacts between the DEIS Preferred Alternative and the SDEIS Preferred Alternative.



US 113 North/South Study
Millsboro-South Study Area

Millsboro-South Study Area

Source: Delaware FirstMap
Maryland iMap

December 2016
Figure S-1

Table S-1: Impact Summary[1]

Resource	No-build Alternative	DEIS Preferred Alternative (Blue)	SDEIS Preferred Alternative (Modified Yellow)
Length (miles)	2.8	16.5	5.1
Preliminary Cost (millions of dollars)	0	$687-839	$96-116
Wetlands (acres)	0	30.8	0.8
Stream Impacts (linear feet)	0	19,246	1,042
Subaqueous Lands (linear feet)	0	20,851	1,042
Tax Ditches (linear feet)	0	14,842	0
Rare, Threatened and Endangered Species (number)	0	18	14
Prime Farmland Impacts (acres)	0	64.9	4.6
Cultural Resources Impacts			
# NRHP Listed/Eligible Sites Potentially Impacted	0	4	2
# Known Archaeological Sites in the Limits of Disturbance	0	1	0
Properties Potentially Subject to Section 4(f)			
# Publicly-owned Parks and Recreation Areas[2]	0	0	0
# Cultural Resources[3]	0	4	2
Section 6(f) Property Impacts			
Properties Purchased with Land and Water Conservation Fund	0	0	0
Natural Area Impacts			
State Nature Preserves (acres)	0	0	0
Environmental Justice (Disproportionate and Adverse Impacts)			
Populations in Poverty	No	No	No
Minority Populations	No	No	No
Community Facilities Impacts			
Schools	0	1	0
Churches	0	1	1
Cemeteries	0	2	0
Parks and Recreational Facilities	0	0	0
Relocations			
# of Residential Properties	0	52	0
# of Business Properties	0	10	2
# of Agricultural Properties	0	9	2
# of Other Properties/Non-Profits	0	0	0
Total	0	71	4
Other Considerations			
Agricultural District Impacts (number / acres)	0 / 0	1 / 5.3	1 / 2.0
Agricultural Preservation Easement Impacts (number / acres)	0 / 0	3 / 11.6	0 / 0
Forest Land Impacts: 2007 Land Use (acres)	0	162	11.4
Air Quality (Number of sites that exceed NAAQS for CO)	0	0	0
Noise Impacts	0	100	54

1. The data in this table are from a variety of sources and from different dates. More details are provided in Chapter 3.

2. Based on input from the Town of Millsboro, Millsboro Pond has been reclassified as open space instead of a public recreational resource.

3. The Perry Shockley House referenced in the DEIS has been demolished.

H. Public Involvement Program

Subsequent to the release of the DEIS in August 2013, DelDOT and FHWA conducted two DEIS Public Hearings/Workshops and one SDEIS Public Workshop. DEIS Public Hearings/ Workshops were held on September 18 and 19, 2013. The purpose of the hearings/workshops was to update the public on activities that had occurred since the May 2010 workshops, review the Alternatives Retained for Detailed Study (ARDS), and obtain comments on the DEIS and the Blue Alternative (DelDOT's Recommended Preferred Alternative at that time).

On October 14, 2015, DelDOT held a Public Workshop at the Millsboro Town Center to update and inform area residents about the path forward for the project. Specifically, DelDOT informed the public that the previous Blue Alternative, an eastern bypass of Millsboro, Dagsboro and Frankford, was no longer being considered. Instead, DelDOT changed the focus to a Modified Yellow Alternative.

Additional information is included in **Chapter 4** of the **SDEIS** and **Chapter 5** of the **DEIS**.

I. Areas of Controversy

During the public comment period for the 2013 DEIS, public comments noted strong opposition to the Blue Alternative, identified as the DEIS Preferred Alternative. As discussed earlier, because of this opposition, DelDOT and FHWA decided to reconsider the Purpose and Need of the project, changing the focus to a Modified Yellow Alternative. A public workshop was conducted in October 2015 where attendees were presented with display plans of the Modified Yellow Alternative. The response from that workshop was more supportive of the project and what is now the SDEIS Preferred Alternative. Since the project is now limited to the new SR 24 Connector and improvements to a portion of US 113, there is less opposition from the public and controversy associated with the project. Comments associated with the project can be found in **Appendix B-Summary of Comments and Responses**.

J. Next Steps

This document will be made available for agency and public comment for a minimum of 45 days. During this time period, DelDOT will hold a public hearing and offer attendees an opportunity to provide comments. All comments received will be considered by FHWA to determine whether the use of a combined Final Environmental Impact Statement (FEIS)/Record of Decision (ROD) process is appropriate, or whether a separate FEIS should be prepared to address comments on the SDEIS prior to proceeding into a ROD.

1. Purpose and Need

CHAPTER 1 – PURPOSE AND NEED

1.1 INTRODUCTION

1.1.1 Background

The information on the background from the DEIS has not changed. In the **DEIS** this information was included in **Section 1.1.1**. The DEIS can be found online at http://www.deldot.gov/information/projects/us113/millsboro/millsboro_deis.shtml.

This SDEIS has been prepared to address changes made to the US 113 North/South Study: Millsboro-South Area since the publication of the DEIS in 2013 and to evaluate the changes to potential impacts.

The DEIS was published on August 16, 2013. Public Hearings/Workshops were held on September 18 and 19, 2013, followed by a comment period ending on October 4, 2013. In response to comments on the DEIS, the purpose of the project has been modified to remove the provision for a limited access roadway. Design modifications were also made to provide a new two-lane SR 24 Connector north of Millsboro and to widen existing US 113 from four to six lanes between SR 24 and SR 20 (Dagsboro Road). This modification to the Yellow Alternative (on-alignment), which was presented in the DEIS, is referred to as the **SDEIS Preferred Alternative**. It responds directly to the public opposition to the Blue Alternative presented in the DEIS.

For the sections of this SDEIS where data or information remains unchanged from the DEIS, a reference is provided to the section of the DEIS where the original information may be found.

1.1.2 Study Area

The information on the study area from the DEIS has not changed. Refer to **Section 1.1.2** of the **DEIS** for more details.

1.2 PROJECT PURPOSE

The original purpose of the US 113 North/South Study was to establish a continuous, limited-access facility through Sussex County from the Maryland/Delaware state line to SR 1 near the Dover Air Force Base, thereby completing a limited access corridor throughout the State of Delaware.

As described above, the provision for a limited access roadway has been removed from the Millsboro-South Area of the project. The purpose of the US 113 North/South Study: Millsboro-South Area is to preserve mobility for local residents and businesses while providing highway improvements that reduce congestion, decrease frequency and severity of accidents, and accommodate anticipated growth in local, seasonal, and through traffic.

1.3 PROJECT NEED

The Purpose and Need relies heavily upon the information provided in the July 2013 DEIS, while providing new, meaningful updated information.

The needs of the US 113 North/South Study: Millsboro-South Area project are:

- Meeting the growing traffic demand created by existing and future development;
- Considering safety issues;
- Preserving a transportation corridor;
- Considering modal interrelationships; and
- Maintaining consistency with state and local plans for transportation systems.

Data supporting these needs are described in **Section 1.3** of the **DEIS**. In addition, updated data has been collected and additional studies have been prepared to better support the project's need. The following sections provide additional information related to traffic demand, safety, and transportation corridor preservation.

1.3.1 Need: Traffic Demand

1.3.1.1 Summer Saturday Peak Traffic Analysis

In 2014, updated summer Saturday turning movement traffic counts were conducted at 26 locations within the Millsboro-South study area, including all signalized intersections and 17 unsignalized intersections along US 113 and SR 24.

Field observations were conducted to detect areas of congestion and queuing. SR 24 through Millsboro experiences congestion at State Street and at the intersection with US 113. Observations confirmed that long queues exist on the SR 24 approaches during the summer peak hours. Long queues were also observed on northbound and southbound US 113 in the vicinity of SR 24 and Centerview Drive.

The intersection levels of service (LOS) for existing, No-build, and the SDEIS Preferred Alternative are shown in **Table 1-1**. LOS is an estimation of the delay experienced by motorists given the volumes, available travel lanes, and traffic controls in place at an intersection. LOS ranges from A (best operations) to F (worst operations), with LOS D generally considered to be the minimum desired LOS at an intersection.

Three intersections, including the intersection of US 113 and SR 24, currently operate at an unacceptable LOS. Under the 2040 No-build Alternative, six of the nine signalized intersections experience a degradation in LOS, resulting in one additional intersection (for a total of four intersections) operating at an unacceptable LOS.

For the SDEIS Preferred Alternative, the travel forecast model predicts that the combination of the two-lane SR 24 Connector and the widening of US 113 will provide for acceptable LOS at all the evaluated intersections.

Table 1-1: Signalized Intersection Levels of Service (Summer Saturday Peak Traffic)

Intersection	2014 Existing	2040 No-Build	SDEIS Preferred Alternative (Modified Yellow)
US 113 at SR 20 (Hardscrabble Road)	C	D	n/a
US 113 at SR 24	F	F	D
US 113 at Centerview Drive	C	E	D
US 113 at Town Center Boulevard	B	C	B
US 113 at SR 20 (Dagsboro Road)	F	E	C
US 113 at SR 26	C	D	D
US 113 at SR 54	C	C	C
SR 24 EB at State Street	E	F	D
SR 24 WB at State Street	C	D	B
SR 30 and Connector	n/a	n/a	B
Hollyville Road at SR 24 Connector	n/a	n/a	B

Note: Shaded cells indicate unacceptable LOS.

1.3.2 Need: Safety

1.3.2.1 Updated Crash Data

US 113 Mainline

Updated crash data were analyzed along US 113 and SR 24 within the study area to determine crash rates and identify trends. US 113 and SR 24 were each subdivided into smaller sections of roadway based on the roadway segments provided in DelDOT's *2014 Traffic Summary*. The numbers of reported crashes occurring on each segment of US 113 between July 2011 and July 2014 are shown in **Table 1-2**.

Table 1-2: US 113 Mainline – July 2011 through July 2014 Average Crash Rate

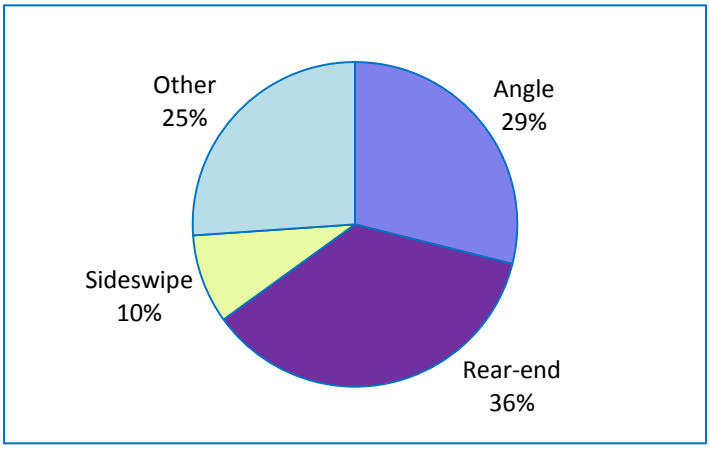
Section Description	Length (miles)	Section Crash Rate	Delaware Crash Rate	Sussex County Crash Rate
Between Maryland State Line and SR 54 (Cemetery Road)	0.74	4.01	3.50	2.01
Between SR 54 and Blueberry Lane	3.60	0.50	0.69	0.84
Between Blueberry Lane and South Dagsboro limits	1.75	1.09	0.69	0.84
Between South Dagsboro limits and North Dagsboro limits	0.55	2.84	3.50	2.01
Between North Dagsboro limits and SR 20	1.50	0.74	0.69	0.84
Between SR 20 and South Millsboro limits	0.85	2.26	3.50	2.01
Between South Millsboro limits and SR 24	0.55	3.21	3.50	2.01
Between SR 24 and North Millsboro limits	0.55	1.01	3.50	2.01
Between North Millsboro limits and SR 20	0.80	0.61	0.69	0.84
Between SR 20 and 0.1 mile north of Governor Stockley Road	2.90	0.61	0.69	0.84

Note: Shaded cells indicate crash rate higher than statewide average.

Average crash rates were calculated for each road section to provide a relative measure of comparison with other similar roads throughout Delaware and Sussex County. The calculated average crash rates were compared to the 2014 Statewide and Sussex County crash rates for roads of corresponding functional classification. DelDOT's Safety Section provided the Statewide and Sussex County Average Crash Rates for 2014. The comparison showed that three of the ten roadway sections being monitored had higher crash rates than the Statewide Average Crash Rate for roadways of the same type.

Reviewing the characteristics and patterns of highway crashes is an important step in identifying existing safety issues that can be corrected with geometric changes to highway and/or traffic engineering improvements. A total of 526 crashes were reported along US 113 in the study area between July 2011 and July 2014. **Figure 1-1** summarizes the crashes by type.

Figure 1-1: US 113 Crash Types (July 2011 – July 2014)



Angle crashes typically occur with the greatest frequency at unsignalized intersections, median crossovers, and driveways. Rear end crashes are most common on the approaches to signalized intersections. The prevalence of both of these crash types in the study area corresponds to the number and frequency of these types of existing access points along the US 113 corridor.

Thirty percent of all crashes occurred at or adjacent to signalized intersections within the study limits. **Table 1-3** is a summary of the intersections with the highest number of crashes (20 or more) from July 2011 through July 2014.

Table 1-3: Intersections Along US 113 Corridor with a High Numbers of Crashes

Intersection	Number of Crashes
SR 24/SR 30 (S024)	62
SR 20/Hardscrabble Road (S020)	43
SR 20/Dagsboro Road/Handy Road (S334, S337)	28
SR 26/Nine Foot Road (S026)	27

Anticipated growth in the study area is likely to create greater pressure to increase the number of access points and traffic signals along US 113. Because many of the crashes on US 113 occur at traffic signals, it is likely that the number of such crashes would increase as new signals are installed. These trends indicate that safety on US 113 is likely to deteriorate in the absence of roadway improvements.

SR 24

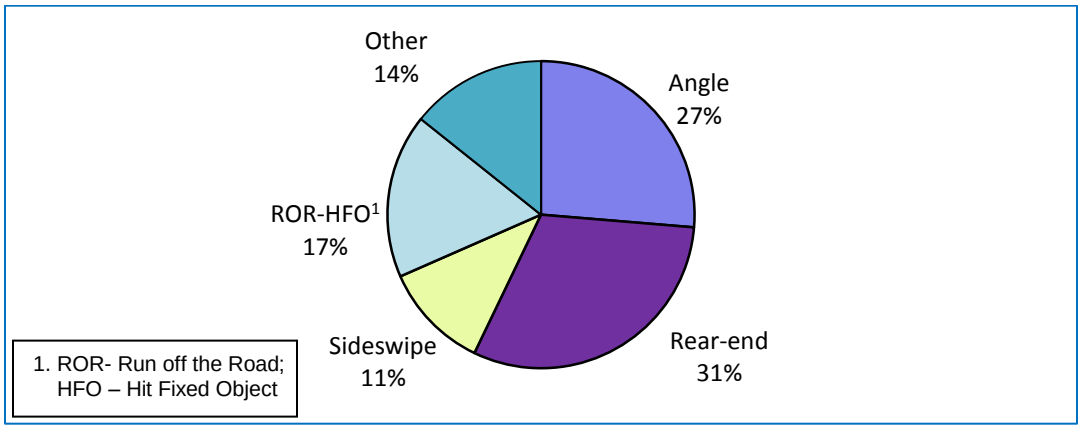
Average crash rates were also calculated for the section of SR 24 (S024, John J. Williams Highway/ Main Street) between the west Millsboro Town Limits and William Street Road (S309). These crash rates were compared to statewide and countywide crash rates for similar roads (refer to **Table 1-4**). According to the comparison, none of the five roadway sections being monitored had a crash rate higher than the Delaware average crash rate for roadways of its type.

Table 1-4: SR 24 Corridor – September 2011 – September 2014 Average Crash Rate

Section Description	Length (miles)	Section Crash Rate	Delaware Crash Rate	Sussex County Crash Rate
West Millsboro limits to US 113	0.37	2.40	3.95	2.60
US 113 to South Washington Street	0.09	2.01	3.95	2.60
South Washington Street to North Washington Street	0.35	2.87	3.95	2.60
North Washington Street to DE SR 30	0.15	0.64	2.07	1.92
DE SR 30 to Williams Street Road	2.92	1.01	2.07	1.92

A total of 133 crashes were reported along SR 24 in the study area between September 2011 and September 2014. **Figure 1-2** summarizes these 133 collisions by type.

Figure 1-2: SR 24 Crash Types (September 2011 – September 2014)



Twenty-three percent of all crashes on SR 24 within the project limits occurred at or adjacent to signalized intersections. **Table 1-5** provides a summary of the intersections (both signalized and unsignalized) with the highest number of crashes (10 or more) from September 2011 through September 2014.

Table 1-5: Intersections along SR 24 Corridor with a High Number of Crashes

Intersection	Number of Crashes
Signalized Intersections	
US 113	29
Unsignalized Intersections	
Hollyville Road / Jersey Road (S305)	11
Access to Mountaire Farms	10
Access to Wawa (just west of US 113)	10

1.3.2.2 Emergency Services Response Data

Sussex County Emergency Management is responsible for providing emergency services along the US 113 corridor in the study area. Fire, ambulance, and paramedic assistance are provided by the Selbyville, Frankford, Dagsboro, and Millsboro fire departments.

Emergency personnel responded to 2,667 calls along US 113 within the study area in 2014. Between 2010 and 2014 the majority of the incidents occurred in Millsboro (55.8%); followed by Dagsboro (18.7%), Selbyville (16.4%), and Frankford (9.0%). Although Selbyville, Dagsboro, and Millsboro have some medical facilities, the closest emergency facilities are in Milford, Lewes, and Seaford, Delaware and Berlin, Maryland, which are as many as 21 miles away from a given point on US 113 in the study area. Thus, it is essential for those who require emergency care that local highways not experience congestion problems that can delay accessing this care. During high congestion periods and in the summer tourist season, typical response times can increase, potentially resulting in the inability to provide care when it is urgently needed.

Emergency service responders in Selbyville, Dagsboro, and Millsboro are located on or adjacent to congested east-west routes between US 113 and Delaware's resort areas. This makes emergency calls doubly problematic: congestion delays emergency response, and preemption of signals by emergency vehicles interrupts signal progression. Even one preempted cycle could result in up to 15 minutes of additional congestion as the signal system returns to equilibrium.

1.3.2.3 Emergency Evacuation

In the event of an emergency, US 113 is designated as a primary north-south evacuation route from Kent County in the north to the Maryland border in the south. SR 54, SR 24, and SR 20, all of which cross US 113 in the study area, are designated as primary east-west evacuation routes. Additional traffic capacity along US 113 between Millsboro and Dagsboro would lead to safer and more efficient evacuations during emergencies. SR 24 would continue to serve as a designated evacuation route with the addition of the two-lane connector providing grade-separated access to US 113.

1.3.3 Need: Preserving a Transportation Corridor

1.3.3.1 Status of Construction Planned or Completed for the Transportation Corridor

US 113 is an important link on the Delaware, Maryland, and Virginia (Delmarva) Peninsula. Improvements to US 113 are already built, under construction, or planned for the areas north of Milford, within Ellendale and Georgetown, and south of Selbyville in Maryland. The Millsboro-South Area is an important link within the corridor that, if deficiencies were addressed, would enhance system compatibility and continuity and permit US 113 to more effectively serve future transportation needs.

Improvements to US 113 in Georgetown will not result in a limited access roadway (per the Finding of No Significant Impact [FONSI]) but will construct grade-separated intersections and remove all traffic signals and unsignalized crossovers. Therefore, the connection between the northern terminus of the Millsboro-South project and the southern terminus of the Georgetown study area will be consistent. The limited access portion of US 113 in Maryland will have to be transitioned back to an open section at the Maryland/Delaware state line. While the provision to create a limited access US 113 from Millsboro to the Maryland/Delaware state line has been removed, the operational improvements that are proposed would improve traffic and congestion.

2. Alternatives

CHAPTER 2 – ALTERNATIVES CONSIDERED

During the public comment period for the DEIS, the public expressed concern and opposition to the Preferred Alternative that was identified in the 2013 DEIS. In response to the public comments, the Yellow Alternative, one of the retained build alternatives from the DEIS, was modified to consist of a new two-lane SR 24 Connector and improvements to US 113 that will consist of widening from four to six lanes. This alternative, commonly referred to as the Modified Yellow Alternative, has been carried forward for detailed evaluation in this SDEIS and is described in the subsequent sections.

In 2013, the DEIS identified the Blue Alternative as the Preferred Alternative. Due to public and agency feedback, the Modified Yellow Alternative is the new Preferred Alternative. The Blue Alternative is included in this SDEIS for comparison purposes only.

While DelDOT has recommended a Preferred Alternative in this SDEIS, the final identification will not be made until agency and public comments on the SDEIS have been fully evaluated and the FHWA publishes the ROD for the project. After the release of this SDEIS, DelDOT will conduct another Public Hearing/Workshop and continue to refine the SDEIS Preferred Alternative with input from the public and regulatory agencies. The alternatives described in this document are preliminary and have not been fully engineered.

2.1 Alternatives Development

This section on alternatives development has not changed. Refer to **Chapter 2** of the **DEIS** for more information.

2.2 Alternatives Retained in the SDEIS

2.2.1 No-build Alternative

The No-build Alternative description is included in **Section 2.2.1** of the **DEIS**. The baseline conditions for the No-build Alternative are in **Section 1** of **Appendix A** of the **DEIS**.

The No-build Alternative does not meet the purpose of and need for this project because it does not accommodate growing traffic demand, address safety, preserve a transportation corridor, consider modal interrelationships, or maintain consistency with state and local plans for transportation systems. However, it provides a baseline condition with which to compare the SDEIS Preferred Alternative and its consequences. As such, the No-build Alternative is retained for evaluation purposes only. It is important to note that improvements associated with the No-build Alternative will have environmental effects that have not been evaluated as part of this study.

2.2.2 SDEIS Preferred Alternative

The Yellow Alternative presented in the 2013 DEIS was modified according to public comments to include the two-lane SR 24 Connector on the new alignment, along with widening a segment of the existing US 113 alignment in the Millsboro area from four lanes to six lanes. The Modified

Yellow Alternative is recommended as the Preferred Alternative in this SDEIS and is described in detail below. Detailed mapping of this alternative is located in **Appendix A**. **Figure 2-1** shows the SDEIS Preferred Alternative in comparison to the DEIS Preferred Alternative.

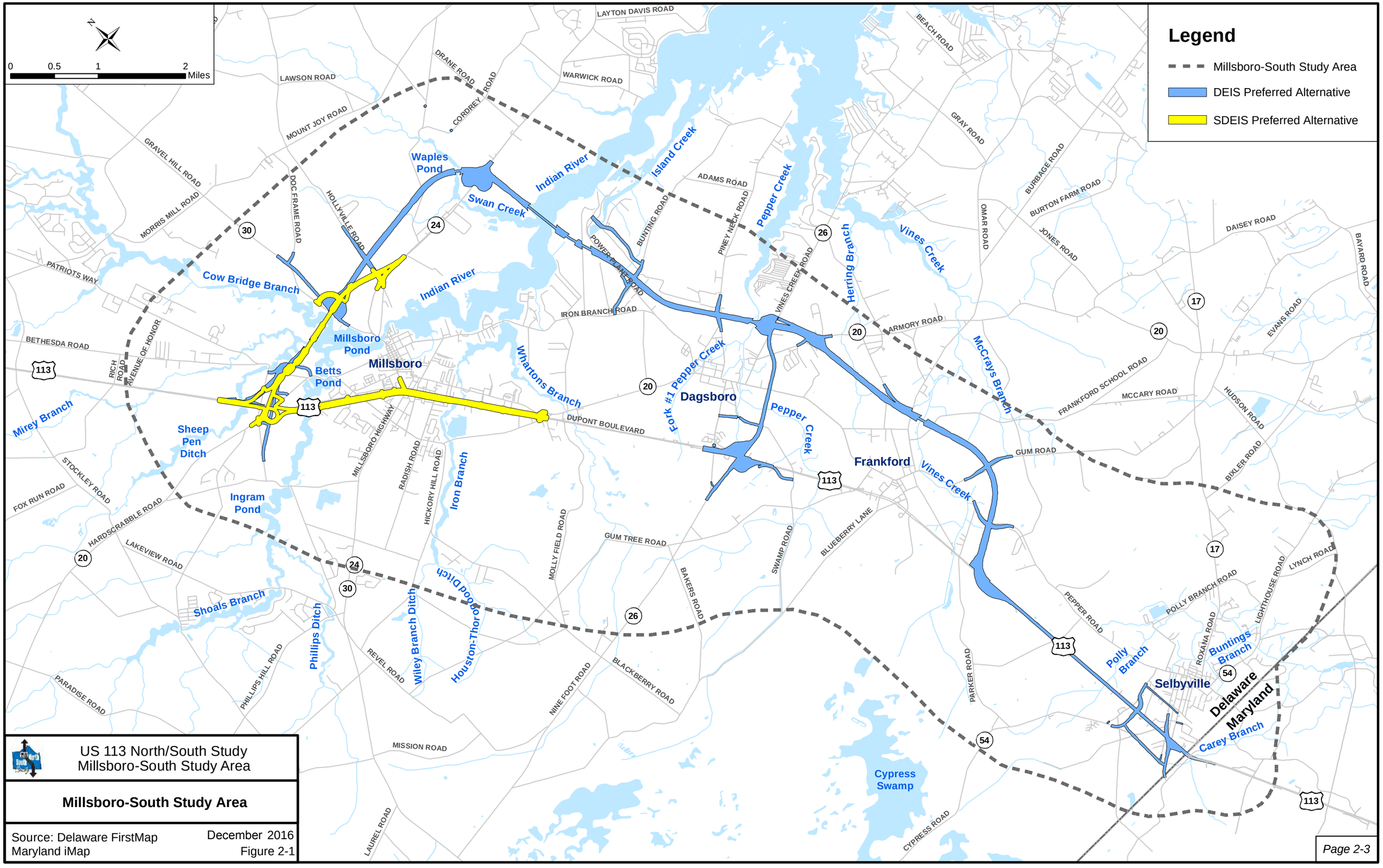
US 113 Mainline

Beginning at the Delaware/Maryland State Line, this alternative will follow the existing US 113 alignment for approximately 8.6 miles. The existing four-lane typical section and at-grade access, both signalized and unsignalized, will be retained through the towns of Selbyville, Frankford and Dagsboro and the portions of unincorporated Sussex County between those towns. US 113 will be widened from four to six lanes beginning at the SR20 intersection with US 113, south of Millsboro, extending approximately 2.8 miles north to Betts Pond Road. Beginning at SR 20 (Handy Road) and extending approximately one mile north to the southern Town limits, US 113 would be widened into the existing 36-foot median and along the west side where there is available right-of-way. The typical section will include six travel lanes; however, the lane width and shoulder widths may vary to avoid impacts to the existing Iron Branch stream crossing. Within the Town limits, US 113 will be widened into the existing 90-foot median and the proposed typical section will consist of six 12-foot travel lanes, three in each direction, a 48-foot grass median, and 10-foot inside and outside shoulders. North of the Town limits, where the existing median width narrows to 36 feet, the lane and shoulder widths will also be adjusted to avoid impact to the Betts Pond crossing and minimize right-of-way impacts.

Figure 2-2, located at the end of this Chapter, shows the typical section for the US 113 mainline improvements through the Town of Millsboro. It is anticipated that following seven unsignalized crossovers will be eliminated along this segment of US 113: (1) entrance to Mid-Sussex Center at the southern Millsboro town limits (2) First Street, (3) Old Landing Road, (4) Houston Avenue, (5) Wharton Street, (6) West Monroe Street, and (7) Oak Avenue/Kerlyn Drive. The four signalized intersections at SR 20 (Handy Road/Dagsboro Road), Peninsula Crossing (two signals), and SR 24 (Laurel Road/Main Street) will remain. The third southbound US 113 travel lane will become a lane drop for the southbound double left-turn lanes recently constructed at US 113 and SR 20 (Handy Road/Dagsboro Road). At SR 24, the east leg of the intersection will be widened to construct an exclusive right-turn lane, a shared left-turn/through lane, and an exclusive left-turn lane. The proposed storage length for the new westbound SR 24 lanes will be limited to approximately 385 feet due to surrounding cultural resource constraints. It is anticipated that the existing culvert crossing at Betts Pond will remain and the US 113 widening will be confined to the existing median at this location. The proposed US 113 widening will continue north of Betts Pond as the new travel lanes will serve the ramps at the proposed grade separation with the new two-lane SR 24 Connector.

SR 24 Connector

The new two-lane SR 24 Connector will tie into a realigned segment of SR 20 (Hardscrabble Road) west of US 113 and cross US 113 about 300 feet north of the existing intersection with SR 20. The proposed grade separation at US 113 and SR 20 will be a partial cloverleaf with direct ramp access in all directions. There will be loop ramps for the northbound to westbound movement and the southbound to eastbound movement.



US 113 North/South Study
Millsboro-South Study Area

Millsboro-South Study Area

Source: Delaware FirstMap
Maryland iMap

December 2016
Figure 2-1

It is anticipated that the proposed ramp terminals will be unsignalized with stop control for the ramp approaches. East of US 113, the SR 24 Connector will be aligned to minimize residential property impacts. The alignment will continue east, passing over Fox Run Road, Norfolk Southern Railroad, Millsboro Pond, and SR 30 (Gravel Hill Road) on bridges. A new roadway will be constructed to provide access from the SR 24 Connector to SR 30.

The proposed typical section for the SR 24 Connector will contain one 12-foot travel lane and a 10-foot paved outside shoulder in each direction. **Figure 2-3** shows the typical section for the SR 24 Connector. The proposed SR 24 Connector will tie into existing SR 24 approximately 2.3 miles east of US 113 and one mile east of the existing SR 24 crossing near Millsboro Pond.

The typical sections for both US 113 and the SR 24 Connector do not illustrate bridge crossings over major streams or waterways. For the proposed structures the standard median widths could be minimized to further reduce right-of-way impacts. However, as with other DelDOT projects, details regarding structures will be considered and addressed during final design.

Bicycle access would be provided along the shoulders of the SR 24 Connector. Due to the context of the proposed roadway and a lack of surrounding development, sidewalks are not proposed along the SR 24 Connector.

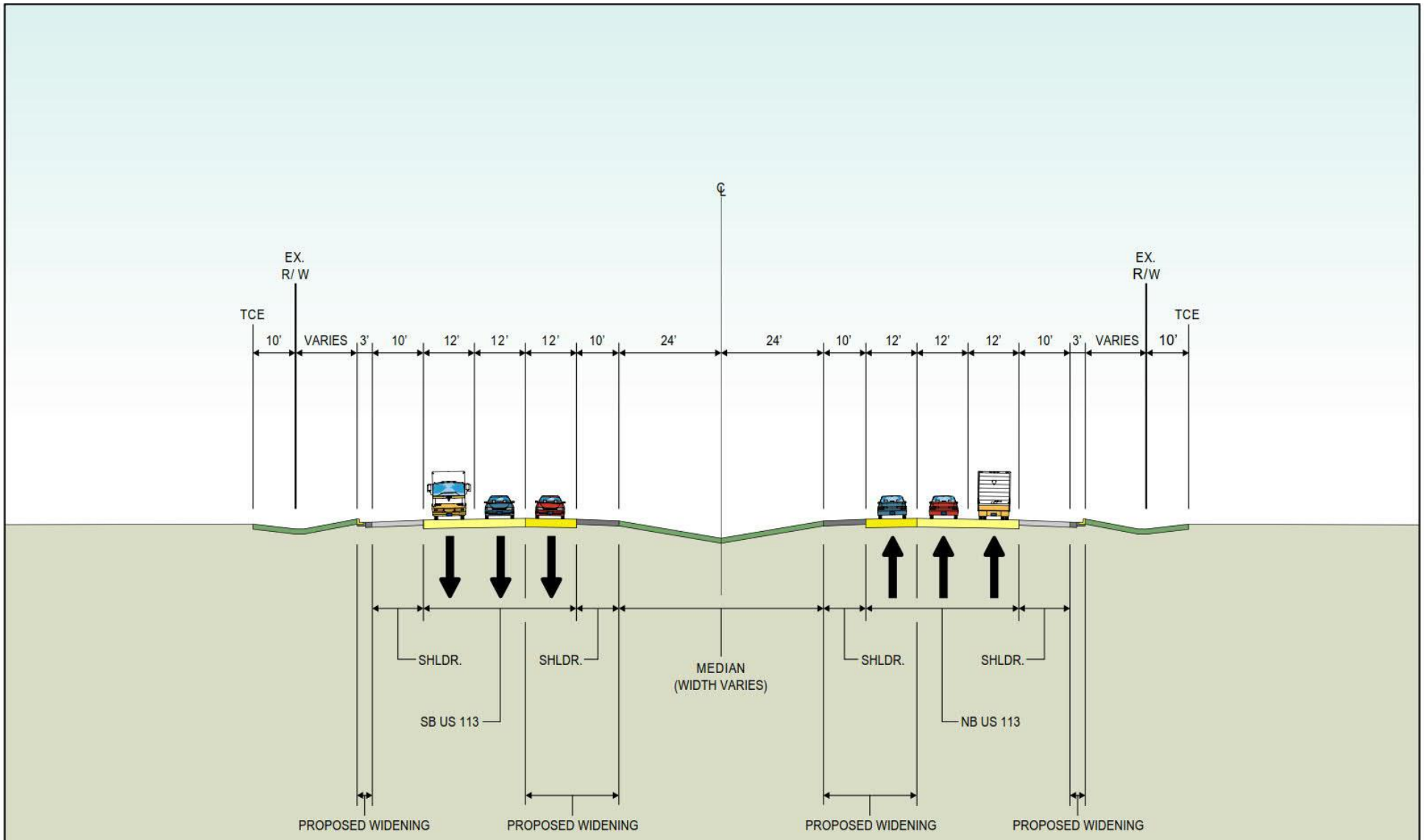
The proposed widening along US 113 will also accommodate bicycle access along the shoulders. Additionally, sidewalks are proposed along both sides of the roadway to provide pedestrian connections to existing and proposed development. The sidewalks will be designed to minimize impacts to adjacent resources and development.

The SDEIS Preferred Alternative for the Millsboro-South Area has been identified as the retained alternative that will best meet the project Purpose and Need. The SDEIS Preferred Alternative will accommodate growing traffic demand in the study area. 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 throughout the year), and the projected increase in regional traffic traveling through the Delmarva Peninsula all contribute to the need to increase accessibility and mobility in the study area. The SDEIS Preferred Alternative provides an additional lane in each direction along US 113 within Millsboro for approximately 2.8 miles (between SR 20 and Betts Pond Road), increasing traffic capacity and improving traffic flow. The new SR 24 Connector will provide increased accessibility and mobility by providing an additional connection to existing SR 24 and points east, thus reducing traffic on SR 24 within the Town of Millsboro and providing a more direct east-west route north of town.

Additionally, the SDEIS Preferred Alternative will remove several crossovers on US 113, provide additional turn lanes, and improve congestion by adding capacity. These modifications are expected to improve safety conditions in the study area. Emergency service response and emergency evacuation will be improved under the SDEIS Preferred Alternative. The proposed improvements along US 113 and SR 24 in the Millsboro-South Study Area will provide additional traffic capacity, leading to safer and more efficient response times for emergency services and evacuations during emergencies. Additionally, some of the existing crossovers may be converted to emergency access only locations that can be accessed by emergency services when needed.

Preserving a transportation corridor north-south along US 113 has been a priority throughout Sussex County since the project was initiated in the early 2000s. While the on-alignment improvements to US 113 no longer include the provision of limited access, the proposed improvements will increase the compatibility of the Millsboro-South Area with the connecting sections of US 113 north and south of the study area. The Millsboro-South Area is an important link within the corridor that, if deficiencies were addressed, will establish system compatibility and continuity and permit US 113 to more effectively serve future transportation needs.

The SDEIS Preferred Alternative maintains consistency with multiple state and local programs and plans to accommodate future development without degradation of the capacity of US 113.



PROPOSED NB & SB US 113

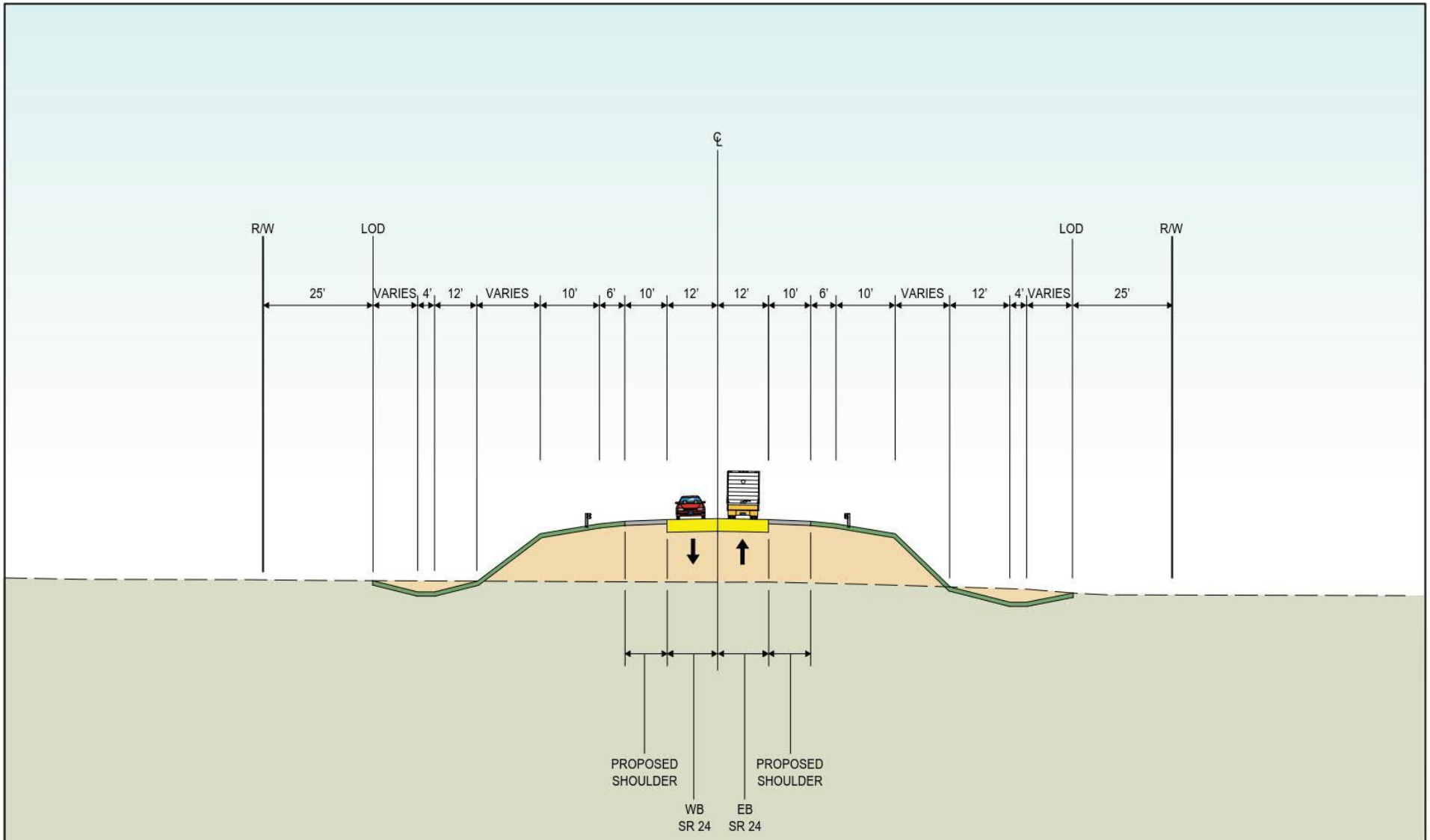
Horizontal and vertical dimensions are exaggerated. Not to scale.

US 113 North/South Study
Millsboro-South Study Area

US 113 Typical Section
SR 20 (Dagsboro Road)
to Betts Pond

Source: DelDOT Study Team

December 2016
Figure 2-2



PROPOSED SR 24 CONNECTOR

Horizontal and vertical dimensions are exaggerated. Not to scale.

US 113 North/South Study
Millsboro-South Study Area

SR 24 Connector
Typical Section

Source: DelDOT Study Team

December 2016
Figure 2-3

3. Affected Environment & Environmental Consequences

CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This Chapter discusses environmental and community resources present in the study area. The potential beneficial and adverse social, economic, and environmental effects of the SDEIS Preferred Alternative (Modified Yellow) for the Millsboro-South Area of the US 113 North/South Study are compared with the No-build Alternative and the DEIS Preferred Alternative (Blue). Unless otherwise specified, the impacts described are based on the estimated limit of disturbance (LOD) for each alternative. See **Chapter 2** for discussion of the original alternatives considered, the elimination of alternatives, and the development of the SDEIS Preferred Alternative; detailed mapping of the SDEIS Preferred Alternative is included in **Appendix A**.

Impacts for the proposed No-build Alternative are based on the assumption that all of the currently programmed, committed, and funded roadway and transit projects in the study area, except the US 113 North/South Study, would be implemented. The No-build and DEIS Preferred Alternative are included for comparison with the SDEIS Preferred Alternative only. The comparisons in this Chapter are based on the best available information. Discussion is provided in the summary of impacts in **Table 3-1**.

3.1 SOCIOECONOMIC CONDITIONS

The affected socioeconomic environment has not changed substantially since the publication of the 2013 DEIS. Refer to **Section 3.1** of the **DEIS** for the socioeconomic description of the study area. The following sections compare the environmental consequences to socioeconomic conditions and corresponding mitigation measures of the SDEIS Preferred Alternative to the DEIS Preferred Alternative.

3.1.1 Population and Housing

The No-build Alternative would not impact population or housing within the study area. **Table 3-2** compares the DEIS and SDEIS property impacts in the study area. The SDEIS Preferred Alternative would affect a total of 69 properties, which is a substantial decrease from the DEIS Preferred Alternative that affected 353 properties. Under the SDEIS, nine of these affected properties would be acquisitions and 60 would be partial acquisitions. The SDEIS Preferred Alternative would require four relocations, whereas the DEIS Preferred Alternative required 71 relocations. For relocations, owners would be provided assistance in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act*, as amended, and DelDOT's policies. The project's Relocation Plan would be available for review in project administrative files maintained by DelDOT.

The SDEIS Preferred Alternative would require the acquisition of 183 acres of land, not including existing roadway right-of-way; the DEIS Preferred Alternative would have required 1,084 acres.

Table 3-1: Summary of Impacts

Resource	No-build Alternative	DEIS Preferred Alternative (Blue)	SDEIS Preferred Alternative (Modified Yellow)
Wetlands and Waters of the US, Subaqueous Lands, and Tax Ditches			
Wetlands (acres)	0	30.8	0.8
Stream Impacts (linear feet)	0	19,246	1,042
Subaqueous Lands (linear feet)	0	20,851	1,042
Tax Ditches (linear feet)	0	14,842	0
Historic Resources			
Number of Historic Properties potentially impacted [1]	0	4	2
Archaeological Resources			
Number of Known Archaeological Sites in the Limit of Disturbance [2]	0	1	0
Prehistoric High Sensitivity Areas in the LOD (acres / %)	0	29 (2.7%)	7 (3.5%)
Early Historic-Period High Sensitivity Areas in the LOD Disturbance (acres / %)	0	32 (2.9%)	15 (7.5%)
Later Historic-Period Sensitivity in the LOD			
Extant Locations	0	134	80
High Sensitivity Locations	0	64	8
Noise Impacts			
Total Number of Residences Affected	0	100	54
Rare, Threatened and Endangered Species			
Number of RTE Species Potentially Impacted[3]	0	18	14
Other Considerations			
Agricultural Districts (Ten-Year) (number of properties)	0	1	1
(acres within properties)	0.0	5.3	2.0
Agricultural Preservation Easements (Permanent) (number of properties)	0	3	0
Prime Farmland (acres)	0	64.9	4.6
Forest land: 2007 Land Use (acres)	0	162	11.4
Property Impacts			
Properties affected (number)	0	353	69
Properties affected (total acres)	0	1,084	183
Access Rights			
Total Acquisitions (numbers of affected properties)	0	44	9
Relocations	0	71	4
Partial Acquisition / Modified Access (numbers of affected properties)	0	238	60
Costs			
Preliminary Cost Range (millions, construction cost only)	$0	$687-839	$96-116

1. Historic properties are individual resources and districts listed on or determined eligible for the National Register of Historic Places; eligibility status is based on consultant recommendations, reviewed by DelDOT and State Historic Preservation Office (SHPO) staff; consensus has been reached on all recommendations. Note, the Perry Shockley House referenced in the DEIS has been demolished

2. Archaeological sites on file with SHPO; most have not yet been evaluated for National Register eligibility; note that the LOD (here and in subsequent rows) does not include future stormwater management and other needs such as wetland mitigation.

3. Anticipated impacts to rare, threatened and endangered (RTE) species based on coordination to date with Delaware Department of Natural Resources and Environmental Control (DNREC). Detailed evaluation and coordination with DNREC and US Fish and Wildlife Service (USFWS) is continuing. The data in the potential RTE species areas row are not exhaustive. These data represent known occurrences of RTE species, not habitat for RTE species

Table 3-2: Number of Properties Affected, Comparison Between the DEIS and SDEIS Preferred Alternatives

Land Use	DEIS Preferred Alternative (Blue)	SDEIS Preferred Alternative (Modified Yellow)
Residential	**173**	**6**
Total	24	3
Partial	97	3
Relocations	52	0
Business	**34**	**41**
Total	2	2
Partial	22	39
Relocations	10	2
Agriculture	**100**	**16**
Total	6	4
Partial	85	12
Relocations	9	2
Non-Profits	**1**	**0**
Total	0	0
Partial	1	0
Relocations	0	0
Other	**45**	**6**
Total	12	0
Partial	33	6
Relocations	0	0
Total Acquisitions	**44**	**9**
Partial Acquisitions	**238**	**60**
Total Relocations	**71**	**4**
Total Affected Properties	**353**	**69**

Total acquisition – the complete property would be purchased in its entirety.
Partial acquisition – only a portion of the property would be purchased.
Relocation – when a structure, such as a home or business, would be directly impacted. These are included in the number of total acquisitions.

This total includes total acquisitions where the entire property is not required for the project, but the remaining portion would result in an uneconomic remnant, or its access would be eliminated by the alternative. Most of the impacted acreage is currently used for agriculture. **Table 3-3** details the total acreage impacted by land use classification.

Table 3-3: Acreage of Land to be Acquired

Land Use Classification	DEIS Preferred Alternative (acres)	SDEIS Preferred Alternative (acres)
Residential	211	2
Business	60	10
Agriculture	721	151
Other	92	20
Total (acres)	**1,084**	**183**

3.1.2 Employment Trends

The No-build Alternative would continue to perpetuate congestion, increasing travel times along roadways to access businesses and residences, thus decreasing efficiency for businesses. On-alignment improvements proposed under the SDEIS Preferred Alternative would improve mobility in the area by easing congestion, decreasing travel times, and increasing connectivity, thereby improving access to local businesses, which in turn contributes to an improved local economy. The SDEIS Preferred Alternative would also provide access to new areas for economic development and expansion.

An increase in employment and job opportunities for construction workers, suppliers, and inspectors would result during construction of the SDEIS Preferred Alternative. In addition, short-term employment, use of materials to construct the improvements, and purchases of goods and services generated by construction could create a short-term improvement in the local economy that would diminish once the construction is completed. Workers who live in the region may fill these new positions or it is possible that people may move to the area as a result of the job opportunities created by the study. The concentration of workers within the area could stimulate the local economy by increasing business at area commercial and retail establishments.

The SDEIS Preferred Alternative would impact 41 existing businesses along the alignment, requiring two to relocate, while the DEIS Preferred Alternative would have resulted in 34 businesses impacted and ten business relocations. The SDEIS Preferred Alternative may impact area businesses through a loss of income to the owners and loss of employment for workers. It is anticipated that some of these businesses would relocate to other locations in the study area that have direct access to US 113. Relocation assistance would be provided to businesses displaced by the construction of the SDEIS Preferred Alternative. The SDEIS Preferred Alternative may also impact planned businesses (commercial, retail, and industrial) in the study area, thus altering the number of jobs available in the future or altering the locations of these potential future employment opportunities.

Business owners directly impacted by the construction of the SDEIS Preferred Alternative would be contacted regarding potential acquisitions, and they would be fairly compensated for the impacts to their businesses. For relocations, owners would be provided assistance in accordance with the federal *Uniform Relocation Assistance and Real Property Acquisition Policies Act*, as amended, and DelDOT's policies.

3.1.3 Environmental Justice

Executive Order 12898, "*Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*" was signed by President Clinton in February of 1994. The Executive Order requires each Federal agency to identify and address any disproportionately high and adverse effects of Federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Further, the project is required to provide an opportunity for participation in the public involvement process.

Affected Environment

The identification of environmental justice (EJ) populations has been updated for the SDEIS since Census Block Group data from the US Census Bureau (Census) collected in 2014 is available for income characteristics. Additionally, analysis of the updated data allows for the inclusion of any new EJ populations based upon data from the 2010-2014 American Community Survey (ACS) 5-Year Estimates (Census, 2014).

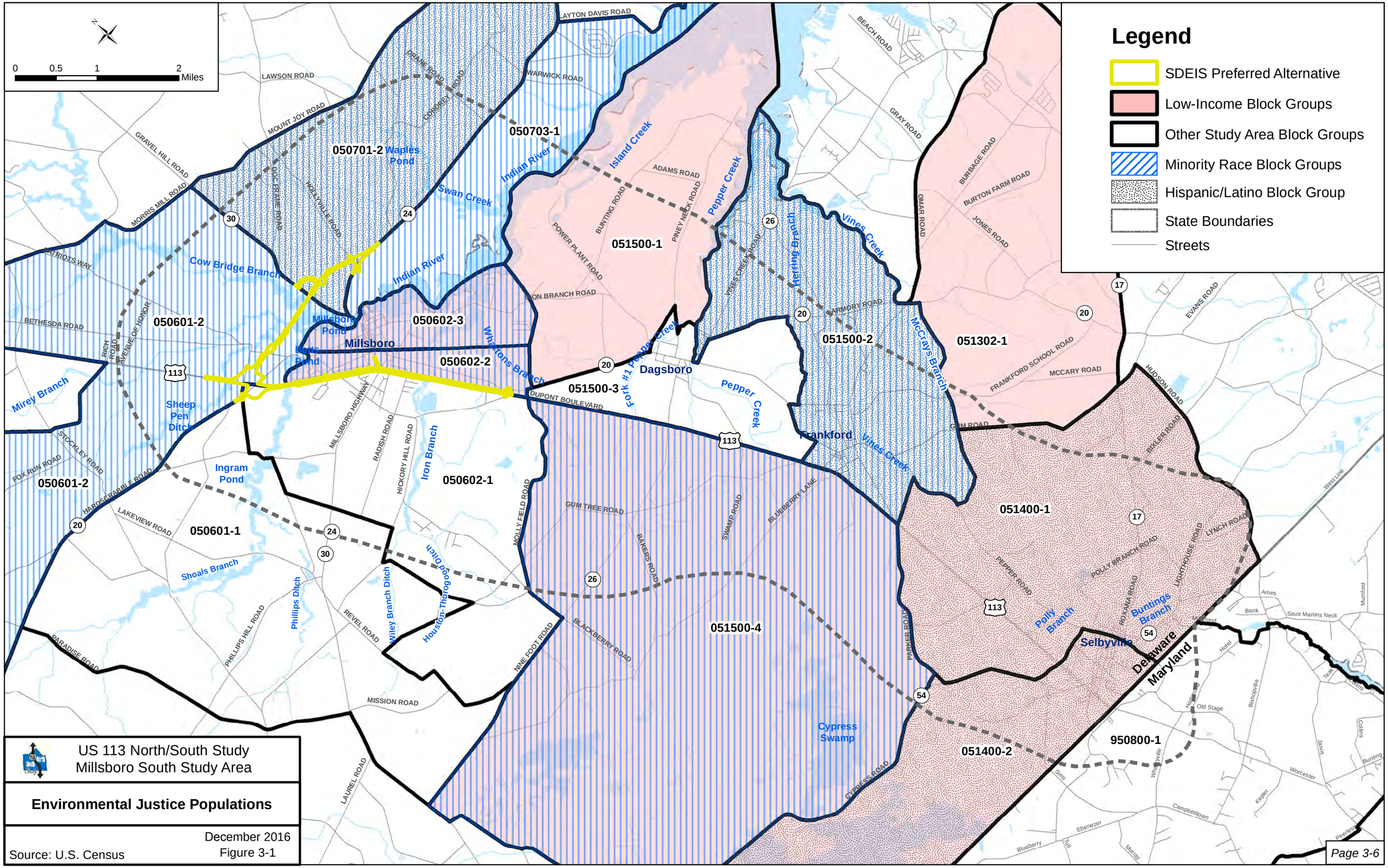
Low-income populations are identified using the annual statistical poverty threshold from the Bureau of the Census Population Reports. Within the study area Block Groups, an average of 11.2 percent of families are in poverty; therefore, 11.2 percent is used as the benchmark for the Millsboro-South study area. Seven Block Groups are above this threshold (refer to **Table 3-4** and **Figure 3-1**).

Table 3-4: 2014 Percentage in Poverty and Percentage Minority

Geographic Area/ Block Group	Total Population	Percentage of Families in Poverty	Percent Minority	Percentage of Hispanic/ Latino or Minority
Delaware	917,060	8.2%	30.3%	8.6%
Sussex County	203,737	9.1%	18.8%	9.0%
050601-1	3,000	9.1%	12.5%	8.1%
050601-2	1,966	7.8%	28.9%	2.1%
050602-1	2,434	7.6%	18.5%	0.0%
050602-2	1,584	23.6%	39.6%	2.7%
050602-3	2,114	20.7%	37.9%	9.2%
050701-2	1,551	11.0%	45.5%	17.2%
050703-1	907	7.6%	29.7%	0.9%
051302-1	2,161	12.3%	5.8%	10.0%
051400-1	2,723	12.1%	21.4%	30.2%
051400-2	1,738	11.4%	12.8%	39.5%
051500-1	1,354	21.4%	8.6%	0.4%
051500-2	2,396	4.2%	45.1%	23.1%
051500-3	974	3.5%	12.1%	13.1%
051500-4	860	13.2%	29.2%	13.1%
950800-1	1,253	3.9%	20.0%	1.4%
SDEIS Study Area	27,015	11.2%*	24.2%*	12.4%*

Source: US Census ACS 2014 5-Year Estimates
Note: Shaded areas indicate Block Groups that meet the thresholds for low income, minority, or Hispanic/Latino populations.
** represents an average of the study area.*

Minority and Hispanic/Latino populations are identified where the percentage of the minority or Hispanic/Latino populations exceed 50 percent or is meaningfully greater than the percentage in the general population or other appropriate unit of geographic analysis. For this study, the threshold is defined as ten percent greater than the study area average. Within the study area Block Groups, an average of 24.2 percent of the population is minority and 12.4 percent is Hispanic or Latino; therefore, 26.62 percent and 13.64 percent, respectively, are used as the threshold for the Millsboro-South study area.


N
0 0.5 1 2 Miles
Legend
SDEIS Preferred Alternative
Low-Income Block Groups
Other Study Area Block Groups
Minority Race Block Groups
Hispanic/Latino Block Group
State Boundaries
Streets
050701-2
Waples Pond
050703-1
051500-1
050601-2
050602-3
Millsboro Pond
Millsboro
Betts Pond
050602-2
051500-2
051302-1
051500-3
Dagsboro
Frankford
050601-1
Ingram Pond
050602-1
051400-1
051500-4
Cypress Swamp
051400-2
950800-1
Selbyville
Delaware
Maryland
Swan Creek
Indian River
Island Creek
Pepper Creek
Vines Creek
Herring Branch
McCrays Branch
Cow Bridge Branch
Mirey Branch
Sheep Pen Ditch
Fork #1 Pepper Creek
Iron Branch
Wharton Branch
Shoals Branch
Phillips Ditch
Wiley Branch Ditch
Houston-Thorogood Ditch
Polly Branch
Buntings Branch
LAYTON DAVIS ROAD
WARWICK ROAD
LAWSON ROAD
MOUNT JOY ROAD
GRAVEL HILL ROAD
MORRIS MILL ROAD
DOC FRAME ROAD
MOUNTAIN VILLE ROAD
ADAMS ROAD
BUNTING ROAD
PINEY NECK ROAD
POWER PLANT ROAD
PINES CREEK ROAD
BEACH ROAD
GRAY ROAD
OMAR ROAD
BURBAGE ROAD
BURTON FARM ROAD
JONES ROAD
EVANS ROAD
PATRIOTS WAY
BETHESDA ROAD
RICH ROAD
AVENUE OF HONOR
ON BRANCH ROAD
HARMONY ROAD
FRANKFORD SCHOOL ROAD
MCCARY ROAD
HUDSON ROAD
GUM ROAD
BIKLE ROAD
MILLSBORO HIGHWAY
RADISH ROAD
HICKORY HILL ROAD
DUPONT BOULEVARD
MOLLY FIELD ROAD
GUM TREE ROAD
BAKERS ROAD
SWAMP ROAD
BLUEBERRY LANE
PEPPER ROAD
POLLY BRANCH ROAD
LIGHTHOUSE ROAD
LYNCH ROAD
ROXANA ROAD
PARKER ROAD
CYPRESS ROAD
FOX RUN ROAD
STOCKLEY ROAD
HARDSCRABBLE ROAD
LAKEVIEW ROAD
PHILLIPS HILL ROAD
REVEL ROAD
BARADISE ROAD
MISSION ROAD
LAUREL ROAD
BLACKBERRY ROAD
NINE FOOT ROAD
Ames
Bank
Saint Martins Neck
Hotel
Old Stage
Bishopville
Worcester
Campbelltown
Ebenezer
Blueberry
Murray
Keplar
Jarvis
Collins
Bunting
Sims
Whitesville
West Line
Mumford
Peerless
113
20
24
26
30
54
17
US 113 North/South Study
Millsboro South Study Area
Environmental Justice Populations
December 2016
Figure 3-1
Source: U.S. Census

Seven Block Groups are above the threshold for minority populations and four Block Groups are above the threshold for Hispanic or Latino populations. Minority and Hispanic or Latino populations are summarized in **Table 3-4** and shown on **Figure 3-1**.

Environmental Consequences

These affected areas of EJ populations were compared to areas of no-impact or less impact to determine if the environmental effects on low income or minority race/ethnicity populations could be considered "disproportionately high and adverse."

The increasing travel times due to the congestion associated with the No-build Alternative would be equally borne by all communities and areas within the study area. Similar to the DEIS Preferred Alternative, the potential benefits of the project are expected to be equally borne by all communities and areas of the project. Benefits include decreased congestion on existing US 113 and surrounding roadways upon completion of the project and increased capacity to accommodate anticipated increases in area population, employment, and future development. The construction of the SDEIS Preferred Alternative would improve regional accessibility and connectivity, providing better access to area employment and communities.

The potential effects on land use, community facilities, air, and noise generally occur equally throughout the project corridor. Impacts in EJ areas were reviewed with regard to property impacts, relocations, and access. As per FHWA Order 6640.23, a disproportionately high and adverse effect on a minority or low income population means the adverse effect is predominantly borne by such population or is appreciably more severe or greater in magnitude on the minority or low-income population than the adverse effect suffered by the non-minority or non-low income population.

Overall, the SDEIS Preferred Alternative would have minimal adverse impacts to residential communities. Much of the impact from the proposed new roadway alignment (the SR 24 Connector) would occur in Census Block Groups 050601-2 and 050701-2, both of which have been identified as meeting the threshold for minority populations, and Block Group 050701-2 which meets the threshold for Hispanic and Latino populations, according to the EJ analysis. However, Block Groups cover large geographical areas which span a variety of communities and neighborhoods. The area that would be impacted by the SR 24 Connector is nearly all agricultural in nature (requiring two agricultural relocations), with minimal impacts to residential communities or other non-agricultural land uses in the Block Group. Therefore, it is not considered a disproportionately high and adverse effect to the minority populations residing in those Block Groups.

On-alignment improvements would affect two Block Groups identified as containing both low income area and minority populations. These improvements to US 113 would primarily occur within existing right of way. Aside from one business relocation, the improvements would have minimal negative impacts to surrounding communities. Therefore, no disproportionately high and adverse effects to EJ communities would occur. In comparison to the three relocations that would

occur under the SDEIS Preferred Alternative, as described above, 66 relocations would occur within Block Groups with EJ populations under the DEIS Preferred Alternative.

3.1.3.1 Environmental Justice Outreach

Coordination with environmental agencies, elected officials, community organizations and associations, and the public has been ongoing since the initiation of the project and is described in detail in **Section 3.1.3.3** and **Chapter 5** of the **DEIS**.

As discussed in **Chapter 5** of the **DEIS**, a mailing list of more than 8,000 addresses evolved during the project, including everyone who attended a Working Group meeting, Public Meeting/Workshop, or the Open House, who contacted DelDOT or the Project Team, or who live near any of the alternatives, regardless of race or ethnicity. Before each Public Meeting/Workshop, an announcement was sent to people on the mailing list, notifying them of the purpose, subject matter, time, and location of the workshop. A legal Public Notice was placed in newspapers serving the study area. Additionally, an FYI was put in the papers as an attractive "reader friendly" advertisement located outside the classified sections. The FYI and Public Notice appeared in the *News Journal – Kent and Sussex Edition*, *Sussex Countian*, and *Sussex Post*. Upcoming meetings/workshops were mentioned on the radio and on the project web site and window posters were placed in popular pedestrian travel locations in the study area. The posters were also produced in Spanish to meet the needs of the Hispanic community, and a Spanish interpreter was present at the Public Workshops. Outreach to EJ communities would continue with the Public Hearing on the SDEIS and as the project moves forward.

3.1.4 Elderly and Disabled Populations

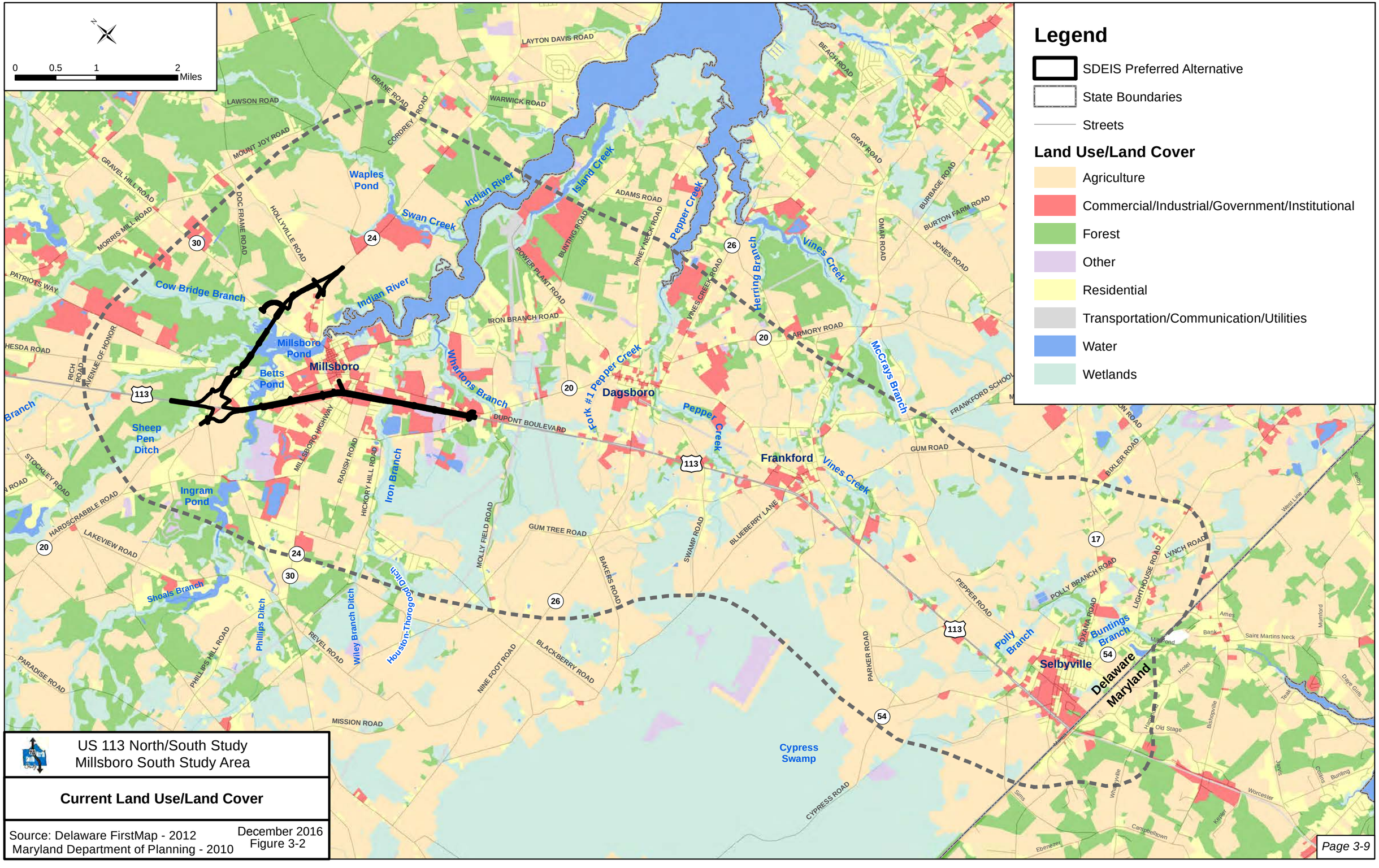
Age distribution and distribution of disabled populations within the study area, the County and the State have not changed substantially. Disproportionate impacts were not anticipated for the DEIS Preferred Alternative, SDEIS Preferred Alternative, and are also not anticipated for the No-build Alternative. For further information regarding these populations, refer to **Section 3.1.4** of the **DEIS**.

3.1.5 Livability Principles and Sustainability

The information on livability principles and sustainability from the DEIS has not changed, refer to **Section 3.1.5** of the **DEIS**.

3.2 LAND USE

Land use in the study area has not changed substantially since the publication of the DEIS. Refer to **Section 3.2** of the **DEIS** for a description of the affected environment of the study area. **Figure 3-2** shows the current land use/land cover in the study area. Following is a comparison of the environmental consequences to land use and proposed mitigation of the SDEIS Preferred Alternative compared with the DEIS Preferred Alternative.



US 113 North/South Study
Millsboro South Study Area

Current Land Use/Land Cover

Source: Delaware FirstMap - 2012
Maryland Department of Planning - 2010

December 2016
Figure 3-2

3.2.1 Existing Land Use

The No-build Alternative would have no direct impacts on the existing land use in the study area. Implementation of the SDEIS Preferred Alternative would result in the conversion of land from its present uses to transportation land use, primarily in order to construct the new SR 24 Connector alignment. Similar to the DEIS Preferred Alternative, the SDEIS Preferred Alternative would predominantly impact agricultural and forested land. Impacts from improvements to the existing US 113 alignment would primarily occur within areas currently classified as transportation land use. As shown in **Table 3-5** the land to be converted under the SDEIS Preferred Alternative compared to the DEIS Preferred Alternative is substantially less, with much less impact to agricultural and forest land.

Table 3-5: Land to be Converted from Current Uses

2012 Land Use Category	DEIS Preferred Alternative[1]		SDEIS Preferred Alternative[2]	
	Percentage	Acres	Percentage	Acres
Agricultural	61%	661.2	66.4%	84.8
Commercial, Industrial	4%	43.4	17.8%	22.8
Forest	20%	216.8	7.6%	9.7
Residential, Urban	5%	54.2	5.9%	7.5
Transportation, Government, and Utility	2%	21.7	1.0%	1.3
Water	0%	0	0.7%	0.9
Wetlands	4%	43.4	0.6%	0.8
Other	4%	43.4	0%	0
Total Acres Converted	100%	1,084	100%	127.8

Source:1: Delaware Office of State Planning Coordination, 2007 & Maryland Office of Planning, 2007
2: State of Delaware FirstMap 2012 Land Use/Land Cover

3.2.2 Future Land Use

The No-build Alternative would have no direct impacts on the future land use in the study area. The SDEIS Preferred Alternative is consistent with the Future Land Use Element of the Sussex County Comprehensive Plan. The SDEIS Preferred Alternative is located within or in close proximity to the anticipated Municipal Annexation Area for Millsboro, and thus would meet the Plan's goal of focusing growth near the municipality and its proposed annexation area. Similar to the DEIS Preferred Alternative, the SDEIS Preferred Alternative would provide improved north/south and east/west transportation capacity where Sussex County has identified its growth areas; however, the DEIS Preferred Alternative would encourage new development outside of the designated growth areas, which is not consistent with the County's Future Land Use Element. The construction of the SR 24 Connector and widening along US 113 would not preclude new development from occurring; however, it would help guide new development in a manner that is consistent with the Plan.

3.2.3 Planned Development

Planned or proposed development projects were obtained via the Preliminary Land Use Service (PLUS) program, administered through the Delaware Office of State Planning Coordination. The

list of developments includes major site plan reviews, rezoning, and conditional uses reviewed through the PLUS program. **Table 3-6** lists the developments within 600 feet and the amount of land acquisition anticipated from each development for the SDEIS Preferred Alternative.

Table 3-6: Planned Development Near the SDEIS Preferred Alternative

Planned/Proposed Development	Description	Location (Adjacent to portion of SDEIS Preferred Alternative)	Land Acquisition
Plantation Lakes	Residential/Commercial – Rezoning and Site Plan Review	SR 24 Connector	16.6 acres
Del Pointe	Commercial – Site Plan Review	SR 24 Connector	None
Duke Warehouse Property	Commercial – Site Plan Review	US 113 Mainline Improvements	<0.1 acres
Delmarva District Office	Commercial – Rezoning	US 113 Mainline Improvements	None
Village of Eagles	Residential – Site Plan Review	US 113 Mainline Improvements	None
Millsboro Landing	Residential – Site Plan Review	US 113 Mainline Improvements	None

The Plantation Lakes development, currently under construction, would be directly impacted by the proposed SR 24 Connector alignment. The development is converting a site of approximately 625 acres along US 113 west of Millsboro to residential and commercial use. The proposed SR 24 Connector would require the acquisition of approximately 16.6 acres of land from the site.

One additional proposed development, Del Pointe, would be situated near the proposed SR 24 Connector. Although land acquisition would not be required, the proposed project may cause audible or visual impacts during construction or after completion.

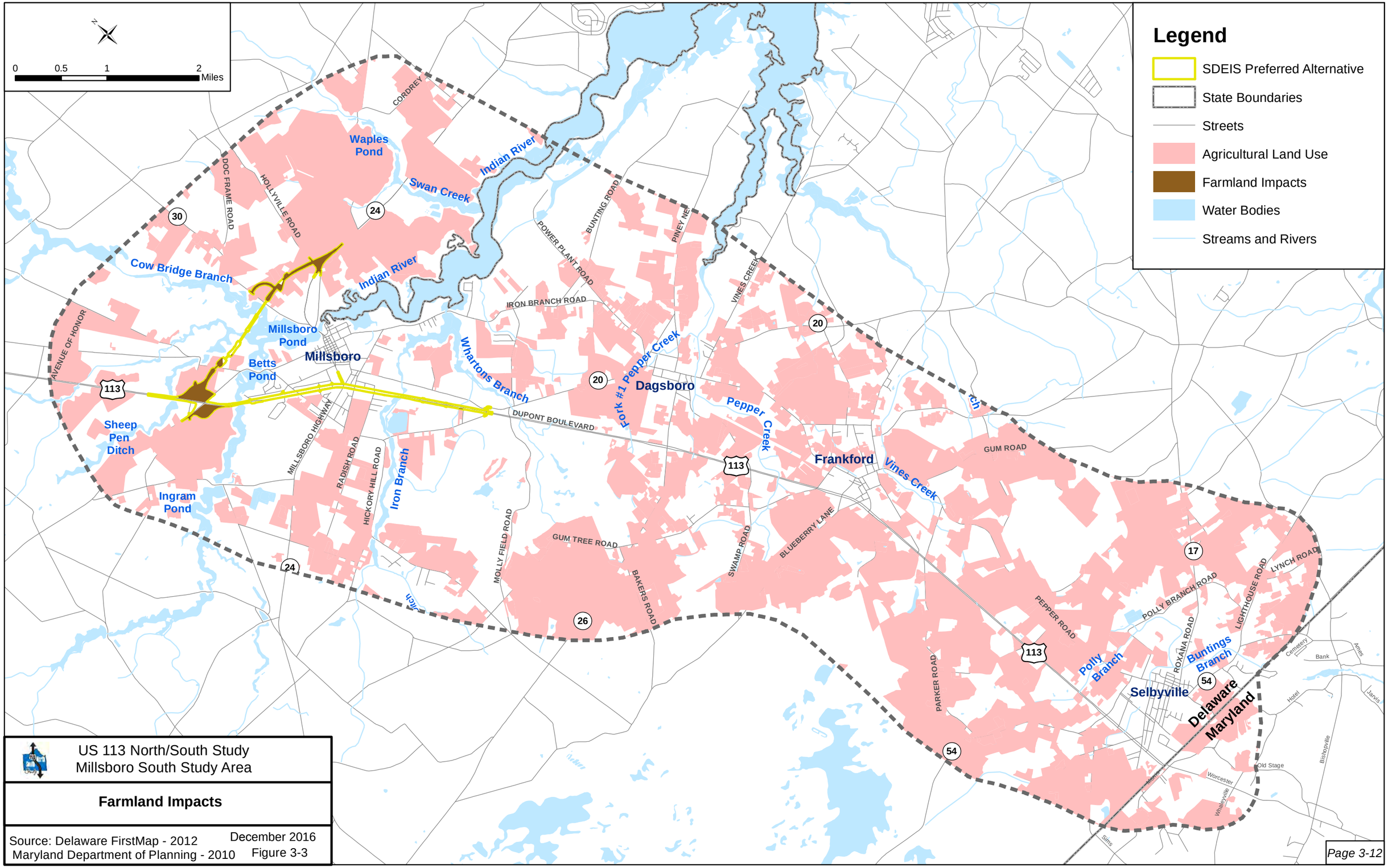
Four planned developments are located in the vicinity of US 113 mainline improvements proposed under the SDEIS Preferred Alternative. One of these developments, the Duke Warehouse Property proposed commercial development site would require the acquisition of a narrow sliver of land (less than 0.1 acres) due to the US 113 mainline improvements. The Delmarva District Office, Village of Eagles, and Millsboro Landing proposed developments would all be located within 600 feet of the US 113 mainline improvements, but would not require any land acquisition. The project could cause audible or visual impacts during construction or after completion.

In comparison, the DEIS Preferred Alternative would have directly impacted 13 planned developments, including Plantation Lakes and Del Pointe. The No-build Alternative would have no direct impacts on the planned development within the study area.

DelDOT would consult with the owners/developers of these and other affected planned development areas to provide appropriate compensation for property acquisitions.

3.2.4 Farmland

Although development would continue to occur, there would be no impacts to farmland from the No-build Alternative. **Table 3-7** and **Figure 3-3** display the potential farmland impact of the SDEIS Preferred Alternative compared with the DEIS Preferred Alternative.



US 113 North/South Study
Millsboro South Study Area

Farmland Impacts

Source: Delaware FirstMap - 2012
Maryland Department of Planning - 2010

December 2016
Figure 3-3

The SDEIS Preferred Alternative would directly impact 16 farm parcels and 84.8 acres of agricultural land, compared to the DEIS Preferred Alternative which impacted 22 farm parcels and 607.4 acres of agricultural land. The SDEIS Preferred Alternative would also create potential indirect impacts to farmland, such as revising access or making remaining portions of fields too small to farm.

Table 3-7: Farmland Impacts

Farmland Category	DEIS Preferred Alternative	SDEIS Preferred Alternative[2]
Direct Impacts to Farm parcels # (acres)	22 (607.4) [1]	16 (84.8) [2]
Prime Farmland Soils (acres)[3]	101.2	77.0
Prime Farmland (acres)	64.9	4.6
Agricultural Districts Impacted: # (acres)	1 (5.3)	1 (2.0) [4]
Agricultural Easements Impacted: #	3	0 [4]

1: Delaware Office of State Planning Coordination, 2007 & Maryland Office of Planning, 2007
2: State of Delaware FirstMap 2012 Land Use/ Land Cover
3: This impact information includes prime farmland soils already impacted or proposed for development. Includes "prime farmland if irrigated."
4: State of Delaware First Map 2016

The SDEIS Preferred Alternative would impact 4.6 acres of prime farmland, whereas the DEIS Preferred Alternative would impact 64.9 acres. There are five agricultural districts in the study area, and one, the Chorman Expansion of the Baxter Farms, Inc. District, would be impacted by the SDEIS Preferred Alternative. The 17-acre district is located on one parcel along Washington Street Extension, north of SR 24 between Gravel Hill Road and Hollyville Road. Approximately two acres of the district would be impacted. There are 11 permanent agricultural preservation easements scattered throughout the study area; none would be impacted by the SDEIS Preferred Alternative.

Property owners would be contacted regarding potential acquisitions and would be fairly compensated for the required acreage. In the case of agricultural preservation lands, compensation would be determined based on the "highest and best development use of the property with no consideration given to the restrictions and limitations" of the preservation agreement (*3 Delaware Code, Chapter 9, Subchapter IV, Section 922*). Compensation would also be provided for any farmland that may be unsuitable or inaccessible for farming purposes as a result of the roadway improvements. For those farm operations that are subject to relocation, owners would be provided relocation assistance in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Act of 1970,* as amended.

3.3 COMMUNITY FACILITIES AND SERVICES

The existing community facilities and services in the study area have not changed substantially since the publication of the DEIS. **Figure 3-4** shows the community facilities in the SDEIS study area and **Table 3-8** lists the facilities within Millsboro and their corresponding map ID numbers. DelDOT and FHWA have initiated consultation with town officials regarding the recreational significance of Millsboro Pond.

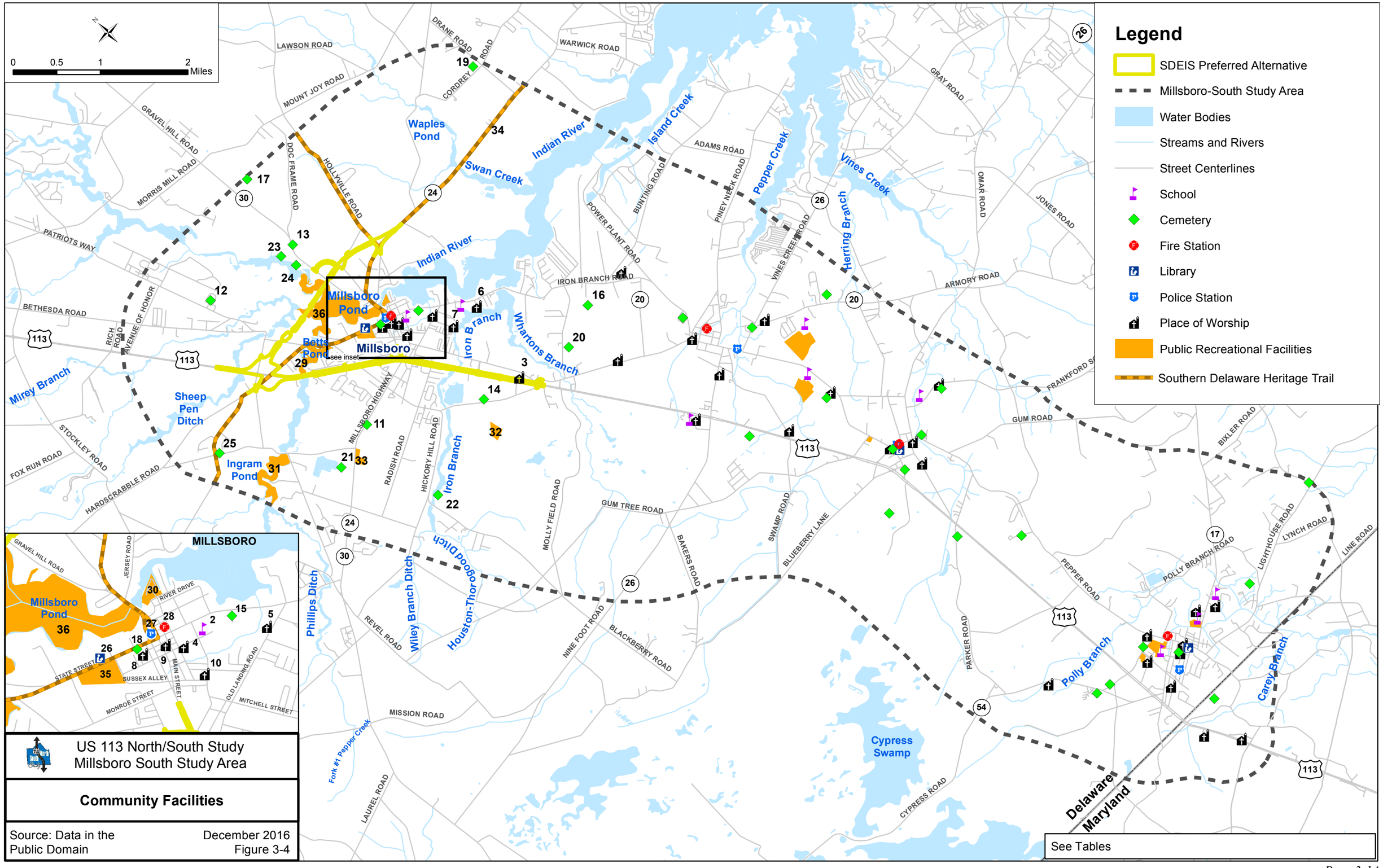

0 0.5 1 2 Miles
Legend
SDEIS Preferred Alternative
Millsboro-South Study Area
Water Bodies
Streams and Rivers
Street Centerlines
School
Cemetery
Fire Station
Library
Police Station
Place of Worship
Public Recreational Facilities
Southern Delaware Heritage Trail
Millsboro Pond
Betts Pond
Millsboro
(see inset)
Waples Pond
Ingram Pond
Sheep Pen Ditch
Mirey Branch
Indian River
Swan Creek
Island Creek
Pepper Creek
Vines Creek
Herring Branch
Iron Branch
Wharton Branch
Good Ditch
Houston-Thoroughgood Ditch
Wiley Branch Ditch
Phillips Ditch
Fork #1 Pepper Creek
Polly Branch
Carey Branch
Cypress Swamp
Delaware
Maryland
LAWSON ROAD
DRANE ROAD
CORDREY ROAD
WARWICK ROAD
MOUNT JOY ROAD
GRAVEL HILL ROAD
MORRIS MILL ROAD
DOC FRAME ROAD
HOLLYVILLE ROAD
PATRIOTS WAY
BETHESDA ROAD
AVENUE OF HONOR
RICH ROAD
STOCKLEY ROAD
FOX RUN ROAD
HARDSCRABBLE ROAD
MILLSBORO HIGHWAY
RADISH ROAD
HICKORY HILL ROAD
MOLLY FIELD ROAD
GUM TREE ROAD
REVEL ROAD
MISSION ROAD
LAUREL ROAD
NINE FOOT ROAD
BLACKBERRY ROAD
BAKERS ROAD
SWAMP ROAD
BLUEBERRY LANE
CYPRESS ROAD
PARKER ROAD
POWER PLANT ROAD
BUNTING ROAD
PINEY NECK ROAD
ADAMS ROAD
IRON BRANCH ROAD
VINES CREEK ROAD
ARMORY ROAD
GRAY ROAD
OMAR ROAD
JONES ROAD
FRANKFORD
GUM ROAD
BIXLER ROAD
PEPPER ROAD
POLLY BRANCH ROAD
LIGHTHOUSE ROAD
LYNCH ROAD
LINE ROAD
MILLSBORO
GRAVEL HILL ROAD
JERSEY ROAD
RIVER DRIVE
STATE STREET
SUSSEX ALLEY
MAIN STREET
OLD LANDING ROAD
MONROE STREET
MITCHELL STREET
US 113 North/South Study
Millsboro South Study Area
Community Facilities
Source: Data in the Public Domain
December 2016
Figure 3-4
See Tables

Table 3-8: Community Facilities within Millsboro

Figure 3-4 ID	Name	Location
Schools		
1	East Millsboro Elementary School	29346 Iron Branch Road
2	Millsboro Middle School	302 East State Street
Religious Institutions		
3	Dickerson Chapel AME	28845 DuPont Boulevard
4	Grace United Methodist Church	330 E. Church Street
5	Jesus New Pentecostal Prayer Room	26580 Old Landing Road
6	New Holy Trinity Church of God in Christ	1st Street
7	Saint Luke Baptist Church	St Luke Road
8	St. Mark's Episcopal Church	corner of West State & Ellis Streets
9	United Faith Church of Deliverance	214 Main Street
10	Wesleyan Church of Millsboro	255 Wilson Highway
Cemeteries		
11	Adkins/Old Field Cemetery	Millsboro Highway, between Godwin School Road & Kendall Street
12	DE Veteran's Memorial Cemetery	26669 Patriot's Way
13	Frame Family Cemetery	west of Gravel Hill Road, ~ 0.1 mile south of Doc Frame Road
14	Marvel Family Cemetery	east side of Handy Road, ~ 0.5 miles south of Hickory Hill Road
15	Millsboro Cemetery	State Street (next to middle school)
16	Mumford Family Cemetery	south of Iron Branch Road, in wooded area next to power line adjacent to Secluded Lane
17	Pauper Cemetery	west of Gravel Hill Road, between Doc Frame & Mount Joy Roads
18	St. Mark's Episcopal Church Cemetery	West State & Ellis Streets
19	Thoroughgood Cemetery	near intersection of Cordrey & Drane Roads
20	unnamed cemetery	agricultural field at the corner of Thorogoods Road and the railroad tracks
21	unnamed cemetery	between the quarry on Dutton Lane & Millsboro Highway
22	unnamed cemetery	near intersection of Injun Town & Hickory Hill Roads
23	unnamed cemetery	west of Gravel Hill Road, near Cow Bridge Branch
24	unnamed cemetery	west of Gravel Hill Road, near Cow Bridge Branch
25	unnamed cemetery	north side of Godwin School Road, ~ .06 miles west of Country Living Road
Libraries		
26	Millsboro Public Library	Millsboro
Emergency Services		
27	Millsboro Police Department	307 Main Street
28	Fire Company Station 83	109 East State Street
Public Parks and Recreation Facilities		
29	Betts Pond	Betts Pond Road
30	Cupola Park	Morris Street and Indian River
31	Ingram Pond	Godwin School Road
32	new park #1	Handy Road
33	new park #2	Millsboro Highway
34	Southern Delaware Heritage Trail	Sussex County/Millsboro
35	W. B. Atkins Memorial Park	State Street
36	Millsboro Pond*	Millsboro

**To date the recreational significance of Millsboro Pond has not been determined.*

Source: Delaware Department of Education, Sussex County GIS, John Milner Associates, internet searches, field reconnaissance

This has resulted in no official determination of facts from the town as Officials with Jurisdiction (OWJ) of the Pond, as per the Town of Millsboro letter from the Mayor and Council, dated October 3, 2016, regarding Section 4(f) Determination—Millsboro Pond. Because of this and to advance the project, FHWA and DelDOT have decided to await publication of the SDEIS and receipt of SDEIS Public Hearing comments from Town officials, local citizens and resource agencies as to the recreational significance of Millsboro Pond per federal regulations (*http://www.ecfr.gov/cgi-bin/text-idx?%20tpl=/ecfrbrowse/Title23/23cfr774_ main_02.tpl*). This will support FHWA in making a Section 4(f) determination of Millsboro Pond as a significant public recreational resource and an evaluation of project impacts and effects, including consideration of *de minimis* finding by FHWA. To achieve this, the following Section 4(f) criteria will be applied as part of this NEPA process to facilitate Section 4(f) review and advance the Millsboro-South project for federal approvals:

- *Public notice and an opportunity for public review and comment concerning the effects on the protected activities, features, or attributes of the property must be provided. This requirement can be satisfied in conjunction with other public involvement procedures, such as a comment period provided on a NEPA document.*

- *The FHWA shall inform the official(s) with jurisdiction of its intent to make a de minimis impact finding per 774.5 (b): Following an opportunity for public review and comment as described in paragraph (b)(2)(i) of this section, the official(s) with jurisdiction over the Section 4(f) resource must concur in writing that the project will not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection. This occurrence may be combined with other comments on the project provided by the official(s).*

3.3.1 Traffic and Transportation

The No-build Alternative would affect future travel patterns. Traffic volumes on existing US 113 in the Millsboro-South Area are projected to increase by 20 percent by 2040, resulting in increased congestion and decreased safety. This congestion is likely to encourage drivers to seek alternate routes around the congested areas, resulting in increased traffic on secondary roads.

Less than one percent of the study area population uses public transportation to commute to work. The two existing bus routes in the study area could be positively affected by reduced congestion along the corridor. No negative impacts to public transit are expected from the SDEIS Preferred Alternative, nor were they expected from the DEIS Preferred Alternative.

The SDEIS Preferred Alternative, similar to the DEIS Preferred Alternative, would improve travel patterns for vehicles, trucks and buses by decreasing traffic and reducing congestion along US 113 and surrounding roadways. The SDEIS Preferred Alternative provides an additional lane in each direction along US 113 for approximately 2.8 miles (between SR 20 and Betts Pond) increasing the capacity and improving traffic flow. The new SR 24 Connector would provide increased accessibility, mobility, and safety by providing an additional east/west connection to existing SR 24 and reducing traffic through downtown Millsboro.

3.3.2 Neighborhoods

The proposed No-build Alternative would not directly impact neighborhoods. However, the increased traffic congestion along existing US 113 and adjacent streets that would result from the No-build Alternative would make it more difficult to travel between neighborhoods and may create difficulty traveling between residences and businesses. In addition, congestion on arterial routes could result in increased cut-through traffic in some neighborhoods.

The SR 24 Connector would have little impact on community cohesion in Millsboro because the alignment would bypass the municipality completely. However, this portion of the SDEIS Preferred Alternative would place a roadway in the rural area adjacent to the town, potentially separating it from the surrounding farms and rural residences, similar to the effects of the DEIS Preferred Alternative. The portion of the SDEIS Preferred Alternative along the existing US 113 corridor, while modifying some access points, would maintain access; therefore, community cohesion would not be substantially impacted. The SDEIS Preferred Alternative would also benefit the surrounding neighborhoods through improved travel patterns for vehicles, trucks, and buses by decreasing traffic and reducing congestion along US 113 and surrounding roadways. The SR 24 Connector would increase connectivity, linking parts of the study area that were previously less accessible, and would reduce traffic passing through the Town of Millsboro. The DEIS Preferred Alternative would result in similar benefits.

3.3.3 Schools

The No-build Alternative would not result in impacts to schools within the study area. The SDEIS Preferred Alternative would not result in direct impacts to school grounds, as compared with the DEIS Preferred Alternative, which would have impacted the Indian River High School property. Temporary or permanent road closures resulting from the SDEIS Preferred Alternative would affect school bus routes. DelDOT would coordinate with the Indian River School District to minimize disruptions to school bus routes. The SDEIS Preferred Alternative would also benefit the surrounding neighborhoods and schools by decreasing traffic and reducing congestion along US 113 and surrounding roadways. The DEIS Preferred Alternative would result in similar benefits.

3.3.4 Religious Institutions

The No-build Alternative would not result in impacts to religious institutions within the study area. The SDEIS Preferred Alternative would involve modified access to the Dickerson Chapel AME Church. Approximately 0.1 acres of the church property abutting US 113 could be impacted during construction. The impact is similar to the DEIS Preferred Alternative, which would also have required modified access to Dagsboro Gospel Fellowship.

3.3.5 Cemeteries

The No-build Alternative would not impact any known cemeteries within the study area. No known cemeteries would be directly impacted by the SDEIS Preferred Alternative. The two

previously identified cemeteries affected by the DEIS Preferred Alternative are avoided under the SDEIS Preferred Alternative. If any graves are identified during construction, the SDEIS Preferred Alternative would seek to avoid direct impacts to those areas.

3.3.6 Libraries

None of the libraries in Selbyville, Frankford, or Millsboro would be impacted by the No-build Alternative or by either the SDEIS Preferred Alternative or the DEIS Preferred Alternative, and no mitigation is required.

3.3.7 Emergency Services and Health Care

Similar to the DEIS Preferred Alternative, no emergency services or health care facilities would be directly impacted by the SDEIS Preferred Alternative or the No-build Alternative; therefore, no mitigation is proposed for the SDEIS Preferred Alternative. Delays in emergency response times may occur during construction; however, coordination with emergency providers would occur prior to and during construction to minimize impacts. The SDEIS Preferred Alternative would improve access on US 113 and along the SR 24 Connector, which could result in faster emergency response times due to reduced congestion and better access.

3.3.8 Parks and Recreation Facilities

The No-build Alternative would not result in impacts to parks or recreational facilities within the study area. The information on parks and recreation facilities from the DEIS has not changed, refer to **Section 3.3.8** of the **DEIS**. The SDEIS Preferred Alternative would not impact any parks or recreation facilities and would therefore not be subject to Section 4(f) with regard to public parks and recreation facilities. Additionally, no Section 6(f) resources or facilities that received funding from the Delaware Land and Water Conservation Trust Fund would be impacted by the project.

3.3.9 Utilities

The No-build Alternative would not result in impacts to utilities. The information on impacts on utilities from the DEIS has not changed, refer to **Section 3.3.9** of the **DEIS**. Utility impacts resulting from the SDEIS Preferred Alternative would require utility relocations. These relocations would involve aerial and underground utilities and could include existing water, sewer, electric, gas, cable, and fiber optic communications. DelDOT would coordinate with the appropriate service providers for any required movements of utility lines. Construction would be phased to minimize service interruptions.

3.4 AESTHETICS AND VISUAL QUALITY

Aesthetics and visual quality within the study area has not substantially changed since the publication of the DEIS. Refer to **Section 3.4** of the **DEIS** for a description of the affected environment of the study area. The No-build Alternative would have no effect on the visual or

aesthetic quality of the study area. Except for the effects of increasing congestion on the roadways, the landscape would continue to evolve with increasing development in urban areas and increasing suburban development in rural areas.

The following is a comparison of the environmental consequences to aesthetics and visual quality and proposed mitigation between the SDEIS Preferred Alternative and the DEIS Preferred Alternative.

The SR 24 Connector portion of the SDEIS Preferred Alternative would be located in a mostly rural area dominated by agriculture, forest land and scattered residences. There also are several stream and wetland systems near this portion of the SDEIS Preferred Alternative. The portion of US 113 that would be modified under the SDEIS Preferred Alternative passes through more urbanized areas, with a mix of residences, small businesses, and larger commercial business/retail centers.

The SDEIS Preferred Alternative would alter the landscape less than the DEIS Preferred Alternative due multiple factors. The new roadway alignment construction has been reduced from about 13 miles (DEIS) to less than three miles (SDEIS). Due to its length, the DEIS Preferred Alternative would affect the visual quality for the towns of Dagsboro, Frankford, and Selbyville, as well as the rural areas between these towns. The visual impacts of the SDEIS Preferred Alternative would be limited to the Town of Millsboro and the surrounding area, north of the Indian River. The new SR 24 Connector would be a two-lane, undivided roadway compared to the four-lane, divided roadway proposed for the DEIS Preferred Alternative. The increased roadway width for the DEIS Preferred Alternative would have a significant impact for many existing residential areas along the river. In addition, the DEIS Preferred Alternative had multiple grade separated intersections (GSIs) as compared to one GSI for the SDEIS Preferred Alternative. Because the topography in the area is flat, areas that are somewhat distant would have views of the new roadway as well. Existing natural land cover, farmlands, forests, and open spaces would change in character. In many places, the view of farm fields would be replaced by the view of a roadway and traffic, and the new roadway would be visible from numerous homes, some of which are historic.

Due to the scattered nature of housing in the study area, mitigation for visual impacts is not feasible. Improvements to the existing US 113 corridor would mainly stay within existing transportation right of way and would thus have minimal visual impact.

3.5 CULTURAL RESOURCES

The cultural resources within the study area have not changed substantially since the publication of the DEIS. Refer to **Section 3.5** of the **DEIS** for the description of the regulations, the methodology, and a description of the cultural resources. Further information on the architectural resources is included in the *Evaluation of NRHP Eligibility for Architectural Properties in the Millsboro-South Study Area, US 113 North/South Study,* dated January 2012, which is available online at http://www.deldot.gov/information/projects/us113/millsboro.

Figures 3-5 and **3-6** show the architectural resources within 600 feet of the SDEIS Preferred Alternative. **Table 3-9** lists those resources, their corresponding map ID numbers, and their National Register of Historic Places (NRHP) status.

Table 3-9: Architectural Historic Properties within 600 Feet of the SDEIS Preferred Alternative

Figure 3-5 ID	Cultural Resources Survey No.	Property Name	NRHP Status
1	S-10873	Charles B. Houston House	Eligible
2	S-10611	Walter McKinley Betts House	Eligible

* Note: the Perry Shockley House referenced in the DEIS has been demolished.

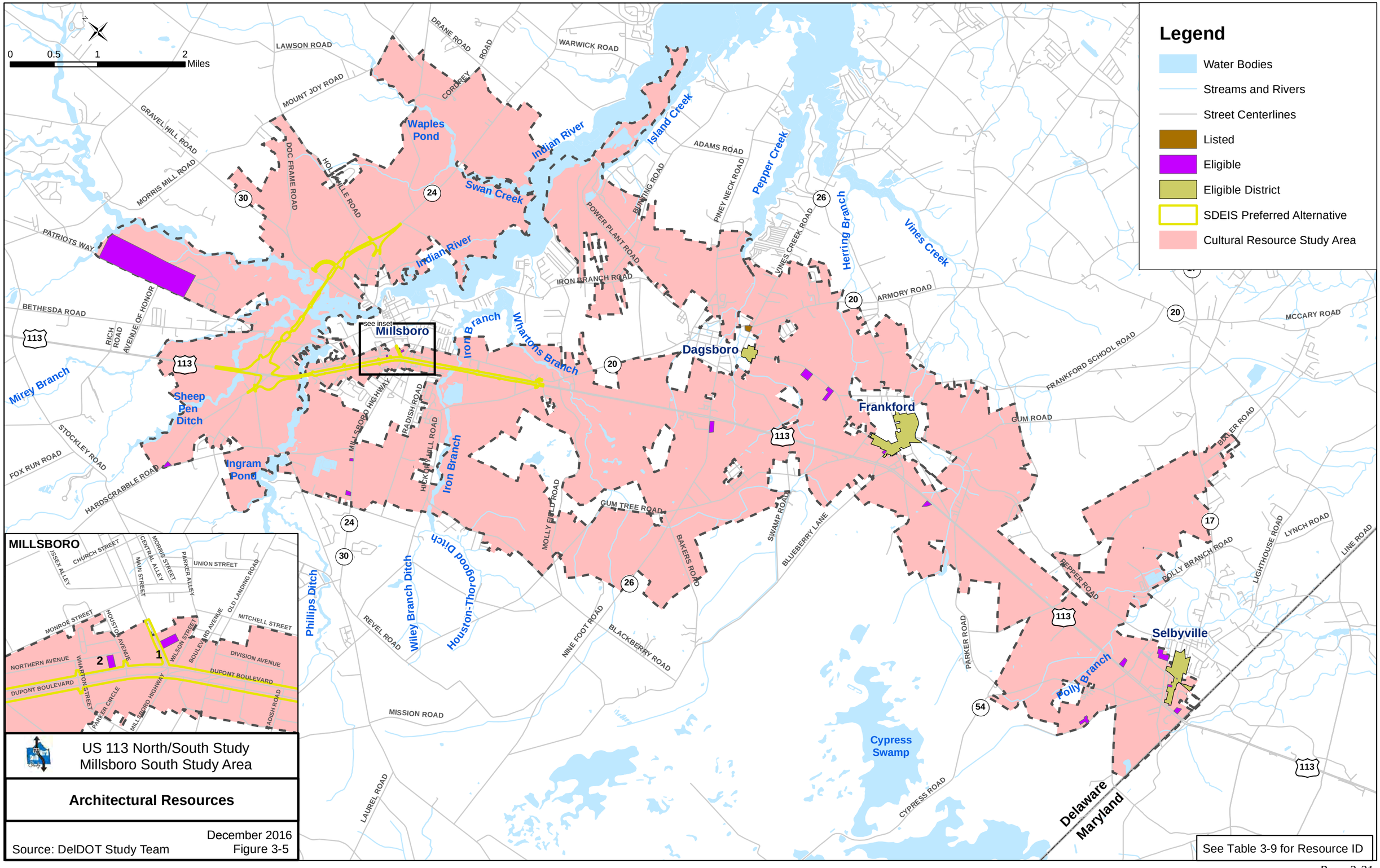
Throughout the NEPA process, environmental analysis, agency coordination, and preparation of the DEIS, DelDOT has consulted with the SHPO and the Sussex County Preservation Planner about the project's potential effect on historic properties. The public, including impacted or involved historic property owners, has been consulted throughout the planning process (see **Chapter 5** of the **DEIS** and **Chapter 4** of the **SDEIS**).

The Draft Section 106 Memorandum of Agreement (MOA) has been developed to formalize Section 106 consultation, resolve adverse effects and present a mitigation plan for all adversely affected historic properties, including a plan to identify and evaluate archaeological sites (**Appendix C**). On August 24th, 2016, FHWA notified the Advisory Council on Historic Preservation (ACHP), and the federally recognized Native American tribes of the revised draft MOA and the intent to include a copy of the Draft MOA in the SDEIS. FHWA initiated nation to nation consultation with the Delaware Nation, Stockbridge-Munsee Community, and Delaware Tribe of Indians. On September 14th, 2016, the ACHP concluded that they do not believe that their participation in the consultation to resolve adverse effects is warranted at this time. Copies of the correspondence are included in **Appendix C**.

On September 19th, 2016, the Stockbridge-Munsee Community indicated to FHWA that they do not have known cultural areas within the proposed APE and were opting out of consultation for this project. On September 20th, 2016, the Delaware Tribe of Indians requested to remain a consulting party and provided comments on the draft MOA. Copies of correspondence are included in **Appendix C**. As this project moves forward with its Section 106 consultation under a Draft MOA (**Appendix C**), FHWA and when applicable DelDOT on behalf of FHWA will continue its consultation on a nation to nation basis with the federally recognized tribes. DelDOT will also initiate and continue any consultation with the two state (non-federally) recognized tribes (Nanticoke Indian Tribe, and the Lenape Indian Tribe of Delaware). No other consulting parties or persons of interest have been identified.

3.5.1 Effects to Historic Properties

DelDOT would make a reasonable effort to avoid or to minimize adverse effects to the identified eligible historic buildings that are listed in **Table 3-9** and any as yet unidentified historic resources as the project develops. After preliminary plans have been submitted, FHWA and DelDOT, in consultation with the Delaware SHPO, would formally apply the Criteria of Adverse Effect in accordance with 36 CFR Part 800.5.


Legend
Water Bodies
Streams and Rivers
Street Centerlines
Listed
Eligible
Eligible District
SDEIS Preferred Alternative
Cultural Resource Study Area
0 0.5 1 2 Miles
N
Millsboro
Dagsboro
Frankford
Selbyville
Waples Pond
Ingram Pond
Sheep Pen Ditch
Mirey Branch
Indian River
Swan Creek
Island Creek
Pepper Creek
Herring Branch
Vines Creek
Iron Branch
Wharton Branch
Phillips Ditch
Wiley Branch Ditch
Houston-Thorogood Ditch
Polly Branch
Cypress Swamp
Delaware
Maryland
LAWSON ROAD
MOUNT JOY ROAD
GRAVEL HILL ROAD
MORRIS MILL ROAD
PATRIOTS WAY
BETHESDA ROAD
RICH ROAD
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IRON BRANCH ROAD
VINES CREEK ROAD
ARMORY ROAD
MCCARY ROAD
FRANKFORD SCHOOL ROAD
GUM ROAD
BRITTINGHAM ROAD
MILLSBORO HIGHWAY
RADISH ROAD
HICKORY HILL ROAD
MOLLY BIRD ROAD
GUM TREE ROAD
BAKERS ROAD
SWAMP ROAD
BLUEBERRY LANE
REVEL ROAD
NINE FOOT ROAD
BLACKBERRY ROAD
MISSION ROAD
LAUREL ROAD
CYPRESS ROAD
PARKER ROAD
PEPPER ROAD
BOLLY BRANCH ROAD
LIGHTHOUSE ROAD
LYNCH ROAD
LINE ROAD
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24
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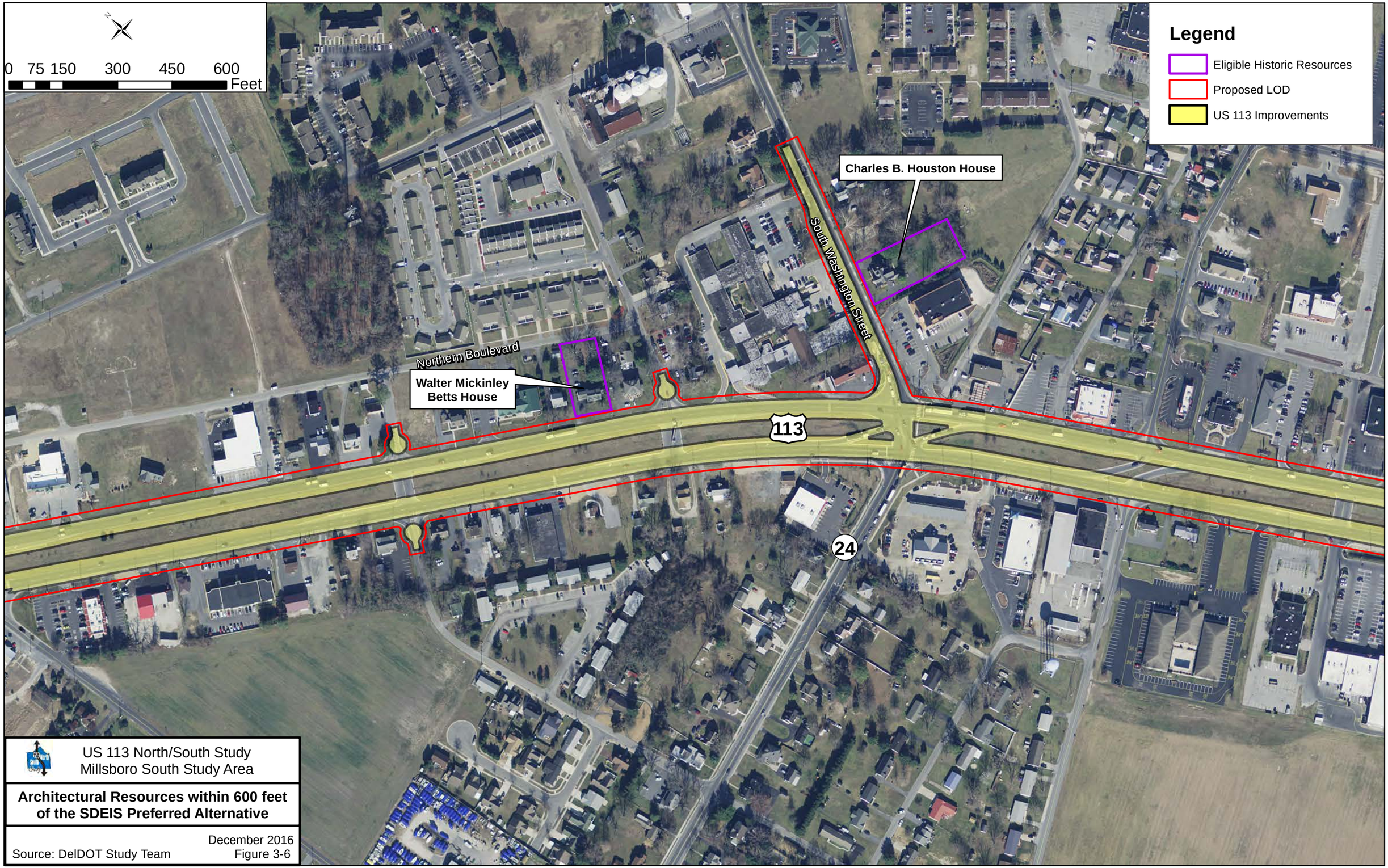
26
20
113
54
17
MILLSBORO
CHURCH STREET
ISSEX ALLEY
MORRIS STREET
CENTRAL ALLEY
MAIN STREET
PARKER ALLEY
UNION STREET
OLD LANDING ROAD
MONROE STREET
HOUSTON AVENUE
WILSON STREET
BOULEVARD AVENUE
MITCHELL STREET
DIVISION AVENUE
DUPONT BOULEVARD
NORTHERN AVENUE
WHARTON STREET
PARKER CIRCLE
1
2
US 113 North/South Study
Millsboro South Study Area
Architectural Resources
December 2016
Source: DelDOT Study Team
Figure 3-5
See Table 3-9 for Resource ID



US 113 North/South Study
Millsboro South Study Area

Architectural Resources within 600 feet of the SDEIS Preferred Alternative

Source: DelDOT Study Team

December 2016
Figure 3-6

If the project would have an adverse effect on historic buildings, DelDOT, in consultation with the SHPO and the property owner, would develop a mitigation plan. Options for mitigation would depend upon the nature of the adverse effect that the project would have on the eligible property and may include measures to address physical property impacts or visual and/or auditory impacts. Possible mitigation measures may include landscaping features, the development of pamphlets, videos, historical markers, brochures, websites, exhibits, displays for public buildings, booklets on the history of the project area, lectures or presentations at academic conferences, and/or public institutions such as schools and historical societies. Additionally, if the project would have a physical impact to an eligible resource, FHWA and DelDOT would evaluate possible Section 4(f) use.

The SDEIS Preferred Alternative has the potential to affect two architectural resources, while the DEIS Preferred Alternative would have had the potential to affect two historic districts and two eligible architectural resources. The No-build Alternative would not result in impacts to architectural facilities within the study area.

3.5.2 Archaeological Potential

The No-build Alternative would not result in impacts to archaeological resources within the study area. The DEIS Preferred Alternative would impact one National Register listed archaeological complex, the Indian River Archaeological Complex.
To estimate the areas of sensitivity potentially affected by the SDEIS Preferred Alternative, the archaeological predictive model was overlaid with the proposed LOD. **Table 3-10** shows the results of the model, compared with the results for the No-build Alternative and the DEIS Preferred Alternative. As shown in the table, there are less high sensitivity areas for each time period with the LOD of the SDEIS Preferred Alternative than the DEIS Preferred Alternative.

DelDOT is committed to completing the archaeological analysis necessary to determine the NRHP eligibility of archaeological resources that may be affected by ground disturbing activities. To date, a comprehensive Phase I archaeological identification has not been completed. The Draft MOA establishes the process for identifying archaeological resources within the study area of the SDEIS Preferred Alternative and evaluating eligibility for the NRHP. Additional efforts may include a more comprehensive Phase I analysis and consultation on the need for further investigation.

If eligible archaeological sites are identified and affected, DelDOT would make a reasonable effort to avoid these sites or to minimize impacts to them. If the eligible sites cannot be avoided, DelDOT would apply the Criteria of Adverse Effect in accordance with 36 CFR Part 800.5 and traditional or alternative forms of archaeological mitigation would be utilized. These are addressed in the Draft MOA (refer to **Appendix C**).

Table 3-10: Archaeological Potential of the SDEIS Preferred Alternative Compared with the DEIS Preferred Alternative

Archaeological Resources	No-build Alternative	DEIS Preferred Alternative	SDEIS Preferred Alternative
Known Archaeological Sites	0	0	1
Prehistoric Sensitivity in the Limit of Disturbance			
High Sensitivity Area (acres / %)	0	29 (2.7%)	7 (3.5%)
Moderate Sensitivity Area (acres / %)	0	70 (6.4%)	10 (5.0%)
Low Sensitivity Area (acres / %)	0	259 (23.7%)	38 (19.1%)
Slight Sensitivity Area (acres / %)	0	737 (67.2%)	144 (72.4%)
Early Historic-Period Sensitivity in the Limit of Disturbance			
High Sensitivity Area (acres / %)	0	32 (2.9%)	15 (7.5%)
Moderate Sensitivity Area (acres / %)	0	20 (1.8%)	3 (1.5%)
Low Sensitivity Area (acres / %)	0	6 (0.6%)	0 (0%)
Slight Sensitivity Area (acres / %)	0	1,037 (94.7%)	181 (91.0%)
Later Historic-Period Sensitivity in the Limit of Disturbance			
Extant Locations	0	134	80
High Sensitivity Locations	0	64	8
Moderate Sensitivity Locations	0	86	10
Low Sensitivity Locations	0	15	2

3.6 ENERGY

Initially, the No-build Alternative would require less energy consumption than the energy consumed during construction of the SDEIS Preferred Alternative. However, construction of the SDEIS Preferred Alternative would require less energy consumption during construction over the DEIS Preferred Alternative due to the significant reduction in total project length. In the long term, the energy consumption resulting from projected traffic congestion in 2040 with the No-build Alternative is likely to exceed the energy consumption associated with the SDEIS Preferred Alternative in place, and may exceed the initial energy consumption for construction.

3.7 AIR QUALITY

The No-build Alternative would not result in impacts to air quality. The regulatory framework for air quality considerations has not changed substantially since the publication of the DEIS. Refer to **Section 3.7** of the **DEIS** for a description of the regulations, relevant pollutants, and Mobile Source Air Toxics. Additional details about the air quality assessment are provided in the **SDEIS Air Quality Technical Report (AQTR)**.

3.7.1 National and State Ambient Air Quality Standards

The applicable state and federal standards have been updated since the DEIS and are shown in the **SDEIS AQTR**.

3.7.2 Affected Environment

The DNREC Division of Air Quality operates a series of monitoring stations throughout Delaware. The two closest stations that measure ozone (O_3) are Lewes and Seaford Shipley State Service Center located in Sussex County, approximately 15 and 18 miles away, respectively. The Lewes site also monitors nitrogen dioxide (NO_2). The closest carbon monoxide (CO) monitoring station in Delaware is Delaware City almost 70 miles north of the project while the closest station is Horn Point due west in Maryland, approximately 45 miles away. The SDEIS AQTR includes the ambient air pollutant levels monitored at these stations for the years 2012 through 2015, where applicable. The ambient concentrations of CO and NO_2 levels are well below the National Ambient Air Quality Standards (NAAQS) from 2012 through 2015. The ozone levels are above the NAAQS, within the range of the definition of marginal nonattainment, but show a decreasing trend. Additional details about the air quality assessment are provided in the **SDEIS AQTR**.

Air quality is regulated at the federal level under the *Clean Air Act* (CAA) and *EPA's Final Conformity Rule (40 Code of Federal Regulations (CFR) Parts 51 and 93)*. Section 107 of the 1977 CAA Amendment requires the EPA to publish a list of all geographic areas in compliance with the NAAQS, as well as those not attaining the NAAQS. Areas not in compliance with NAAQS are deemed non-attainment areas. Areas which were previously deemed non-attainment areas, but which recently achieved compliance with the NAAQS, are deemed maintenance areas. The designation of an area is based on the data collected by the state monitoring network on a pollutant-by-pollutant basis.

The Millsboro-South study area of the US 113 corridor is located in southern Sussex County, which is designated as an attainment area for all of the criteria air pollutants except for the 2008 8-hour O_3 standard, for which the area is designated marginally nonattainment.[1]

3.7.3 Environmental Consequences

As discussed in the **SDEIS AQTR**, two project-level analyses were conducted for this project:

- Intersection Analysis – An analysis was conducted to evaluate the potential for air quality impacts in the vicinity of intersections within the study area (this analysis was performed for CO).
- Construction Emissions Inventory – An emissions inventory was prepared for CO, PM_{10}, $PM_{2.5}$, sulfur dioxide (SO_2), nitrogen oxide (NO_x), and volatile organic compounds (VOC) during the period of construction[2].

CO is the only criteria pollutant whose localized effects currently require a detailed, microscale mobile source impact evaluation for roadway projects at the EIS level. Analysis of construction-period emissions is not required for transportation conformity purposes. However, for disclosure

[1] EPA, Green Book 8-Hr Ozone (2008) Nonattainment Areas/State/County Report, http://www3.epa.gov/airquality/greenbook/hnca.html#6163 and Green Book Designations, https://www3.epa.gov/airquality/greenbook/define.html#Ozone2008Classifications. A marginal nonattainment area for NAAQS 2008 8-hour ozone standard is designated as an area that has a design value of 0.076 up to but not including 0.086 parts per million (ppm).

[2] In the presence of sunlight, emissions of NOx and VOC form O_3.

purposes under the NEPA, construction emissions must be reported. Results from the Intersection Analysis indicate that concentrations of CO either remain the same or decrease with the proposed project in 2040. The maximum annual project-relative construction emissions are as follows: CO- 9.6 tons, NO_X – 5.6 tons, PM_{10} – 25.6 tons, $PM_{2.5}$ – 2.9 tons, SO_2 – less than 0.1 tons, VOD – 8.5 tons. Each analysis, and the results from the study, are presented in the **SDEIS AQTR**.

3.7.4 Mitigation

The SDEIS Preferred Alternative would not cause or contribute to a violation of the NAAQS. Emissions from construction activities would be reduced by performing construction activities in accordance with DelDOT's *Road Design Manual*[3] as well as the following best management practices:

- Reduction of exposed erodible surface area through appropriate materials and equipment staging procedures;
- Covering of exposed surface areas with pavement or vegetation in an expeditious manner;
- Reduction of equipment idling times;
- Reduction of vehicles speeds onsite;
- Ensuring contractor knowledge of appropriate fugitive dust and equipment exhaust controls;
- Soil and stock-pile stabilization via cover or periodic watering;
- Use of low- or zero-emissions equipment;
- Use of covered haul trucks during materials transportation;
- Reduction of electrical generator usage, wherever possible; and
- Suspension of construction activities during high-wind conditions.

3.8 NOISE

The No-build Alternative would not result in impacts to noise levels within the study area. The regulatory framework and existing conditions for noise have not changed substantially since the publication of the **DEIS**. Refer to **Section 3.8** of the **DEIS** for a description of the criteria for determining noise impacts, analysis procedures and methodology, measured existing conditions, and construction noise. Additional details about the noise analysis are provided in the **SDEIS Noise Technical Report (NTR).**

3.8.1 Predicted Noise Levels

FHWA requires noise to be analyzed in the "worst noise hour" of the day. The worst noise hour traffic condition represents a combination of vehicle volume, classification mix, and speed to produce the worst traffic noise condition that would be experienced along the project corridor. For

[3] Delaware Department of Transportation (DelDOT), *Road Design Manual*, July 2004 (Revisions made on December 13, 2004), http://deldot.gov/information/pubs_forms/manuals/road_design/index.shtml.

future conditions within the project area, the worst noise hour typically occurs when traffic volumes approach peak conditions along existing US 113, SR 20, and SR 24. Refer to the **SDEIS NTR** for details on the traffic analysis.

A comparison of predicted Existing, No-build and SDEIS Alternative noise level ranges is shown in **Table 3-11**. Levels that exceed the Noise Abatement Criteria (NAC) are shown in bold, blue font. The highest levels associated with the DEIS Preferred Alternative are slightly more than that of the SDEIS Alternative, 74 dBA as compared with 71 dBA (noise level ranges for the DEIS Preferred Alternative can be found in the **DEIS NTR**).

Table 3-11: Predicted Design Year Noise Levels

NSA	Area Land Use	Range of Predicted Worst-Hour Leq Exterior Noise Levels (dB(A))		
		Existing	No-Build	SDEIS
01	Single family residences at the intersection of SR 20 / Hardscrabble Road and US 113, also Bethesda Road.	56-**67**	56-**68**	56-**68**
19	Single family residences on Kerlyn Drive and North Oak Drive.	54-**68**	55-**69**	55-**69**
20	Single family residences, between Delaware Avenue and Laurel Road, on US 113, Parker Circle and SR 30.	51-**71**	52-**72**	52-**71**
21	Single family residences south of Laurel Road, on US 113, SR 30 / Laurel Road, Irons Avenue and Grace Street.	46-**67**	46-**67**	52-**68**
23	Single family residences, north of Handy Road and SR 20, on US 113, Handy Road, Route 337A, and Route 83.	56-**67**	56-**68**	56-**68**
24	Single family and multi-family residences, south of Old Landing Road, on US 113, Route 83, Sawyer Loop, 2nd Street and Ollie Lane.	54-**68**	55-**69**	55-**69**
25	Single family residences, between Old Landing Road and Washington Street, on Old Landing Road, Boulevard Avenue and Route 339B.	51-**71**	52-**72**	52-**71**
26	Atlantic Shores Rehab and Health Center, single family and multi-family residences, north of Washington Street, on US 113, Route 82A and Northern Boulevard.	46-**67**	46-**67**	52-**68**
27	Single family residences and town homes, south of Betts Pond, on US 113, Delaware Avenue, West Monroe Street, Country Place, Millstone Lane, Millers Run and Pine Lodge.	56-**67**	56-**68**	56-**68**
28	Single family residences, between Betts Pond and SR 24 Connector, on US 113, Betts Pond Road, Heritage Lane and Lakeside Lane.	54-**68**	55-**69**	55-**69**
29	Single family residences near the eastern portion of SR 24 Connector, on SR 30, John Williams Highway, Horseshoe Drive, Jersey Road and Walt Carmean Lane.	51-**71**	52-**72**	52-**71**

3.8.2 Impact Assessment/Abatement

3.8.2.1 Impact Assessment

Fifty-four properties are predicted to have noise impacts under the SDEIS Preferred Alternative, as shown in **Table 3-12**, as compared with 100 noise impacts under the DEIS Preferred Alternative. The SDEIS Preferred Alternative Build condition impacts include noise levels that exceed the NAC for Category B residential land uses, as well as impacts caused by a substantial increase in noise levels (defined as an increase of 12 dB(A) or greater than existing levels). One Category B noise impact is predicted in Noise Sensitive Area (NSA) 29 due to a substantial increase of 12 dB(A) or greater, even though the predicted Build noise level is less than 66 dB(A).

3.8.2.2 Mitigation Feasibility / Reasonableness Policy

Whenever traffic noise impacts are identified, mitigation is evaluated for feasibility and reasonableness (refer to **Section 3.8** of the **DEIS** for details regarding feasibility and reasonableness). The analysis takes into account the overall social, economic, and environmental effects of roadway noise. Consideration is given to exterior areas where frequent human use occurs. In addition to noise barriers, other noise abatement measures such as traffic management, alteration of roadway horizontal and vertical alignments, or acquisition of property for buffer zones are considered as well.

Table 3-12: Summary of Noise Modeling Results

NSA	Number of Properties with Existing Sound Levels at NAC or Higher	Number of Properties with No-Build Sound Levels at NAC or Higher	Number of Properties with Build Sound Levels at 66 dBA or Higher or Experiencing a 12 dBA or Greater Increase
01	1	2	2
19	1	1	1
20	7	7	7
21	9	9	9
23	1	2	2
24	1	1	1
25	0	0	0
26	4	4	4
27	20	22	22
28	5	7	4
29	1	3	2
Total	**50**	**58**	**54**

3.8.2.3 Mitigation Feasibility / Reasonableness Determination

Mitigation must be both feasible and reasonable in order to be implemented. The first step in the determination process is to assess feasibility. Feasibility issues for each NSA are as follows:

- NSA 01 – fewer than three impacted receptors in a common noise environment.
- NSA 19 – fewer than three impacted receptors in a common noise environment.
- NSA 20 – mitigation would eliminate access of US 113 to residences.
- NSA 21 – mitigation would eliminate access of US 113 to residences.
- NSA 23 – fewer than three impacted receptors in a common noise environment.
- NSA 24 – fewer than three impacted receptors in a common noise environment.
- NSA 25 – no impacts, therefore mitigation is not warranted.
- NSA 26 – mitigation would eliminate access of US 113 to residences and health center.
- NSA 27 – mitigation would eliminate access of US 113 to first-row impacted single-family residences; mitigation for second-row impacted single family and town homes would eliminate access of US 113 for first-row commercial properties.

- NSA 28 – mitigation would eliminate access of US 113 to residences.
- NSA 29 – fewer than three impacted receptors in a common noise environment.

In conclusion, mitigation was determined to be not feasible for any NSA. Since mitigation is not feasible, no further assessment of potential reasonableness is analyzed, and no mitigation is proposed.

3.8.5.4 Other Considerations

Undeveloped Land

Undeveloped land falls under activity Category G in 23 CFR Part 772 Noise Abatement Criteria. This category applies to all lands that are undeveloped and do not have any development plans which have been issued bona-fide building permits by the effective date of public knowledge of the project. No mitigation is considered for this land use category, but predicted noise levels, conveyed as distances from the edge of roadway to reach impact criteria for various land uses, are provided for local planning officials to consider when permitting future development. Areas identified for planned or proposed development are shown on the alignment sheets in **Appendix A**.

Three Category G areas were identified with potential for future development. These areas are along the SR 24 Connector, US 113 north of Hardscrabble Road, and US 113 south of Hardscrabble Road. Noise levels were assessed using predicted build traffic data specific to these links, with modeled noise receptors at the same elevations as the roadways to depict worst-case noise propagation. Distances from the edge of roadway to NAC levels of 66 dB(A) (Category B and C) and 71 dB(A) (Category E) are shown in **Table 3-13.**

Table 3-13: Predicted Distances to Impacts for Category G Undeveloped Land

Area	Distance to 66 dB(A)	Distance to 71 dB(A)
Adjacent to SR 24 Connector	133 feet	36
Adjacent to US 113, north of Hardscrabble Road	234 feet	95
Adjacent to US 113, south of Hardscrabble Road	167 feet	51

3.9 HAZARDOUS MATERIALS

The No-build Alternative would not be impacted by hazardous materials. Searches of both the *EPA's Envirofacts* database and the *DNREC Environmental Navigator* database were conducted in August 2009 and November of 2010 to determine the existence of regulated facilities in the study area. The databases were searched again in April 2016 for sites within 600 feet of the LOD of the SDEIS Preferred Alternative (refer to **Section 3.9** of the **DEIS** for the description of sites searched). An additional site, the Biennial Reporting System (BRS), was searched in 2016. This database contains data on generation, shipment, and receipt of hazardous waste.

3.9.1 Affected Environment

According to the *EPA's Envirofacts* database, there are two known Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS, or Superfund) sites in the study area. The first is the NCR Corporation plant on Mitchell Street in Millsboro, which is approximately 900 feet from the LOD of the SDEIS Preferred Alternative. The second Superfund site is the Millsboro TCE Site, reportedly located at 225 West DuPont Highway, which appears to be within 600 feet of the LOD of the SDEIS Preferred Alternative. There are no registered Large Quantity Generators (LQG) in the study area, and there are no facilities in the study area that are listed in the National Compliance Database (NCDB). **Figure 3-7** depicts all of the sites identified within the study area including both Superfund sites. The EPA- or DNREC-regulated facilities located within a 600-foot radius of the LOD are listed in **Table 3-14**.

The facilities with the most noteworthy EPA-regulated activities in the study area, in addition to the two Superfund sites listed above, are Delmarva Power Indian River, the former Vlasic Foods, Inc. property, and the four Mountaire Corporation facilities in the area. Delmarva Power Indian River is a coal-powered 784-megawatt electric generation facility located on the Indian River. It has reported air releases, toxic releases, discharges to water, and is a hazardous waste handler. In addition, it has been subjected to enforcement compliance. The former Vlasic Foods facility produced pickles, peppers, and relish at its plant on Iron Branch Road south of Millsboro. The plant had reported air releases, toxic releases, discharges to water, and is a hazardous waste handler. In addition, there is an underground storage tank on site. Mountaire Corporation's facilities in the study area are used for feed mill and hatchery operations, and for poultry processing. The Millsboro facility consists of almost 2,000 acres. Mountaire Corporation's facilities have reported air releases, toxic releases, and discharges to water. They also have underground and above ground storage tanks and are hazardous waste handlers.

3.9.2 Environmental Consequences

One hazardous material site is anticipated to be impacted by the SDEIS Preferred Alternative. Comparatively, eight sites would be impacted by the DEIS Preferred Alternative.

Based upon the available information, there is no evidence of environmental contamination that would render the project area unsuitable for development. Since this is a planning-level study, extensive investigations of individual contamination sites are not practical.

During the preliminary plan stages, the DelDOT Hazardous Materials (HazMAT) Section would make the determination on whether or not a Phase I hazardous materials characterization is required. If during the Phase I site characterization hazardous materials are found to exceed the DNREC and/or EPA reporting requirement limits, the DelDOT HazMAT Team would work with DNREC to document the extent of the contamination and develop a remedial action work plan to effectively limit human and environmental exposure to the contaminants during the construction of the project.

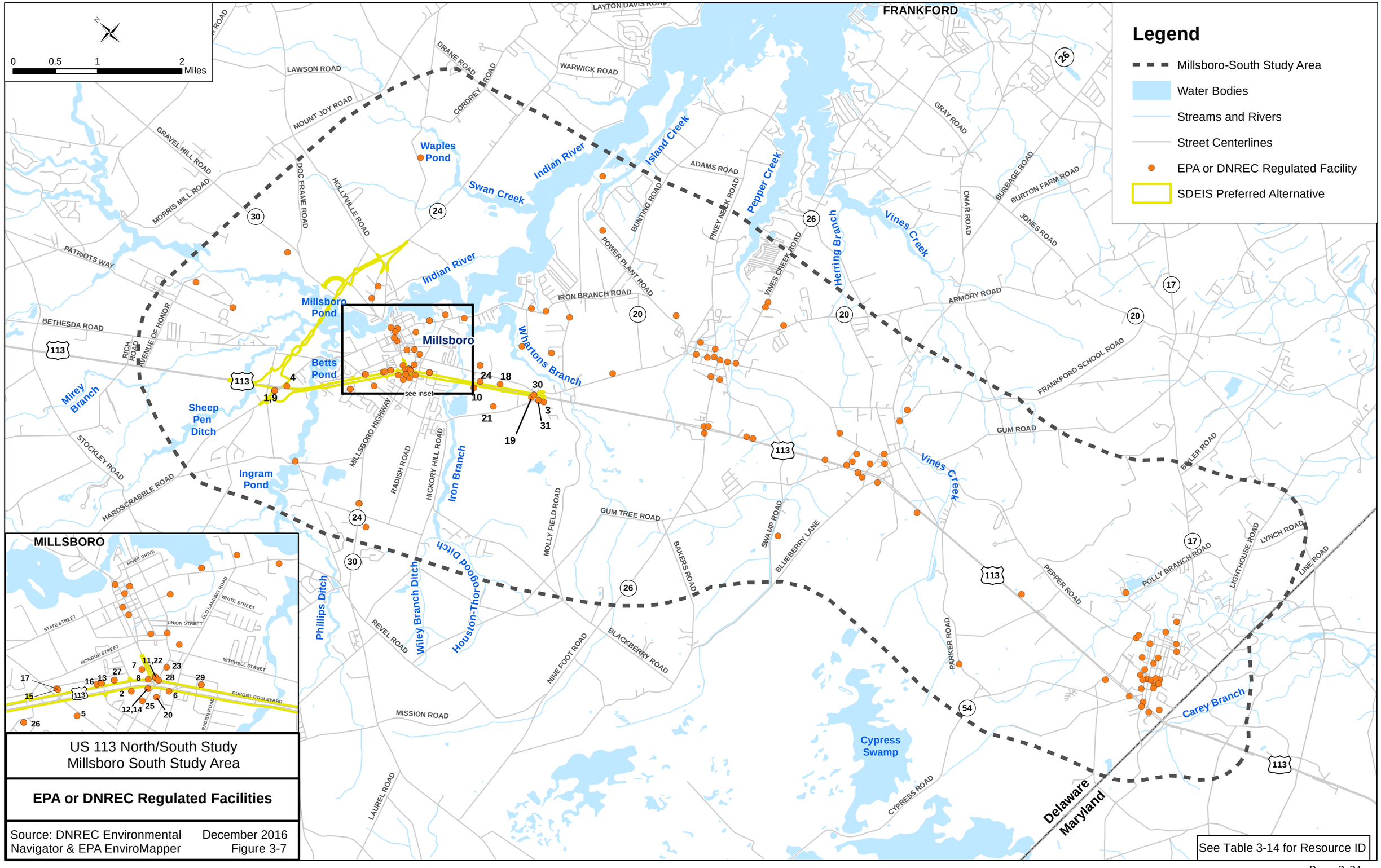

0 0.5 1 2 Miles
Legend
Millsboro-South Study Area
Water Bodies
Streams and Rivers
Street Centerlines
EPA or DNREC Regulated Facility
SDEIS Preferred Alternative
FRANKFORD
MILLSBORO
Waples Pond
Millsboro Pond
Betts Pond
Sheep Pen Ditch
Ingram Pond
Indian River
Swan Creek
Island Creek
Pepper Creek
Herring Branch
Vines Creek
Wharton Branch
Iron Branch
Phillips Ditch
Wiley Branch Ditch
Houston-Thorogood Ditch
Mirey Branch
Carey Branch
Cypress Swamp
Delaware
Maryland
LAWSON ROAD
MOUNT JOY ROAD
GRAVEL HILL ROAD
MORRIS MILL ROAD
DOC FRAME ROAD
HOLLYVILLE ROAD
DRANE ROAD
CORDREY ROAD
WARWICK ROAD
ADAMS ROAD
BUNTING ROAD
PINEY NECK ROAD
POWER PLANT ROAD
VINES CREEK ROAD
GRAY ROAD
OMAR ROAD
BURBAGE ROAD
BURTON FARM ROAD
JONES ROAD
ARMORY ROAD
FRANKFORD SCHOOL ROAD
GUM ROAD
BYLER ROAD
PATRIOTS WAY
BETHESDA ROAD
RICH ROAD
AVENUE OF HONOR
STOCKLEY ROAD
HARDSCRABBLE ROAD
IRON BRANCH ROAD
MILLSBORO HIGHWAY
RADISH ROAD
HICKORY HILL ROAD
MOLLY FIELD ROAD
GUM TREE ROAD
SWAMP ROAD
BLUEBERRY LANE
BAKERS ROAD
PEPPER ROAD
POLLY BRANCH ROAD
LIGHTHOUSE ROAD
LYNCH ROAD
LINE ROAD
PARKER ROAD
REVEL ROAD
NINE FOOT ROAD
BLACKBERRY ROAD
MISSION ROAD
LAUREL ROAD
CYPRESS ROAD
see inset
RIVER DRIVE
WHITE STREET
STATE STREET
UNION STREET
MONROE STREET
MITCHELL STREET
DUPONT BOULEVARD
D.D. LANDING ROAD
US 113 North/South Study
Millsboro South Study Area
EPA or DNREC Regulated Facilities
Source: DNREC Environmental Navigator & EPA EnviroMapper
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Figure 3-7
See Table 3-14 for Resource ID

Table 3-14: EPA or DNREC Regulated Facilities within 600 Feet of the SDEIS Preferred Alternative

Facility	Address	Regulated Activity	Figure 3-7 ID
Brasure Property	712 DuPont Boulevard	Underground Storage Tank (UST)	1
Coulbourn Property	116 West DuPont Boulevard	UST	2
Delmarva Power, Millsboro Ops	700 East DuPont Boulevard	Hazardous Waste Handler, UST, and Aboveground Storage Tanks (AST)	3
Eatons Market	712 DuPont Boulevard	UST	4
Frank Smith Nursery	200 Delaware Avenue	UST	5
General Plumbing Supply	118 East DuPont Boulevard	UST	6
Green Valley Terrace	231 South Washington Street	UST	7
Gulabs Tire Center	101 West DuPont Boulevard	UST	8
Millsboro BP #2461	28194 East DuPont Boulevard	UST and AST	9
Millsboro Ford	338 West DuPont Boulevard	Hazardous Waste Generator and UST	10
Millsboro Mobil	US 113 & SR 24	UST	11
Millsboro Shell #480	102 West DuPont Boulevard	UST	12
Millsboro TCE Site	225 North DuPont Boulevard	Superfund Site and Reported Toxic Release	13
Pep Up #18	107 East DuPont Boulevard	UST	14
Schering Plough Animal Health	369 West DuPont Boulevard	Hazardous Waste Generator and Air Emissions	15
Simmons Cable TV	305 West DuPont Boulevard	UST	16
Sterwin Laboratories	US 113 (Millsboro)	UST	17
Suburban Propane	525 DuPont Boulevard	UST	18
Uncle Ted's Trading Post	661 East DuPont Boulevard	UST	19
Wawa #837	102 East DuPont Boulevard	Hazardous Waste Generator and UST	20
Lowe's Home Improvement Store #2795	26688 Centerview Drive	Hazardous Waste Handler	21
Rite Aid #11192	28511 DuPont Boulevard	Hazardous Waste Generator and Hazardous Waste Handler	22
Shultie Residence	428 Wilson Highway	AST	23
Sussex Hydraulics Shop	110 East DuPont Boulevard	UST	24
Walla Property	113 Laurel Road	UST	25
Whaley property	2 Oak Drive	UST	26
Mid-Sussex Medical Center	214 East DuPont Blvd.	Hazardous Waste Generator	27
US 113 Fuel Stop	US 113 (Dagsboro)	AST	28
Family Dollar Stores of DE, Inc. #1399	28541 DuPont Boulevard	Hazardous Waste Handler	29
Indian River Auto Sales	635 West DuPont Boulevard	Hazardous Waste Handler	30
Shore Stop	US 113 & Route 337 (Millsboro)	Air Emissions	31

A contingency inspection and monitoring item and worker health and safety plan would be incorporated into the contract bid documents if required. All work would be undertaken in compliance with State (Hazardous Substance Cleanup Act - HSCA) and Federal (Comprehensive Environmental Recovery and Compensation Liability Act - CERCLA and Resource Conservation and Recovery Act - RCRA) laws.

3.10 NATURAL ENVIRONMENT

The natural environment has not changed substantially since the publication of the DEIS. Refer to **Section 3.10** of the **DEIS** for the description of the natural environment within the study area. Following is a comparison of the environmental consequences to the natural environment and mitigation of the SDEIS Preferred Alternative compared with the DEIS Preferred Alternative.

3.10.1 Topography, Geology, and Groundwater

The No-build Alternative would not result in impacts to topography, geology, and groundwater. The SDEIS Preferred Alternative would create 4.4 acres of new impervious surface in previously undisturbed areas, all with groundwater recharge potential classified as Excellent. This is much less than the 136.8 acres of Excellent recharge potential land that would be impacted by the DEIS Preferred Alternative. Best Management Practices (BMPs) would be utilized to minimize the impacts of new impervious surfaces.

The SDEIS Preferred Alternative would not affect wellhead protection areas, while the DEIS Preferred Alternative would have affected two wellhead protection areas. There is no mitigation for impacts to topography, geology, and groundwater.

3.10.2 Soils

The No-build Alternative would not result in impacts to soils. The SDEIS Preferred Alternative would impact both hydric and prime farmland soils. **Figure 3-8** shows that hydric soils in the study area are generally limited to the areas adjacent to wetlands, creeks, and floodplains. Since all streams crossed during construction would be bridged, hydric soil impacts are likely to be minimal. Hydric and prime farmland soil impacts by the SDEIS Preferred Alternative compared to the DEIS Preferred Alternative are shown in **Table 3-15**. Impacts to prime farmland soil would be minimized to the extent practicable, but unavoidable impacts are an irreversible and irretrievable commitment of resources. There is no mitigation for impacts to prime farmland soils.

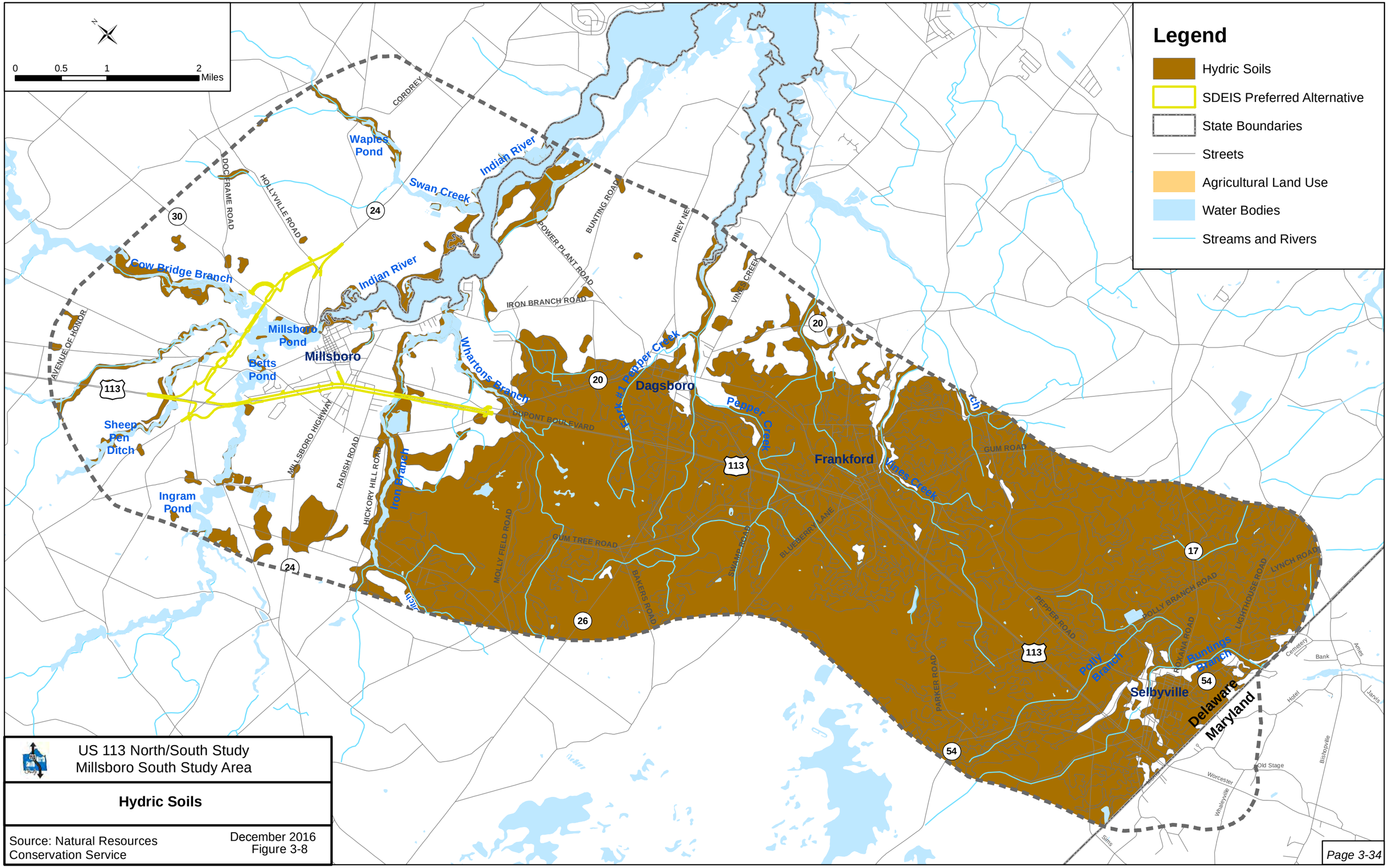
Table 3-15: Impacts to Hydric and Prime Farmland Soils

Soil Type	DEIS Preferred Alternative	SDEIS Preferred Alternative
Hydric Soils Impacted (acres)	47.2	4.2
Prime Farmland Soils Impacted (acres)	101.2	77.0

Source: Delaware Office of State Planning Coordination, 2007 & Maryland Office of Planning, 2007

3.10.3 Surface Waters and Water Quality

The No-build Alternative would not result in impacts to surface waters and water quality. The Indian River Bay drainage basin and associated watersheds (Swan Creek Indian River, Indian River Bay Indian River Inlet, Long Drain Ditch Betts Pond, and Cow Bridge Branch Indian River) would be impacted by the SDEIS Preferred Alternative (refer to **Figure 3-9**).

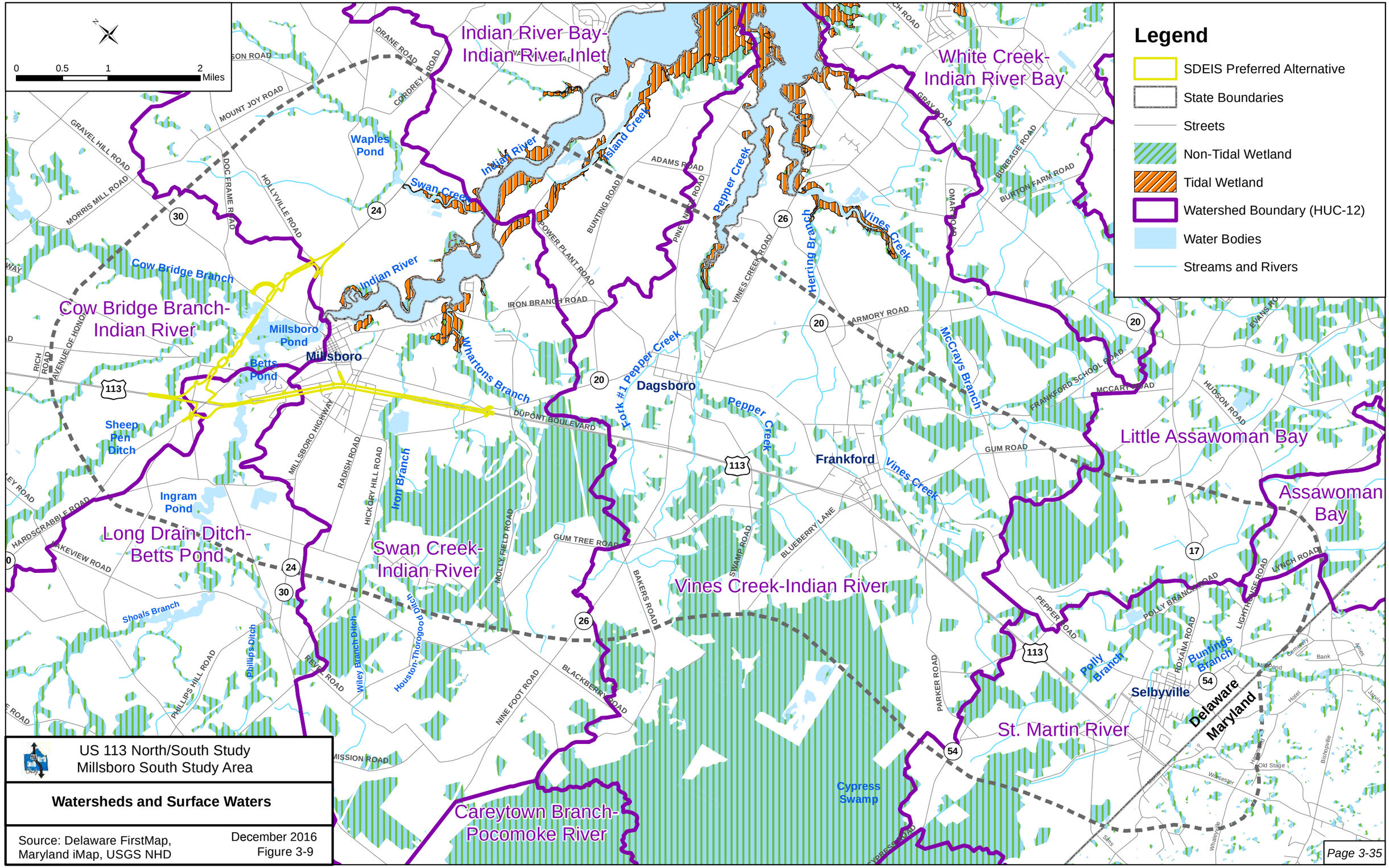


US 113 North/South Study
Millsboro South Study Area

Hydric Soils

Source: Natural Resources Conservation Service

December 2016
Figure 3-8



US 113 North/South Study
Millsboro South Study Area

Watersheds and Surface Waters

Source: Delaware FirstMap, Maryland iMap, USGS NHD

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Figure 3-9

Comparatively, the DEIS Preferred Alternative would impact both the Inland Bays and Indian River Bay and associated watersheds (St. Martin River, Assawoman Bay, Little Assawoman Bay, Vines Creek Indian River, Pepper Creek, Swan Creek Indian River, Indian River Bay Indian River Inlet, Long Drain Ditch Betts Pond, and Cow Bridge Branch Indian River).

Roadway projects can result in nonpoint source pollution. Typical pollutants from roadways include heavy metals, asbestos, and engine oils. Another chronic nonpoint pollutant is de-icing salt that is transported into surface and groundwater. Delaware's Sediment and Stormwater Regulations are intended to minimize the amount of nonpoint source pollution that reaches waterways by utilizing BMPs and other acceptable stormwater management techniques as determined at the design stage. Surface water and water quality impacts may be mitigated, if necessary, based on coordination with regulatory agencies.

3.10.4 Floodplains

The No-build Alternative would not result in floodplain impacts. Floodways within the LOD of the SDEIS Preferred Alternative would be bridged to either eliminate or reduce impacts to floodplains. Final bridge lengths would be determined following consultation with the resource agencies. The SDEIS Preferred Alternative would impact approximately 0.84 acres of floodplains whereas the DEIS Preferred Alternative would impact was projected at 39.8 acres. The SDEIS impacts include displacement due to filling, alteration of drainage patterns, water quality degradation, reduction in flood storage capacity, and effects on floral and faunal communities. Executive Order 11988, *Floodplain Management*, prohibits federal support of incompatible floodplain development unless there is no practicable alternative. Since each of the alternatives that have been studied would cross floodplains, there are no practicable alternatives that would allow total avoidance. None of the present or historic alternatives would support incompatible floodplain development.

Mitigation of impacts to floodplains would be accomplished by following the general guidelines for the design and construction of culverts and bridges listed in the National Flood Insurance Program. Additionally, the incorporation of stormwater management ponds during construction of the proposed project would meet the standards designed to reduce stormwater flows as required by the *Delaware Sediment and Stormwater Law* and the *Delaware Sediment and Stormwater Regulations.*

3.10.5 Waters of the United States, including Wetlands

The extent of the impacts of highway construction on surface waters is related to the number and nature of surface water crossings. The No-build Alternative would not result in impacts to open waters, linear features, or wetlands.

Impacts to Open Waters
One large open water resource would be impacted by the SDEIS Preferred Alternative. The two northern spurs of Millsboro Pond would be crossed by the SDEIS Preferred Alternative (refer to **Figure 3-9**). Construction of the bridge over Betts Pond would stay within the existing right of

way of US 113 and is not likely to impact the pond further. The DEIS Preferred Alternative would also impact Millsboro Pond, Indian River, Vines Creek, and Pepper Creek. Open water impacts may be mitigated, if necessary, based on function and value assessment and coordination with the regulatory agencies.

Impacts to Linear Features

Table 3-16 shows the named surface waters that the SDEIS Preferred Alternative crosses and the total linear feet of impacts. Impacts to streams, linear subaqueous lands, and tax ditches are often to the same resource, and therefore should not be summed to calculate a total impact figure. The impacts reflect the project's anticipated LOD near the stream crossings. Subaqueous land impacts are based on an estimate of the State's jurisdictional subaqueous lands in the study area. To date, no jurisdictional determination (JD) has been completed.

Table 3-16: Surface Water Crossings of the SDEIS Preferred Alternative

Water Course Name	Linear Feet of Stream Impacts	Linear Feet of Subaqueous Land Impacts	Linear Feet of Tax Ditch Impacts
Sheep Pen Ditch	25	25	0
Iron Branch	40	40	0
Wharton's Branch	40	40	0
Millsboro Pond	937	937	0
TOTAL	**1,042**	**1,042**	**0**

The impact data shown in **Table 3-16** reflect the new impervious surface in or near surface water crossings for the SDEIS Preferred Alternative. The No-build Alternative would not have any direct impacts on surface waters. The SDEIS Preferred Alternative would impact a total of 1,042 linear feet of streams and 1,042 linear feet of subaqueous land. By comparison, the DEIS Preferred Alternative would impact a total of 19,246 linear feet of streams, 20,851 linear feet of subaqueous lands, and 14,842 linear feet of tax ditches. Mitigation for linear feature impacts would be coordinated with the regulatory agencies and would compensate for lost functions and values.

Impacts to Wetlands

The SDEIS Preferred Alternative would impact 0.8 acres of palustrine forested wetland, all associated with Sheep Pen Ditch in the Cow Bridge Branch-Indian River watershed (see **Figure 3-9**). These impacts would be to high-quality wetlands. There would be no impacts to medium- or low-quality wetlands. The DEIS Preferred Alternative would impact 30.8 acres of wetlands, of which 24.9 acres would be high-quality wetlands.

Refer to **Section 3.10.5** of the **DEIS** for a discussion on how wetland impacts were calculated, indirect effects potentially associated with these impacts, and impact minimization and compensation.

3.10.6 Wild and Scenic Rivers and Natural Landmarks

The No-build Alternative would not result in impacts to National Wild and Scenic Rivers or National Natural Landmarks. Additionally, there would be no impacts to National Wild and

Scenic Rivers or National Natural Landmarks as a result of this proposed project. Therefore, no mitigation is necessary.

3.10.7 Vegetation and Wildlife

The No-build Alternative would not result in impacts to vegetation or wildlife. The SDEIS Preferred Alternative would impact upland habitat as summarized in **Table 3-17** and shown on **Figure 3-10**. Given the predominance of forests and agricultural land in the study area, those were the only types of upland habitats that were considered.

Table 3-17: Impacts to Forests and Agricultural Land

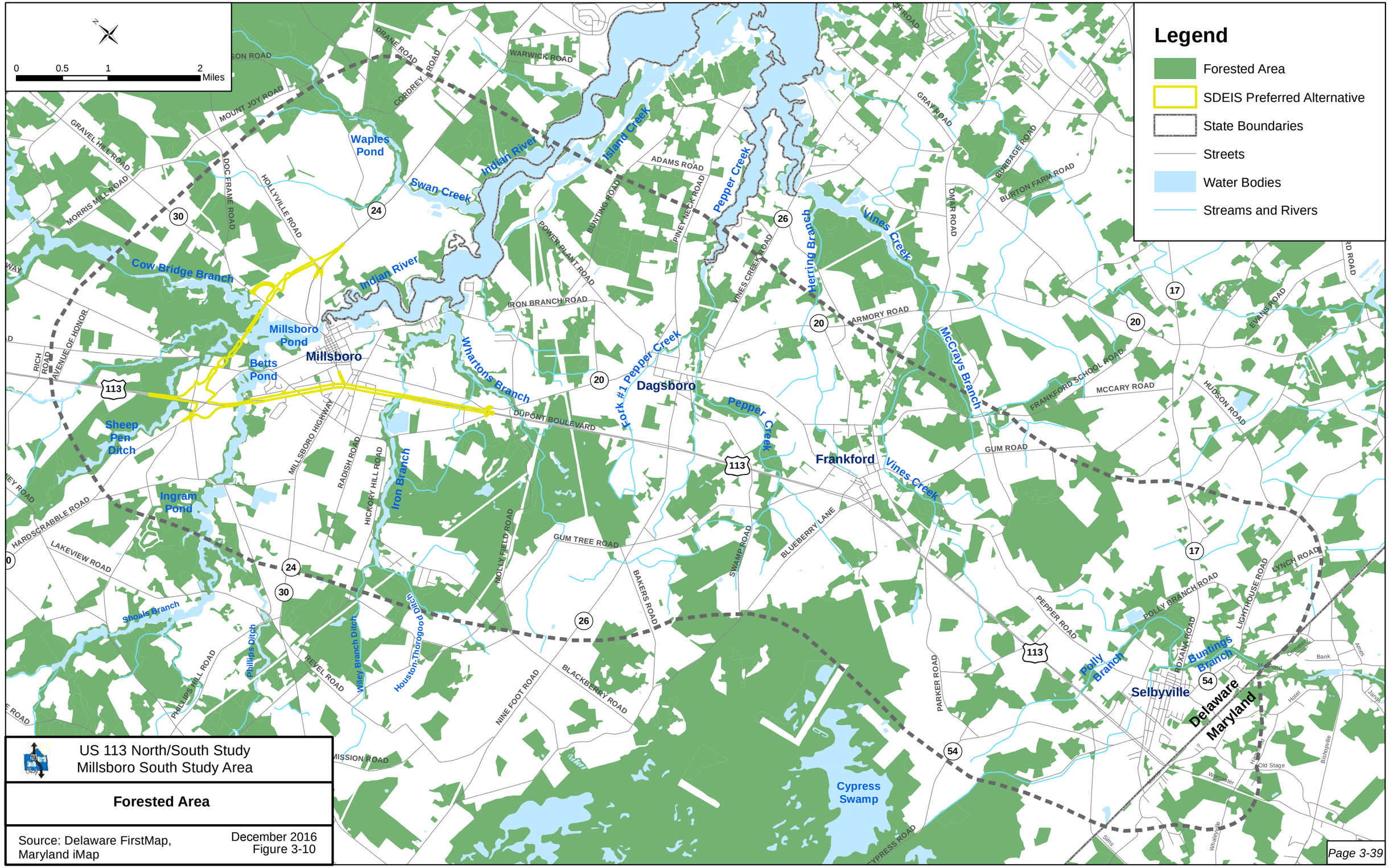
Alternative	Total Undeveloped Uplands	Agricultural Land	Upland Forest
SDEIS Preferred Alternative	82.6 acres	71.2 acres	11.4 acres
DEIS Preferred Alternative	769 acres	607 acres	162 acres

Agricultural Land
The SDEIS Preferred Alternative would impact approximately 71.2 acres of agricultural land, which is substantially less than the DEIS Preferred Alternative impact of 607 acres. Impacts may occur due to fragmentation of farmland, making it more difficult to reach some fields or requiring additional effort by farmers to conduct their operations. Compensation for impacted farmland would be provided as discussed in **Section 3.2.4**.

Forest Habitat
The SDEIS Preferred Alternative would directly impact 11.4 acres of forest land, which also is much less than the DEIS Preferred Alternative impact of 162 acres. Additional impacts to forest land include fragmentation and the subsequent increased likelihood of invasive species becoming established in forested areas. Secondary impacts to forest land could occur because the SDEIS Preferred Alternative passes through some areas with relatively large tracts of contiguous forest. However, no quantitative assessment has been conducted to determine the amount of fragmentation that would occur. In keeping with the requirements of Delaware's *Landscaping and Reforestation Act*, mitigation would be performed in accordance with **Appendix A** of DelDOT's *Road Design Manual*. See the **DEIS Natural Resources Technical Report** for more details.

State Nature Preserves
The SDEIS Preferred Alternative was conceptually located to avoid the Doe Bridge Nature Preserve (see **Figure 3-11**). Since the main alignment of the SR 24 Connector would be located at least 500 feet from the southern border of the Doe Bridge Nature Preserve, impacts would be minimized. While DelDOT is committed to on-going coordination with the Office of Nature Preserves within DNREC, the Program that enforces the legal restrictions associated with the Nature Preserve to protect this ecologically rich area, the need for permits is not anticipated.

Wildlife
Impacts to wildlife and wildlife mitigation measures would be the same as described in the **DEIS**; refer to **Section 3.10.7**.

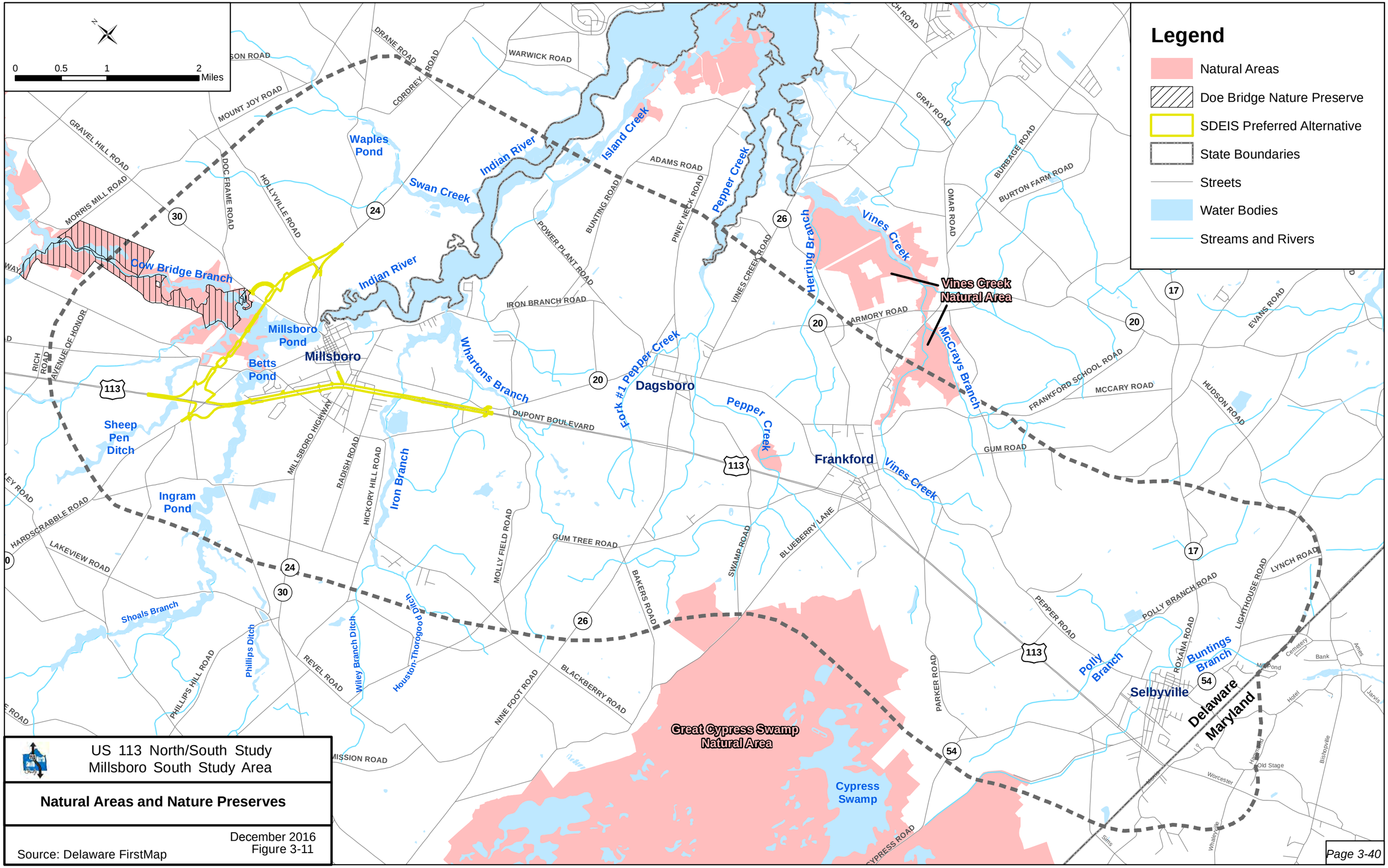


US 113 North/South Study
Millsboro South Study Area

Forested Area

Source: Delaware FirstMap, Maryland iMap

December 2016
Figure 3-10



US 113 North/South Study
Millsboro South Study Area

Natural Areas and Nature Preserves

December 2016
Figure 3-11

Source: Delaware FirstMap

Invasive Species
The Delaware Department of Agriculture (DDA) designates four plant species as noxious weeds: Canada thistle (*Cirsium arvense*), Burcucumber (*Sicyos angulatus*), giant ragweed (*Ambrosia trifica*), and Johnsongrass (*Sorghum halapense*). It is unlawful to allow noxious weed species to flower, exceed 24 inches in height, or to transport their seeds within state borders. DDA administers a Seed Law, which allows the state to sample, inspect, and analyze seed transported within its borders for noxious weed seed. Seed mixes, fertilizer, and soil conditioners must meet state seed standards and construction material brought from an outside source would need to be free of invasive plant material. When practicable, disturbed soils would be covered with native vegetation or mulch to limit the spread of invasive species. Mitigation, if necessary, would be coordinated with the regulatory agencies.

3.10.8 Rare, Threatened, and Endangered Species

The No-build Alternative would not result in Rare, threatened, and endangered (RTE) species impacts. RTE species that could potentially be impacted by the SDEIS Preferred Alternative are included in **Table 3-18**, which has been updated since the DEIS. Refer to **Section 3.10.8** of the **DEIS** for further details on the RTE species impacted by the DEIS and the description of the three Federal Species that were listed in 2013 – the Bald Eagle, Swamp Pink, and the Delmarva fox Squirrel. The main change to the Federal Species list is that the Delmarva fox squirrel was delisted in November 2015 due to recent significant recovery of the species. Several additional state species have been delisted as well. Overall, the number of potentially impacted species associated with the SDEIS Preferred Alternative (14 total) is similar to the DEIS Preferred Alternative (18 total)

Table 3-18: RTE Species Potentially Impacted by the SDEIS Preferred Alternative

Common Name	Scientific Name	Taxon	State Rank
Bald Eagle	*Haliaeetus leucocephalus*	Vertebrate Animal	very rare (breeding)
Barred Owl	*Strix varia*	Vertebrate Animal	very rare
Bayonet rush	*Juncus militaris*	Vascular Plant	rare to very rare
Blackbanded sunfish	*Enneacanthus chaetodon*	Vertebrate Animal	very rare
Cutleaf water-milfoil	*Myriophyllum pinnatum*	Vascular Plant	rare to very rare
A firefly	*Photuris frontalis*	Invertebrate Animal	extremely rare
Gray-banded zale	*Zale squamularis*	Invertebrate Animal	extremely rare
Ironcolor shiner	*Notropis chalybaeus*	Vertebrate Animal	very rare
Mud sunfish	*Acantharchus pomotis*	Vertebrate Animal	very rare
Red-shouldered Hawk	*Buteo lineatus*	Vertebrate Animal	very rare
Swamp pink	*Helonias bullata*	Vascular Plant	very rare
An underwing moth	*Catocala ulalume*	Invertebrate Animal	extremely rare
Water bulrush	*Schoenoplectus subterminalis*	Vascular Plant	rare to very rare
Yellow-throated Warbler	*Dendroica dominica*	Vertebrate Animal	very rare (breeding)

DNREC has also indicated that two unique natural communities are within the SDEIS Preferred Alternative study area: inland dune ridge woodlands and bald cypress-red maple-tupelo swamps.

Federal Species
Potential mitigation measures to reduce potential impacts to the Bald Eagle and swamp pink are provided in Section **3.10.8** of the **DEIS**. Following is a discussion of the anticipated evaluations and coordination required for each species:

Bald Eagle – As discussed in the DEIS, Bald Eagle nests have been identified within the study area in close proximity to the SDEIS Preferred Alternative. Consultation with USFWS and DNREC would be required prior to construction to determine the exact location and extent of the buffers around existing eagle nests and any further site-specific restrictions.

Swamp Pink – Although swamp pink has been located within some of the stream valleys in the study area, no occurrences were identified during the preliminary search of the DEIS Alternatives in 2013. A more detailed search for this species would be conducted along each stream and wetland crossing associated with the SDEIS Preferred Alternative prior to construction. If an occurrence of swamp pink is found, Section 7 consultation with the USFWS would be initiated.

State Species
Many of the state listed species included in **Table 3-18** as well as the unique natural communities are associated with Waters of the United States (WUS), which are protected under Section 404 of the Clean Water Act. Impacts to WUS would be avoided and minimized in the SDEIS Preferred Alternative, in turn minimizing impact to state listed species.

The project team and DNREC would meet at various points throughout the design process to discuss potential impacts to state listed species and determine potential avoidance and minimization. Additional coordination with the DNREC Division of Fish and Wildlife would occur during final to develop mitigation measures to protect state listed species and unique natural communities.

3.11 CLIMATE CHANGE

Climate change is a critical national and global concern. Human activity is changing the earth's climate by causing the buildup of heat-trapping greenhouse gas (GHG) emissions through the burning of fossil fuels and other activities. Recent guidance from the Council on Environmental Quality (CEQ) recommends that a qualitative analysis should be conducted when a quantitative analysis is not "reasonably available" (CEQ, 2016). Additionally, use of the projected GHG emissions for the alternatives evaluated, combined with the qualitative analysis helps to provide a more clear analysis. These steps provide a basis to choose the appropriate alternative and mitigation measures while still maintaining the scientific basis of the NEPA process (CEQ, 2016).

Traffic volumes on existing US 113 throughout the study area are projected to increase under the No-build Alternative resulting in increased congestion, which is associated with higher GHG emissions. The SDEIS Preferred Alternative provides an additional lane in each direction along US 113 for approximately 2.8 miles increasing the capacity and improving the traffic flow. The widening of US 113, combined with the SR 24 Connector, would reduce congestion and accommodate the 2040 design year traffic projections.

3.12 SEA LEVEL RISE

The evaluation of sea level rise change has not changed substantially since the publication of the DEIS. Refer to **Section 3.12** of the **DEIS** for the discussion of sea level rise.

3.13 PERMITS

The list of anticipated permits has not changed substantially since the publication of the DEIS. Refer to **Section 3.13** of the **DEIS** for the discussion of permits.

3.14 CONSTRUCTION IMPACTS

The No-build Alternative would not result in construction impacts. The impacts associated with construction have not changed substantially since the publication of the DEIS. Refer to **Section 3.14** of the **DEIS** for the discussion of construction impacts. Following is a discussion regarding the constructability of the SR 24 Connector.

Constructability of the SR 24 Connector

Access to properties would need to be maintained during construction of the SR 24 Connector. Many of the access points are associated with secondary roads that would be intersected by the SR 24 Connector. Some of these can be addressed by advanced contracts that would result in construction of the secondary road crossings. After the secondary road projects are completed, those properties would not be further affected with the construction of the SR 24 Connector.

Utility issues would also be associated with the secondary roads that are intersected by the SDEIS Preferred Alternative. Utility issues would be addressed in the advanced contracts and eliminated from concern during the construction of the SR 24 Connector alignment. Through the use of advanced contracts, the issue of extended periods of construction can be reduced to a selected few locations, such as the interchange at the tie-in point to existing US 113. Finally, since the SR 24 Connector would be on new alignment, the construction would include a new drainage system.

3.15 RELATIONSHIP OF LOCAL SHORT TERM USES VERSUS LONG TERM PRODUCTIVITY

The No-build Alternative would not result in impacts to the relationship of local short term uses versus long term productivity. Additionally, the relationship of local short term uses versus long term productivity has not changed substantially since the publication of the DEIS. Refer to **Section 3.15** of the **DEIS** for this discussion.

3.16 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The No-build Alternative would not result in impacts to the irreversible and irretrievable commitment of resources. The evaluation of the irreversible and irretrievable commitment of resources has not changed substantially since the publication of the DEIS. Refer to **Section 3.16** of the **DEIS** for this discussion.

3.17 SECONDARY AND CUMULATIVE EFFECTS ANALYSIS

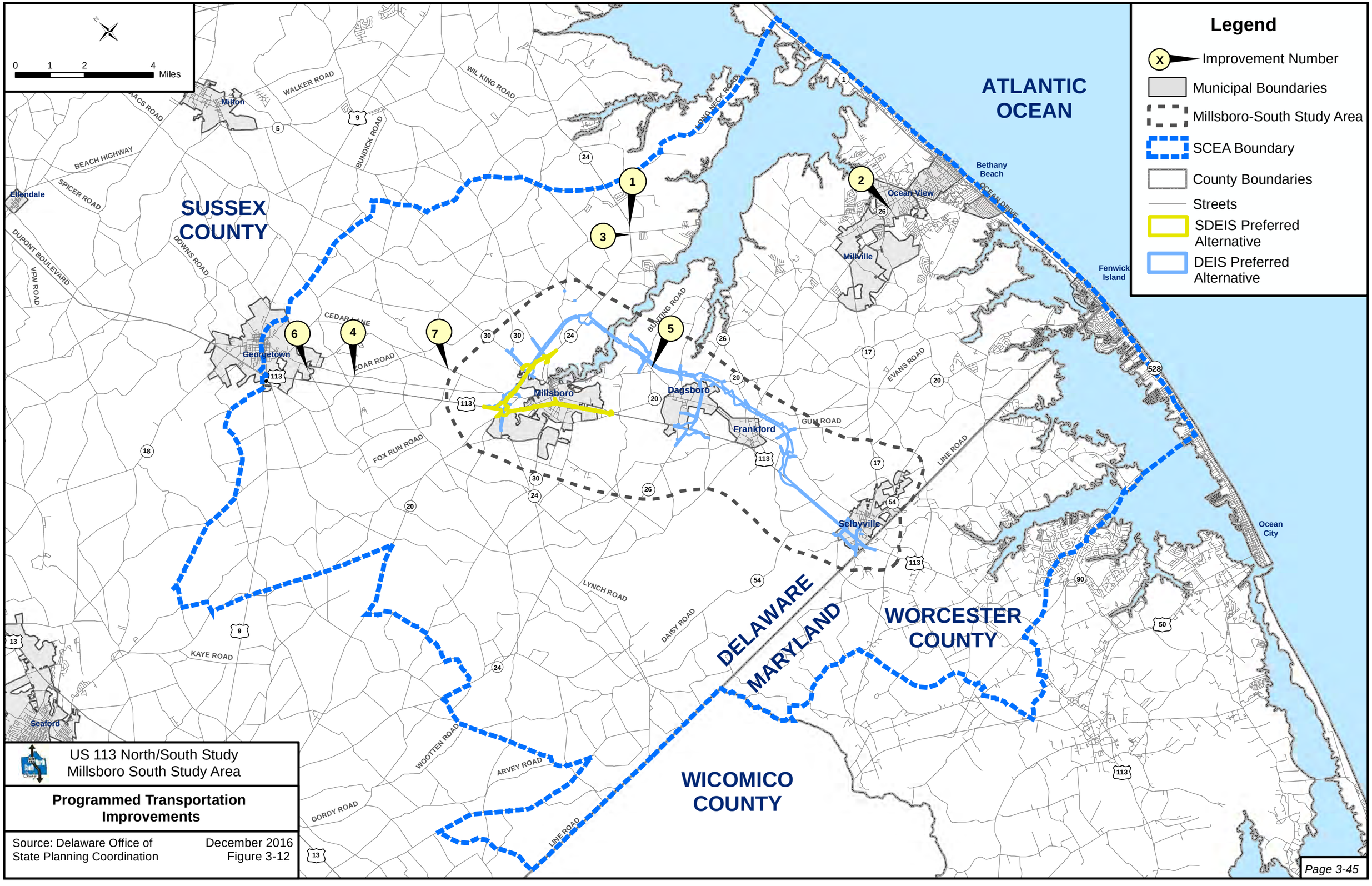
The No-build Alternative would not result in secondary or cumulative effects and thus has not been included in this analysis. The majority of the secondary and cumulative effects analysis (SCEA) area has not changed substantially since the publication of the DEIS. Refer to **Section 3.17** of the **DEIS** for a discussion of the methodology as well as the past, present, and future land use, and the analysis of secondary and cumulative effects. This section discusses the other projects within the SCEA boundary and updated conclusions of the SCEA.

3.17.1 Other Projects within the SCEA Boundary

Other projects and "reasonably foreseeable future actions" that could have an influence on the resources within the SCEA boundary have been identified in order to assess the potential for secondary (indirect) or cumulative effects.

Programmed Transportation Improvements
Planned roadway and other transportation improvements within and adjacent to the study area are included in the No-build Alternative and would be completed whether or not the SDEIS Preferred Alternative is selected. Additional projects that are programmed within the SCEA boundary are identified in Delaware's *Capital Transportation Program* for FY 2017-2022 as of the date of this report. The projects in the study area are detailed below and shown on **Figure 3-12**.

1. **SR 24 at Mount Joy Road and SR 24 at Bay Farm Road Intersection Improvements** – This project includes widening lanes/approaches, operational improvements, and extending turn lanes to meet storage requirements at the two intersections.
2. **SR 26, Atlantic Avenue from Clarksville to Assawoman Canal –** This project includes improvements to intersections and the addition of five-foot shoulders along the SR 26 corridor from Clarksville to the Assawoman Canal. Sidewalks would be reconstructed from Windmill Road (S362) to the Assawoman Canal. The intersection of SR 26 and Central Avenue would be realigned, and turn lanes would be added in each direction.
3. **SR 24 at SR 5 / SR 23 Intersection Improvements –** This project would implement access management strategies at the Shell Gas Station driveway along SR 5 with operational improvements on SR 24.
4. **Zoar Road, Speedway Road, and Bethesda Road Intersection Improvements –** This project would identify and address safety and operational issues at the intersection of Zoar Road, Speedway Road, and Bethesda Road.



US 113 North/South Study
Millsboro South Study Area

Programmed Transportation Improvements

Source: Delaware Office of State Planning Coordination

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Figure 3-12

5. **Iron Branch Road / State Street –** This project entails pavement resurfacing, curb and sidewalk reconstruction, and relocating some utility poles to eliminate or reduce the number of fixed objects in the pavement along State Street/Iron Branch Road in Millsboro.
6. **Park Avenue Relocation –** This project beings at the intersection of South Bedford Street and Arrow Safety Road relocating Park Avenue approximately 2,400 feet to the east of the current Park Avenue and South Bedford Street intersection. The segment of Arrow Safety Road between US 113 and South Bedford Street would be upgraded and signed as US Route 9 Truck Bypass Route. The intersection of Arrow Safety Road and South Bedford Street would be reconstructed to provide appropriate turn lanes and signalized.
7. **Patriots Way (S318), Avenue of Honor to Stockley Branch** – This project would construct turn lanes at the entrance of Sussex Central High School and add shoulders along this portion of Patriots Way. Improvements are needed for the additional bicycle, pedestrian and bus traffic at the new Sussex Central High School.

Proposed Development Projects
Planned development projects within the SCEA boundary have been evaluated for their secondary and cumulative effects on resources. The effects of these proposed projects on the natural and built environment may contribute to the cumulative effects of the proposed US 113 project; however, most of the impacts resulting from these projects have not yet been identified.

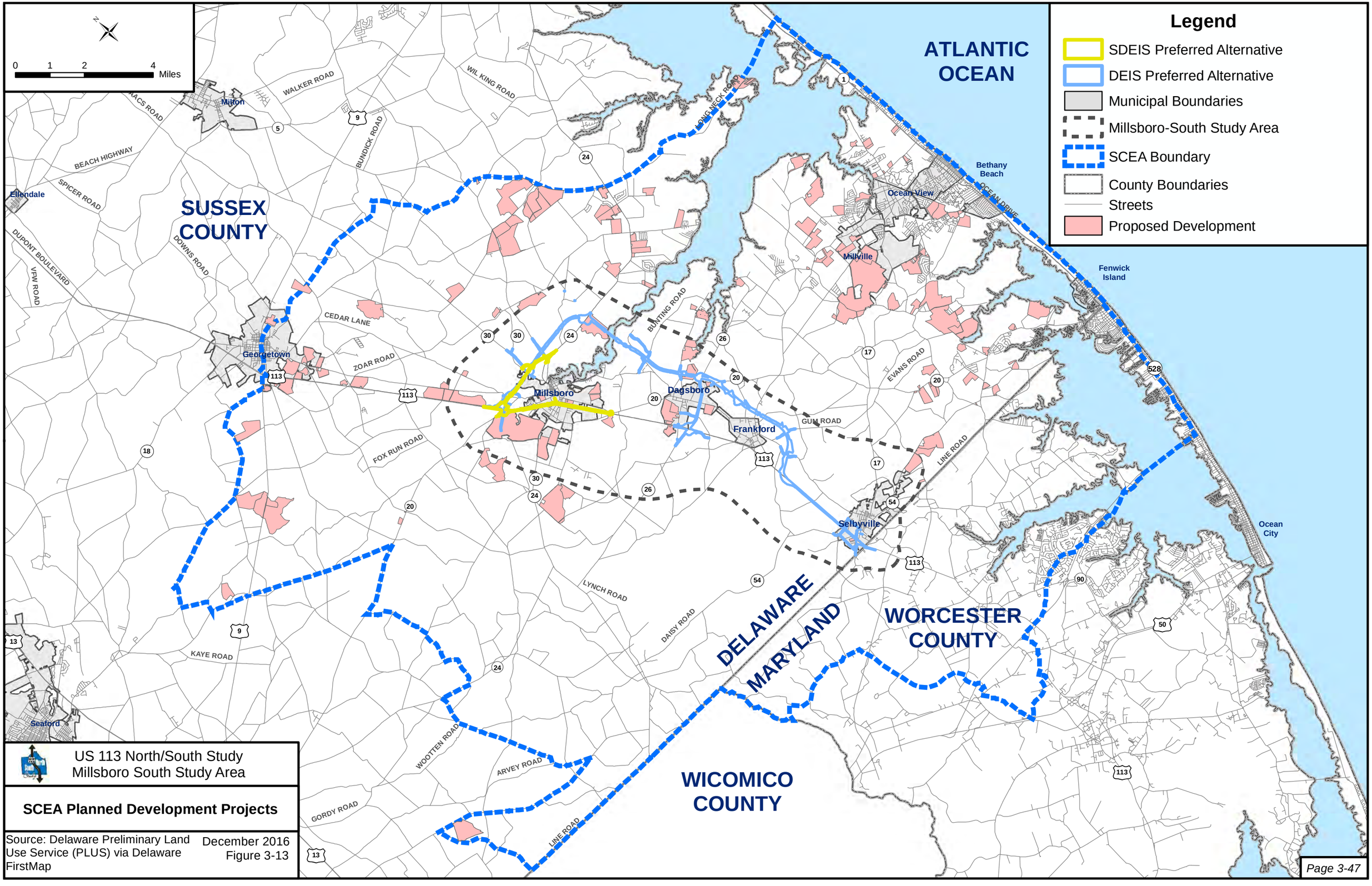
There are approximately 160 proposed development projects within the SCEA boundary according to Delaware PLUS data (refer to **Figure 3-13**). Roughly 70 percent of the proposals are residential projects, most of which are located closer to the coastline and total over 8,000 acres.

Approximately 25 percent of the proposed development involves commercial uses, either exclusively or as part of mixed-use development. Approximately 20 percent of the proposed development projects are located within the Millsboro-South study area. However, none of these projects are dependent upon the completion of the SDEIS Preferred Alternative.

3.17.2 Secondary and Cumulative Effects Analysis Conclusions

The proposed No-build Alternative would not directly impact resources in the project area; therefore, there would be no secondary and cumulative effects from the No-build Alternative.

The SDEIS Preferred Alternative would have fewer overall direct, secondary, and cumulative effects than the DEIS Preferred Alternative due to multiple factors. The new roadway alignment construction has been reduced from about 13 miles (DEIS) to less than three miles (SDEIS). This would minimize potential SCEA effects to the towns of Dagsboro and Frankford and their surrounding communities. The SDEIS preferred alternative includes two new grade separated intersections (GSIs) while the DEIS preferred alternative would have had 11 new GSIs along with six new waterway crossings, including the Indian River. The SDEIS Preferred Alternative includes a two-lane, undivided SR 24 Connector as compared to the four-lane, divided roadway proposed for the DEIS Preferred Alternative. See **Figure 2-1 and Figure 3-13** for a comparison between the two alignments for the SDEIS Preferred Alternative and the DEIS Preferred Alternative. See **Appendix A** for more details on the proposed SDEIS Preferred Alternative.


0 1 2 4 Miles
Legend
SDEIS Preferred Alternative
DEIS Preferred Alternative
Municipal Boundaries
Millsboro-South Study Area
SCEA Boundary
County Boundaries
Streets
Proposed Development
ATLANTIC OCEAN
SUSSEX COUNTY
DELAWARE
MARYLAND
WORCESTER COUNTY
WICOMICO COUNTY
Milton
Ellendale
Georgetown
Millsboro
Dagsboro
Frankford
Selbyville
Millville
Bethany Beach
Ocean View
Fenwick Island
Ocean City
Seaford
WALKER ROAD
WIL KING ROAD
BUNDICK ROAD
LONG NECK ROAD
OCEAN DRIVE
BEACH HIGHWAY
SPICER ROAD
DUPONT BOULEVARD
VFW ROAD
DOWNS ROAD
CEDAR LANE
ZOAR ROAD
FOX RUN ROAD
BUNTING ROAD
EVANS ROAD
GUM ROAD
LINE ROAD
LYNCH ROAD
DAISY ROAD
KAYE ROAD
WOOTTEN ROAD
ARVEY ROAD
GORDY ROAD
US 113 North/South Study
Millsboro South Study Area
SCEA Planned Development Projects
Source: Delaware Preliminary Land Use Service (PLUS) via Delaware FirstMap
December 2016
Figure 3-13

Based on the analysis conducted regarding potential secondary and cumulative effects, the construction of the SDEIS Preferred Alternative may induce secondary impacts and would add to the cumulative effects of other projects (past and future) on the natural and human environment within the SCEA boundary. Secondary and cumulative effect of the DEIS Preferred Alternative can also be found in **Section 3.17.4** of the **DEIS**.

Secondary effects may include changes in the location and timing or rate of planned development within the SCEA boundary. The improved transportation network may result in future zoning change requests for higher density developments in areas not currently zoned for such development. Among the effects of this proposed project, therefore, is the potential for additional development that could occur as a result of the construction of a new roadway.

Potential cumulative effects include incremental additional impacts, added to the effects of other public and private development to: socioeconomic resources; farmland; cultural resources; streams and wetlands; floodplains; water quality and aquatic habitats; rare, threatened, and endangered species; forests; and individual properties. Any additional development beyond that which is already planned, and therefore not reasonably foreseeable, could add to these cumulative impacts and increase impacts to natural and socioeconomic resources within the SCEA boundary.

Various federal and state laws have been enacted to protect the above resources. While some secondary and cumulative effects would occur, these laws should serve to lessen those effects.

4. Comments and Coordination

CHAPTER 4 – COMMENTS AND COORDINATION

DelDOT, in cooperation with FHWA, has coordinated extensively with local, state, and federal entities and has engaged in an extensive public involvement effort throughout the study process to provide information and solicit feedback. Agency and public involvement began early with stakeholder interviews, the formation of a Working Group, and a program of public outreach which included mailings to more than 8,000 addresses, radio announcements, a video, a project website, and public workshops and public hearings. The agency and public feedback received in response to these coordination efforts was used in the development of the purpose and need, alternatives, and environmental analysis and methodologies included in the DEIS and this SDEIS.

Chapter 5 of the **DEIS** described the coordination that occurred between August 2003 and July 2013. The following is a description of the coordination that occurred subsequent to the publication of the DEIS in July 2013.

4.1 Public Hearings/Workshops, Millsboro Civic Center and Selbyville Fire Hall – September 18 and 19, 2013

In September 2013, DelDOT and FHWA conducted two Public Hearings/Workshops for the US 113 North/South Study: Millsboro-South Area. The first hearing/workshop was held at the Millsboro Civic Center on September 18 and the second was held at the Selbyville Fire Hall on September 19. The purpose of the hearings/workshops was to update the public on activities that had occurred since the May 2010 workshops, review the Alternatives Retained for Detailed Study (ARDS), and obtain comments on the DEIS and the Blue Alternative (DelDOT's Recommended Preferred Alternative at that time). A total of 371 people signed in on September 18 and 221 people signed in on September 19. Sixty-seven public and private testimonies were documented during the two public hearings. A total of 135 comment forms were submitted at the hearings/workshops and during the comment period that extended to October 4, 2013. Additional comments were received online (51 comments), via email (19 comments), letters (25 comments), and voicemail (2 comments). Additionally two petitions were submitted with a total of 630 signatures. One petition opposed the Preferred Blue Alternative and offered an alternate bypass location approximately ¼ mile north of the blue route. The other petition opposed the Blue Alternative and was in support of a modified On-Alignment Alternative. DEIS comments and responses are included in **Appendix B**.

4.2 Public Workshop, Millsboro Town Center – October 14, 2015

On October 14, 2015, DelDOT held a Public Workshop at the Millsboro Town Center to update and inform area residents about the path forward for the project. Specifically, DelDOT informed the public that the previous Blue Alternative, an eastern bypass of Millsboro, Dagsboro and Frankford, was no longer being considered. Instead, DelDOT changed the focus to a Modified Yellow Alternative, which is identified as the SDEIS Preferred Alternative in this document and includes widening existing US 113 to include six lanes (three in each direction) through the town of Millsboro; modifying and/or removing several unsignalized crossovers; and providing a two-

lane connector road from US 113 to SR 24 that bypasses downtown Millsboro. A total of 327 people attended the meeting and 107 comment forms were submitted at the workshop and during the designated workshop comment period. The comments were generally in support of the SR 24 Connector and/or US 113 widening; however, there were many comments that opposed the SR 24 Connector as shown. Based on these comments, several modifications were made to the design of the SR 24 Connector.

4.3 Agency Coordination

To facilitate project development, DelDOT and the environmental agencies held frequent coordination meetings. Representatives from FHWA, US Army Corps of Engineers (USACE), US Environmental Protection Agency, SHPO, USFWS, DNREC, the Delaware Department of Agriculture, and the Delaware Office of State Planning Coordination participated in these meetings. The National Marine Fisheries Service did not participate, but was provided all the project information and data given to other agencies.

DelDOT and the Project Team met with the resource agencies six times between July 2013 and July 2016. Many of the meetings covered all four US 113 projects (Millsboro-South, Georgetown, Ellendale, and Milford). However, the following meetings focused primarily on the Millsboro-South and Georgetown projects.

- May 28, 2014
- June 4, 2014
- May 6, 2015
- December 10, 2015
- March 23, 2016
- July 27, 2016

Additionally, a Resource Agency Field View was held with representatives from DelDOT, USACE, and DNREC on May 6, 2015.

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CHAPTER 5 – LIST OF PREPARERS

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8. List of Acronyms

CHAPTER 8 – LIST OF ACRONYMS

ACS	American Community Survey
APE	Area of Potential Effect
ARDS	Alternatives Retained for Detailed Study
BMP	Best Management Practice
BRS	Biennial Reporting System
CAA	Clean Air Act
Census	US Census Bureau
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Recovery and Compensation Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
DDA	Delaware Department of Agriculture
DEIS	Draft Environmental Impact Statement
DelDOT	Delaware Department of Transportation
DNREC	Delaware Department of Natural Resources and Environmental Control
DEIS	Draft Environmental Impact Statement
EA	Environmental Assessment
EJ	Environmental Justice
EPA	Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gas
HazMAT	Hazardous Materials
HFC	Hydrofluorocarbons
HSCA	Hazardous Substance Cleanup Act
JD	Jurisdictional Determination
L_{eq}	Equivalent Sound Level

LOD	Limit of Disturbance
LOS	Level of Service
MOA	Memorandum of Agreement
NOx	Nitrous Oxide
NO_2	Nitrous Dioxide
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NCDB	National Compliance Database
NEPA	National Environmental Policy Act of 1969
NRHP	National Register of Historic Places
NSA	Noise Sensitivity Area
NTR	Noise Technical Report
O_3	Ozone
PLUS	Preliminary Land Use Service
PM	Particulate Matter
PPM	Parts Per Million
RCRA	Resource Conservation and Recovery Act of 1976
ROD	Record of Decision
RTE	Rare, Threatened, and Endangered Species
SDEIS	Supplemental Draft Environmental Impact Statement
SCEA	Secondary and Cumulative Effects Analysis
SEPTA	Southern Pennsylvania Transportation Authority
SHA	State Highway Administration
SHPO	State Historic Preservation Office
SR	State Route
US	United States
USFWS	United States Fish and Wildlife Service
VOC	Volatile Organic Compounds
WUS	Waters of the United States