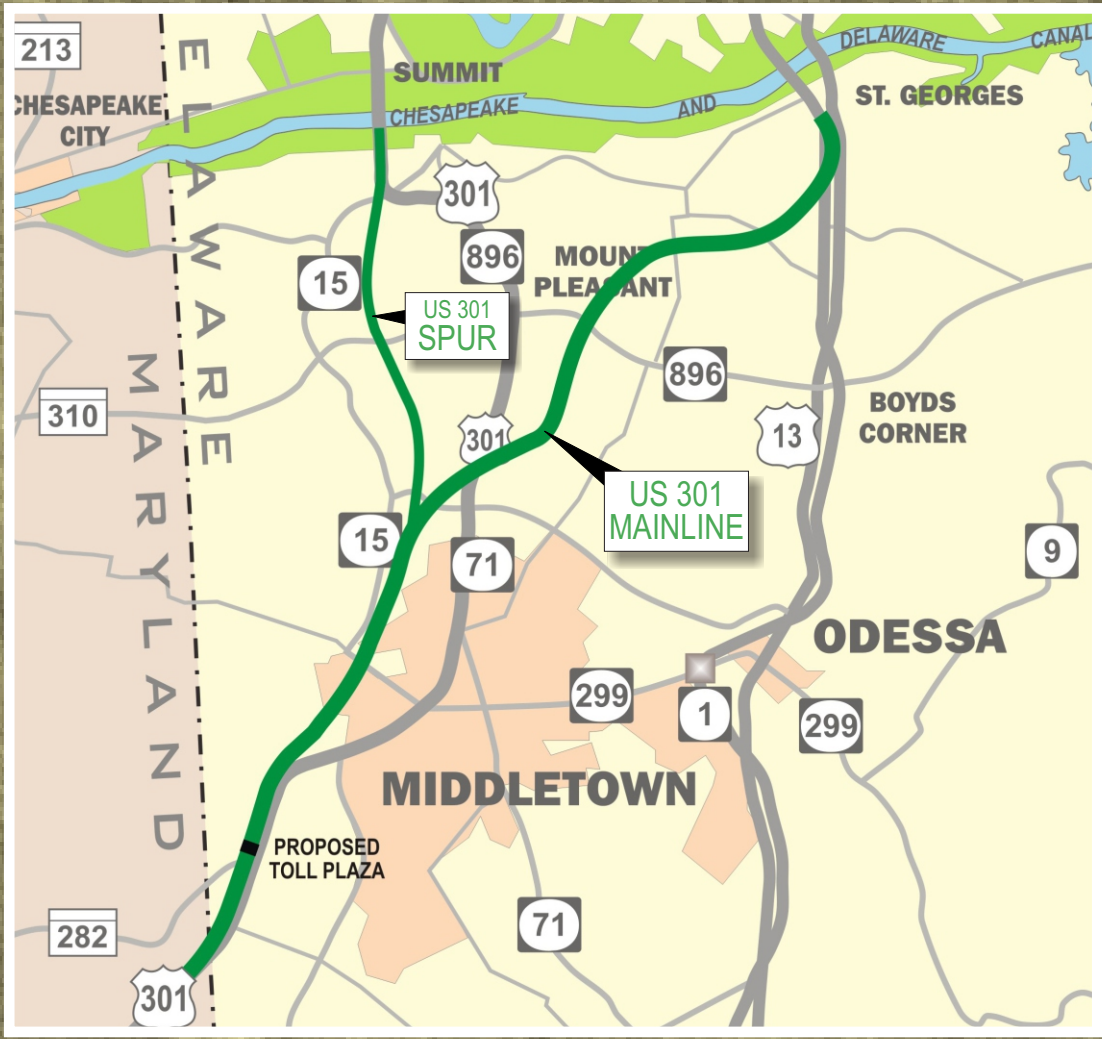
US 301 PROJECT
Maryland / Delaware Line to SR1
South of the C&D Canal
New Castle County, Delaware

US 301 SPUR ROAD
2014 MONITORING REPORT



April 2015

DELAWARE DEPARTMENT OF TRANSPORTATION

WILMAPCO

EXECUTIVE SUMMARY

The US 301 Spur Road, the subject of this traffic monitoring report, is part of Delaware Department of Transportation's (DelDOT's) US 301 Project (see Figure 1). In November 2007, after nearly four decades of study, a preferred alternative was selected, as described in the US 301 Final Environmental Impact Statement. The Federal Highway Administration subsequently approved the Record of Decision on April 30, 2008 which authorized DelDOT to begin final design on the preferred alternative, known as the "Green North + Spur" alternative. In January 2010, the 145th General Assembly of Delaware passed House Resolution No. 35 directing DelDOT to "*sit down over the next 6 weeks to develop and negotiate to final resolution a bill to amend the existing epilogue language, with such bill mandating certain trigger mechanisms for the Spur Road*." As a result of that coordination the US 301 Spur Road Monitoring Program was developed to monitor growth in traffic and land use development, and to evaluate the operational characteristics of key roads and intersections. This monitoring program will provide decision makers with data to make an informed decision on the appropriate timing for the construction of the US 301 Spur Road.

The monitoring program consists of the annual collection and analysis of daily traffic volumes on select roadways, peak period intersection volumes, vehicular delay at unsignalized intersections, crash data, and land use development data. Each year, the data will be analyzed and compared with data and results from prior years. This report represents a summary of the fifth year of the monitoring program based on data collected in 2014. This report compares the newly collected data with the data collected and summarized in 2010, 2011, 2012, 2013, and 2014, the first five years of the monitoring program. The key findings and data in the report are summarized below:

Land Development:

- There were approximately 18,000 new housing units in various stages of planning in the study area at the end of 2014. This represents no increase in overall number of new housing units being tracked, compared to 2013. As of 2014, New Castle County has approved approximately 11,740 of the 18,000 housing units, of which approximately 2,266 units (13%) had been constructed by the end of 2014. Compared to 2013, this represents just 10 more units being approved (11,740 in 2014 versus 11,730 in 2013) but a 19% increase in the number of homes constructed (2,266 units in 2014 versus 1,832 in 2013). The remaining 6,600 of the 18,000 new housing units, including approximately 230 units in Cecil County, MD, are part of developments which are still in the early planning stages (pending approval). The number of new housing units in the early planning stages remained same as 2013, partly attributable to a lack of new applications submitted as well as a shift in the number of units that had previously been planned but were subsequently approved and completed. Lastly, approximately 2,300 more housing units were proposed in developments in New Castle County for which approval had expired by the end of 2014. This respresents increase of 1,100 additional units expiring since the end of 2013, mainly attributable to the Deats Farm development expiring.

- Of the developments described above, sixteen (16) of the residential developments are located within the Town of Middletown. These 16 developments have been in various stages of development since the monitoring program began. No new developments have been added to the list since 2007. Seven (7) of these 16 developments were completed by the end of 2007, with an eighth (Middletown Village) completed by the end of 2010 and then a ninth (Willow Grove Mill) completed by the end of 2012. More recently, there were 130 new housing units completed between 2013 and 2014. The 16 developments include a total of 7,728 housing

units, including approximately 4,100 single-family detached homes, 500 duplexes, 1,900 townhouses, and 1,200 apartments / condos.

- A total of 2,179 of the proposed 7,728 housing units within the Town of Middletown were constructed by the end of 2007, 2,951 were constructed by the end of 2010, 3,008 had been constructed by the end of 2011. 3,132 of the proposed 7,728 housing units were constructed by the end of 2012 and 3,221 of the proposed 7,728 housing units were constructed by the end of 2013. Additionally, 3,351 of the proposed 7,728 housing units were constructed by the end of 2014. This represents an increase of 1,172 housing units over the six (6) year period between 2007 and 2014 and includes 130 new units completed between 2013 and 2014.
- The ongoing commercial development within the study area consists of various uses, including office space, retail, and light industrial development (including warehouse space). The commercial developments were divided into Approved and Pending (Exploratory) categories. By the end of 2014, developers had submitted plans that are currently either approved or pending for over 11.9 million square feet (SF) of non-residential space in southern New Castle County, which included a new 1.27 million SF Christiana Care Hospital Campus and 1.25 million SF Amazon.com distribution center. The distribution center was approved on January 9, 2012 and became operational on October 10, 2012. Only a small portion of the hospital campus has been built by the end of 2014. This represents a decrease of 0.4 million SF (-3%) of approved or pending commercial development, compared to 2012. The decrease appears to be attributable to some permits expiring as well as changes in previously approved permits. Physically, 11.9 million SF of non-residential space represents approximately 11 million SF of approved development (compared to 8.8 million SF in 2012) with another 0.9 million SF in pending approval (compared to 2.5 million SF in 2012). Of the 11 million SF of development approved as of 2014, at least 4.2 million SF (48%) had been constructed by the end of 2014. It should be noted that the latest land use data for New Castle County was compared to the data from 2012, since 2013 non-residential development data for New Castle County was unavailable

Traffic:

- Roadway volumes at seven (7) locations are being monitored and recorded annually.
- Five (5) signalized intersections along the existing US 301 Corridor between the Summit Bridge and SR 299 are counted and analyzed annually to monitor the change (degradation or improvement) in operation of each intersection. The following trends were observed in 2010, 2011, 2012, 2013, and 2014:
    - US 301 at Old Summit Bridge Road: The intersection operated at LOS A during both the AM and the PM peak hours in 2010, 2011, 2012, 2013 and 2014.
    - US 301 at SR 896: The intersection operated at LOS C during both the AM and the PM peak hours in 2010, 2011, 2012, 2013 and 2014.
    - US 301 at Armstrong Corner Road / Marl Pit Road: The intersection operated at LOS C during both the AM and the PM peak hours in 2010, 2012, and 2013; however, the intersection operated at LOS D during both the AM and the PM peak hours in 2011 and 2014. The increase in delay in 2014 may have been attributable to modifications to the traffic signal timing.
    - US 301 at SR 71: The intersection operated at LOS C during the AM peak hour in 2010, 2011, 2012, 2013, and 2014. The intersection operated at LOS D during the PM peak

hour in 2010, 2011, 2012, and 2013; however, the intersection operated at LOS C during the PM peak hour in 2014.

- US 301 at SR 299: The intersection operated at LOS D during the AM peak hour in 2010, 2011, 2012, and 2013; however, the intersection operated at LOS C during the AM peak hour in 2014. The intersection operated at LOS D during the PM peak hour in 2010, 2011, 2012, 2013 and 2014.

- Three (3) unsignalized intersections are counted and analyzed annually to monitor the change (degradation or improvement) in operation of each intersection and the following trends were observed in 2010, 2011, 2012, 2013 and 2014:
  - In 2014, the average control delay was 31 seconds per vehicle (LOS D) at the intersection of US 301 and Old School House Road, 44 seconds per vehicle (LOS E) at the intersection of US 301 at Keenan Auto Body and 17 seconds per vehicle (LOS C) at the intersection of Choptank Road and Clayton Manor Drive.
  - It should be noted that the delay at the intersection of Keenan Autobody increased significantly in 2011 (by 21 seconds per vehicle) to nearly a minute of delay per vehicle. This increase in delay may have been attributable to the Cedar Lane Road closure which was necessary to repair the bridge just north of the Marl Pit Road intersection. Following the completion of the bridge work, the delay decreased back to the 2010 level (37 seconds per vehicle) in 2012. The delay increased slightly in 2014 to approximately 44 seconds per vehicle.
  - The delay increased at the intersection of Choptank Road and Clayton Manor Drive in 2014 (by 6 seconds) compared to 2010 data. Lastly, there was a decrease in delay at the intersection of US 301 and Old School House Road in 2014 (by 8 seconds per vehicle) compared to 2010 data.

Highway Safety:

- Average Accident Rates were calculated for eight (8) roadway segments in the vicinity of the US301 Corridor to provide a relative measure of comparison to the Statewide and New Castle County average crash rates. According to the comparison, five (5) of the eight roadway segments being monitored had higher crash rates than the Statewide and New Castle County Average Rate in 2014.
- In general, the number of crashes decreased between 2010 and 2012 at most of the locations being monitored. Only two locations experienced an increase of crashes between 2010 and 2012. However, the number of crashes increased between 2012 and 2014 at most of the locations being monitored. The number of crashes increased between 2012 and 2014 for six of the roadway segments being monitored. This included US 301 between Summit Bridge and SR 896 (Boyds Corner Road), where the number of crashes increased from 21 to 32, US 301 between SR 896 (Boyds Corner Road) and Peterson Road, where the number of crashes increased from 42 to 56, US 301 between Peterson Road and Levels Road, where the number of crashes increased from 22 to 38, Bethel Church Road between Choptank Road and US 301, where the number of crashes increased from 3 to 4, Choptank Road between Bethel Church Road and Bunker Hill Road, where the number of crashes increased from 10 to 16, Bunker Hill Road between Choptank Road and US 301, where the number of crashes increased from 4 to 5, and SR 1 between Roth Bridge and US 13/ SR 1 Split (Tybouts Corner), where the number of crashes increased from 47 to 77.
- Roadway segments in the project area that are reported by DelDOT's Hazard Elimination Program (HEP) will be monitored each year during construction of the mainline US 301 Project.

It should be noted that High Risk rural Roads Program (HRRRP) was discontinued at the end of 2012.

Incident Management:

- DelDOT has been tracking the number of significant incidents that occur each year on several key roads in the Middletown region south of the C&D Canal, and on SR 1 between the Roth Bridge and I-95. Specifically, the monitoring program identifies any incidents that resulted in detours that could have been accommodated more safely and efficiently on the Spur Road rather than on the local road network.
- Since 2004, there have been 84 incidents that have resulted in 200 or more hours of detours that could have utilized the Spur Road as an alternate detour route.

Construction Projects:

- DelDOT and the Town of Middletown will likely have several other active maintenance and construction projects occurring at various times during the duration of the US 301 Spur Monitoring Program that could affect the traffic data being collected. DelDOT identified four (4) active construction projects in the US 301 project area in 2014. Although the SR 1 / I-95 Interchange project is not located in the vicinity of the US 301 project area, it should be mentioned due to its significant traffic impacts to SR 1 in New Castle County. As part of the monitoring program, DelDOT will continue to monitor all active roadway construction projects in the US 301 project area from south of Middletown to approximately the Chesapeake and Delaware Canal.

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INTRODUCTION

The US301 Spur Road, the subject of this traffic monitoring report, is part of Delaware Department of Transportation's (DelDOT's) US 301 Project (see Figure 1). US 301 is a 1,100 mile interstate route stretching between Sarasota, Florida and New Castle County, Delaware. The tolls and congestion on I-95 combined with the comparatively low traffic volumes on US 301, have made US 301 an attractive alternative route for vehicles, including trucks, traveling between Washington D.C. and Wilmington, Delaware. DelDOT has been studying the US 301 corridor since the 1960's. The need for improved capacity and safety has been heightened over the past two decades by the rapid pace of development throughout the Middletown-Odessa-Townsend (MOT) area and the resulting transformation of southern New Castle County from rural farmland to growing suburbia.

In November 2007, after nearly four decades of study, a preferred alternative was selected, as described in the US 301 Final Environmental Impact Statement. The Federal Highway Administration subsequently approved the Record of Decision on April 30, 2008 which authorized DelDOT to begin final design on the preferred alternative, known as the "Green North + Spur" alternative. In January 2010, the 145th General Assembly of Delaware passed House Resolution No. 35 directing DelDOT to "*sit down over the next 6 weeks to develop and negotiate to final resolution a bill to amend the existing epilogue language, with such bill mandating certain trigger mechanisms for the Spur Road*." As a result of that coordination the US 301 Spur Road Monitoring Program was developed to monitor growth in traffic and land use development, and to evaluate the operational characteristics of key roads and intersections. This monitoring program will provide decision makers with data to make an informed decision on the appropriate timing for the construction of the US 301 Spur Road.

This report represents a summary of the fifth year of the monitoring program based on data collected in 2014. This report compares the newly collected data with the data collected and summarized in 2010, 2011, 2012, 2013, and 2014 the first five years of the monitoring program. The reports for 2010, 2011, 2012, 2013, and 2014 serve as a basis for comparison with data collected in future years.

US 301 Project History

In the mid-1960's, recognition of the regional significance of the US 301 corridor led DelDOT to investigate opportunities to improve mobility in the corridor. An earlier study resulted in the location selection and subsequent construction of the existing Summit Bridge by the US Army Corps of Engineers (ACOE) in the 1950's. Since that time, southern New Castle County has been transformed from a rural and largely agricultural area to a suburban residential area for commuters employed in Newark, Wilmington, Philadelphia, and throughout the I-95 corridor in Delaware, northern Maryland, southern Pennsylvania, and Southern New Jersey. The Levels, southwest of Middletown, once known as Delaware's most productive agricultural area, is currently evolving into the Westown community of Middletown, and job growth is expanding with a full range of commercial and professional employers supporting the influx of new residents in southern New Castle County. As southern New Castle County continued to develop, the solution to improving mobility in the growing region remained elusive.

In 2004, a new phase of the US 301 project planning effort was initiated, which was focused on addressing the safety and mobility needs of the region with consideration of the findings of a prior study conducted in 2000, the *Greater Route 301 Major Investment Study.* A traffic survey conducted in October 2004 showed that approximately sixty-five percent (65%) of all northbound traffic originating south of the C&D Canal is destined for the northeast to Wilmington, Philadelphia, New Jersey, and points beyond. Thirty-Five percent (35%) of the traffic has destinations to the north towards Newark and Pennsylvania. However, the traffic survey, which asked motorists to document their actual travel routes, showed that despite the majority of northbound destinations being to the northeast, approximately sixty percent (60%) of motorists currently continue north on US 301/SR 896 and then east on I-95, rather than using a more direct east-west route south of the canal.

With careful consideration of the local and regional travel patterns, projected land use growth of the region, a wide range of other social and environmental resources, and significant public input (5 rounds of public workshops and more than 100 community meetings with concerned parties), DelDOT performed a detailed evaluation of several alternatives, including a no-build option and a variety of capacity improvement options. Those efforts resulted in the publication of a Draft Environmental Impact Statement (DEIS) and a recommended alternative in November 2006. One year later, in November 2007, after nearly four decades of study, a preferred alternative was selected, as described in the *US 301 Project Development Final Environmental Impact Statement* (FEIS). The Federal Highway Administration subsequently approved the Record of Decision on April 30, 2008 which authorized DelDOT to begin final design on the preferred alternative, known as the “Green North + Spur” alternative.

Monitoring Program

In January 2010, the 145th General Assembly of Delaware passed House Resolution No. 35 directing DelDOT to “sit down over the next 6 weeks to develop and negotiate to final resolution a bill to amend the existing epilogue language, with such bill mandating certain trigger mechanisms for the Spur Road.” As a result of that coordination the US 301 Spur Road Monitoring Program was developed to monitor growth in traffic and land use development, and to evaluate the operational characteristics of key roads and intersections. This monitoring program will provide decision makers with data to make an informed decision on the appropriate timing for the construction of the US 301 Spur Road.

The US 301 Spur Road Monitoring Program consists of three (3) primary components: an Annual Monitoring Program, Public Involvement and the publication of an Annual Summary Report.

Annual Monitoring Program

The US 301 Monitoring Program was created to monitor transportation and land use growth patterns before, during and after construction of the US 301 Mainline Project, as applicable. The monitoring program consists of the annual collection and analysis of daily traffic volumes on select roadways, peak period intersection volumes, vehicular delay at unsignalized intersections, crash data, and land use development data. Each year, the data will be analyzed and compared with data and results from prior years.

Public Involvement

Public involvement has been and continues to be an important part of the US 301 Project. For the US 301 Spur Road Monitoring Program, the annual report will be made publicly available each year on the US 301 project website at www.us301.deldot.gov. Public Involvement will also be solicited at key decision making points, such as the Secretary of Transportation's decision to recommend that construction of the US 301 Spur Road should begin.

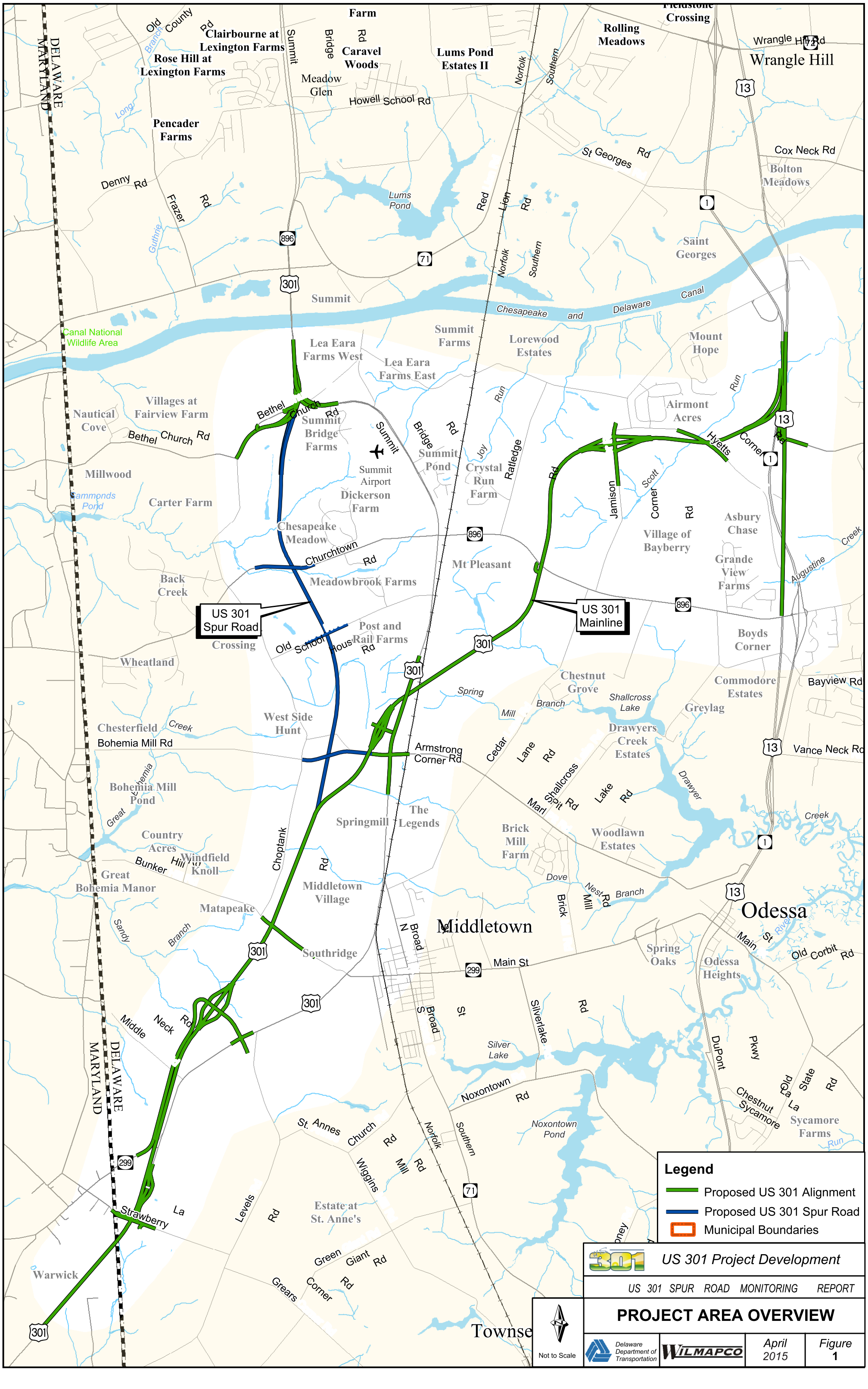
The US 301 Spur Road Monitoring Program was presented at the FY2012 – FY2015 Transportation Improvement Program (TIP) Public Workshop on February 28, 2011 at WILMAPCO, attended by DelDOT staff. The Spur Monitoring Program information was summarized on a large display board that provided an overview of the program including the goals and purpose, and details on the initial data collected on Land Development, Safety, and Traffic.

The most recent US 301 Public Workshop was held on September 6, 2011 to present updates to the US 301 Project, including the US 301 Spur Road. Information on the workshop can be found on the project web site: www.us301.deldot.gov.

A subsequent WILMAPCO Public Workshop was held on February 23, 2015. It should be noted that there was very little change in the data and findings between 2010 and 2014. Determination of public involvement in the future years of the monitoring program will be made on a year to year basis, based upon the magnitude of changes found in each area of the monitoring program.

Annual Report

This report contains a summary of the most recent data collected and analyzed as part of the US 301 Spur Road Monitoring Program. These reports will continue to be developed on an annual basis before, during and after the construction of the US 301 mainline. DelDOT will present these reports to the General Assembly in April of each year. The reports will provide decision makers, including the Secretary of Transportation, data to make an informed decision on the appropriate timing for the construction of the Spur Road.


Old County Rd
Clairbourne at Lexington Farms
Rose Hill at Lexington Farms
Summit Bridge Rd
Caravel Farm Rd
Lums Pond Estates II
Rolling Meadows
Fieldstone Crossing
Wrangle Hill Rd
Wrangle Hill
Howell School Rd
Meadow Glen
Pencader Farms
Denny Rd
Frazer Rd
Guthrie
Lums Pond
Red Lion Rd
St Georges Rd
Cox Neck Rd
Bolton Meadows
Saint Georges
Summit
Chesapeake and Delaware Canal
Canal National Wildlife Area
Lea Eara Farms West
Lea Eara Farms East
Summit Farms
Lorewood Estates
Mount Hope
Airmont Acres
Villages at Fairview Farm
Nautical Cove
Bethel Church Rd
Summit Bridge Farms
Summit Airport
Dickerson Farm
Summit Pond
Crystal Run Farm
Millwood
Sammonds Pond
Carter Farm
Chesapeake Meadow
Churchtown Rd
Meadowbrook Farms
Mt Pleasant
Village of Bayberry
Asbury Chase
Grande View Farms
Back Creek
US 301 Spur Road
US 301 Mainline
Crossing
Old School House Rd
Post and Rail Farms
Wheatland
Boyds Corner
Chestnut Grove
Commodore Estates
Bayview Rd
Spring Mill Branch
Shallcross Lake
Greylag
Chesterfield
Bohemia Mill Rd
West Side Hunt
Armstrong Corner Rd
Cedar Lane Rd
Drawyers Creek Estates
Vance Neck Rd
Bohemia Mill Pond
Great Bohemia Creek
Springmill
The Legends
Brick Mill Farm
Woodlawn Estates
Country Acres
Windfield Knoll
Bunker Hill Rd
Great Bohemia Manor
Choptank Rd
Middletown Village
Matapeake
Sandy Branch
Southridge
Middletown
Dove Nest Branch
Brick Mill
Odessa
Spring Oaks
Odessa Heights
Main St
Old Corbit Rd
Middle Neck Rd
Silver Lake
Noxontown Rd
Noxontown Pond
Chestnut Sycamore
Old State La
Sycamore Farms
St. Annes Church Rd
Wiggins Mill Rd
Levels Rd
Estate at St. Anne's
Strawberry La
Green Giant Grears Corner Rd
Warwick
Townsend
DELAWARE
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Proposed US 301 Alignment
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Municipal Boundaries
US 301 Project Development
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Delaware Department of Transportation
WILMAPCO
April 2015
Figure 1

MONITORING PROGRAM

Land Development

The explosive growth in housing and retail in southern New Castle County over the past 10 to 15 years has led to increasing congestion on the local road network, including US 301, SR 299, and SR 896. A number of new residential and retail developments have been completed and many others are in varying stages of construction or planning. As these other planned developments come on line, additional demands will be placed on the transportation infrastructure in the Middletown area.

Development activity in New Castle County is monitored by the New Castle County Department of Land Use, the Wilmington Area Planning Council (WILMAPCO), and DelDOT. Development activity in Middletown is monitored by the Town of Middletown, WILMAPCO, and DelDOT. WILMAPCO is also tasked with developing short and long-term land-use projections for New Castle County. These projections are constrained on a statewide and countywide basis by the population and employment forecasts provided by the Delaware Population Consortium. WILMAPCO is responsible for projecting how much of that growth will occur in different parts of the county. The primary geographic unit for these projections is the Traffic Analysis Zone (TAZ).

DelDOT and WILMAPCO have committed to tracking the land development activities in a portion of southern New Castle County and an adjoining portion of Cecil County, Maryland as part of this Monitoring Report. The specific area where development will be tracked annually is depicted in Figure 2. This area represents a total of 34 TAZs in Southern New Castle County and two (2) TAZs in Cecil County, Maryland. Development activity will be monitored in these areas for the length of the project to determine when the surrounding roadway infrastructure may need to be improved based on past, present and near-term development trends.

Summary of Development Activity in Southern New Castle (DE) and Cecil (MD) Counties

WILMAPCO took the lead in coordinating with the various jurisdictions and compiling the land use data for this report. The data in the following sections represents a cumulative total of development since the point when this Spur Monitoring Program commenced. In 2014, a total of seventy (70) ongoing commercial and residential developments were in various stages of the planning or building process within the study areas of southern New Castle and Cecil Counties. Fifty-eight (58) of these developments are located in southern New Castle County and twelve (12) developments are located in Cecil County, Maryland. For each development, a description of the development proposal, the current status of the development in the planning process, and what portions (if any) were constructed by the end of 2014 were provided. A full list of the developments can be found in Appendix A. The residential developments range from small subdivision developments with less than 10 homes to major developments with over 1,800 household units planned. The proposed commercial developments range from smaller properties with 5,000 to 25,000 SF to the major commercial centers, such as the 1.7 million SF Scott Run Business Park and recently completed 1.25 million SF Amazon.com Fulfillment Center. A number of proposals call for mixed-use development, combining residential and commercial activities at one site.

Residential Development Summary

The ongoing residential development within the study area consists of a variety of housing types, including single-family detached dwellings, townhomes, and apartments. The various residential developments were classified in differing stages of completion: Built, Approved but Unbuilt, or Pending (includes Exploratory and Expired Proposals). Figure 3 depicts the cumulative number of housing units built, approved but unbuilt, and pending at the end of 2010, 2011, 2012, 2013 and 2014.

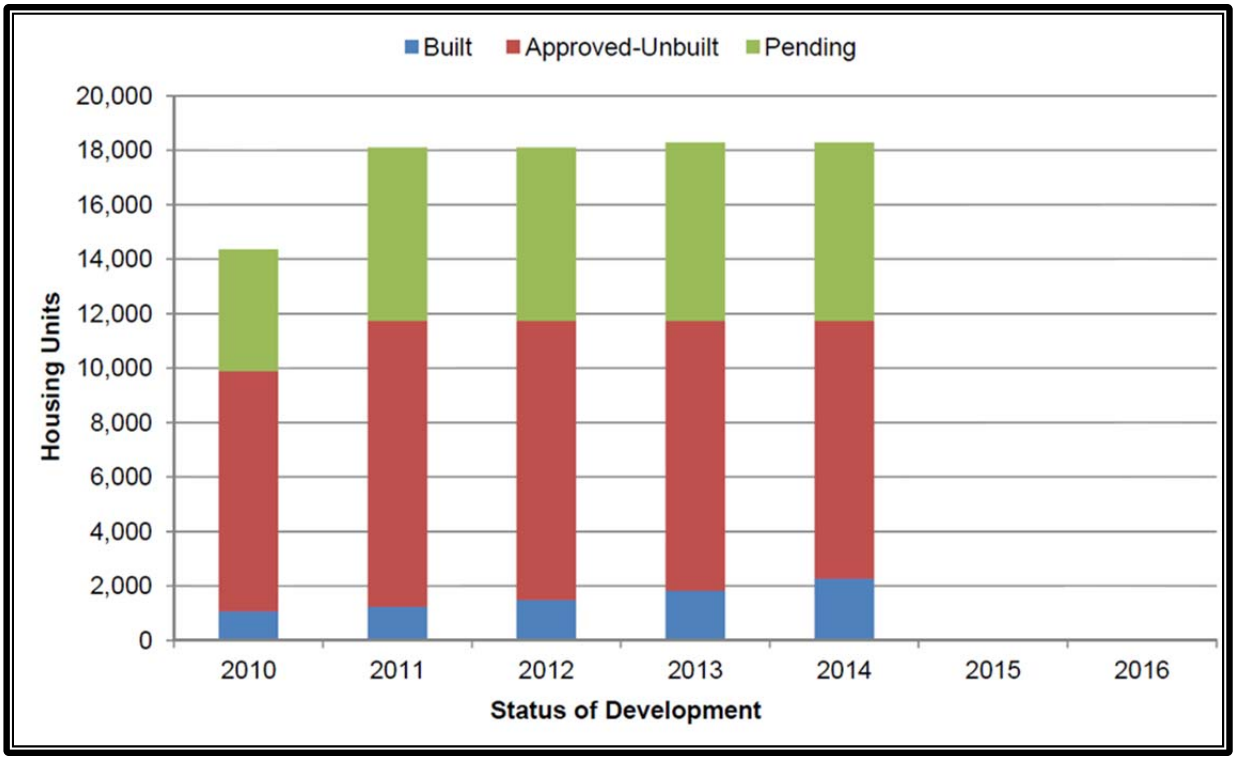
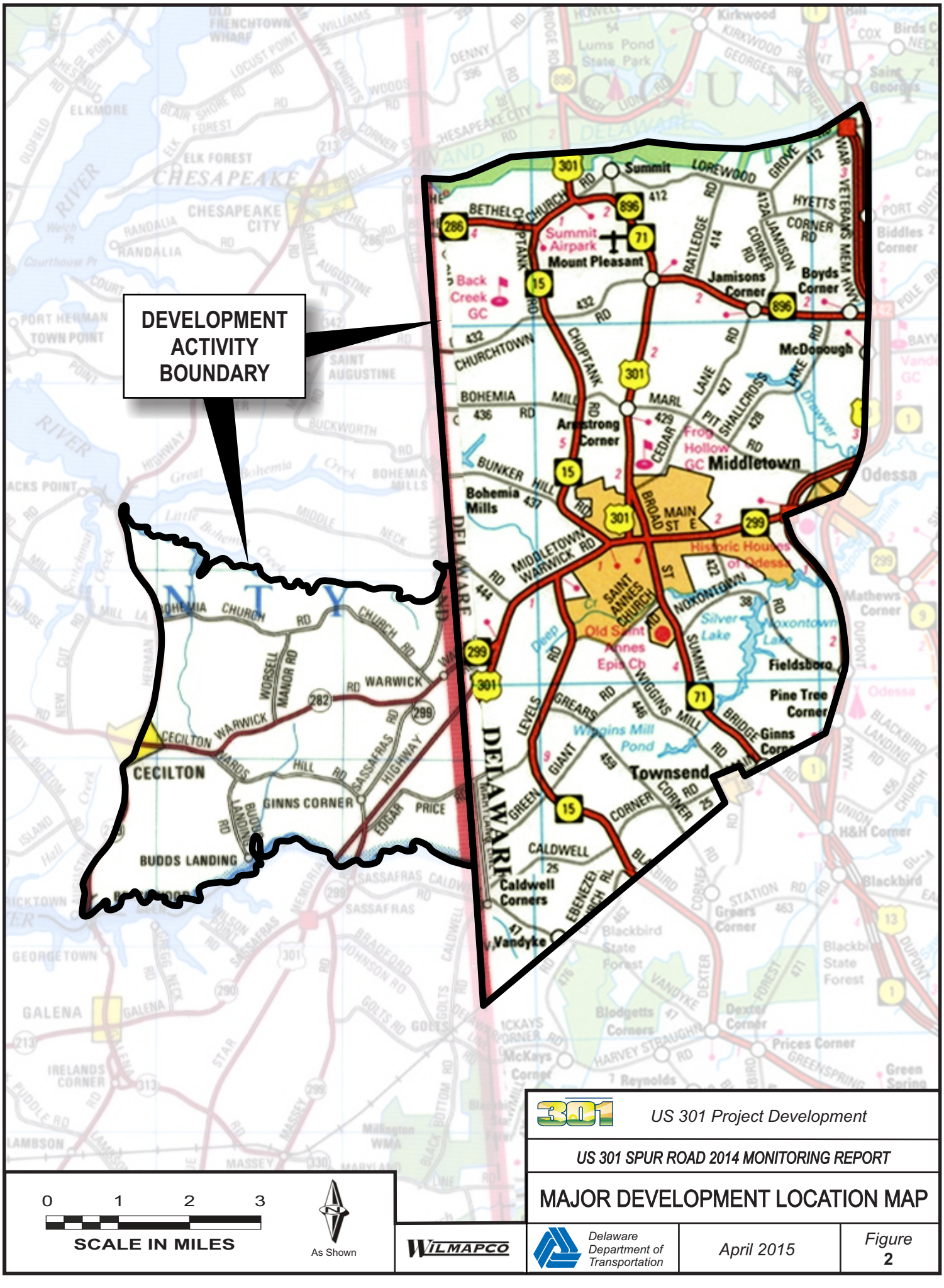


Figure 3: Residential Development in Study Area

As shown in Figure 3, there were approximately 18,000 new housing units in various stages of planning in the study area at the end of 2014. This represents no increase in overall number of new housing units being tracked, compared to 2013. As of 2014, New Castle County has approved approximately 11,740 of the 18,000 housing units, of which approximately 2,266 units (13%) had been constructed by the end of 2014. Compared to 2013, this represents just 10 more units being approved (11,740 in 2014 versus 11,730 in 2013) but a 19% increase in the number of homes constructed (2,266 units in 2014 versus 1,832 in 2013). The remaining 6,600 of the 18,000 new housing units, including approximately 230 units in Cecil County, MD, are part of developments which are still in the early planning stages (pending approval). The number of new housing units in the early planning stages remained same as 2013, partly attributable to a lack of new applications submitted as well as a shift in the number of units that had previously been planned but were subsequently approved and completed. Lastly, approximately 2,300 more housing units were proposed in developments in New Castle County for which approval had expired by the end of 2014. This respresents increase of 1,100 additional units expiring since the end of 2013, mainly attributable to the Deats Farm development expiring.



US 301 Project Development

US 301 SPUR ROAD 2014 MONITORING REPORT

MAJOR DEVELOPMENT LOCATION MAP

Wilmapco

Delaware Department of Transportation

April 2015

Figure 2

Snapshot - Residential Construction in the Town of Middletown: Of the developments described above, sixteen (16) of the residential developments are located within the Town of Middletown. These 16 developments have been in various stages of development since the monitoring program began. No new developments have been added to the list since 2007. Seven (7) of these 16 developments were completed by the end of 2007, with an eighth (Middletown Village) completed by the end of 2010 and then a ninth (Willow Grove Mill) completed by the end of 2012. More recently, there were 130 new housing units completed between 2013 and 2014. The 16 developments include a total of 7,728 housing units, including approximately 4,100 single-family detached homes, 500 duplexes, 1,900 townhouses, and 1,200 apartments / condos. WILMAPCO was able to provide data on the number of units built within each of these residential developments between 2007 and 2014:

- By the end of 2007, a total of 2,179 (28%) of the proposed 7,728 housing units within the Town of Middletown had been constructed.
- By the end of 2009, a total of 2,735 (35%) of the proposed 7,728 housing units within the Town of Middletown had been constructed.
- By the end of 2010, a total of 2,951 (38%) of the proposed 7,728 housing units within the Town of Middletown had been constructed.
- By the end of 2011, a total of 3,008 (39%) of the proposed 7,728 housing units within the Town of Middletown had been constructed.
- By the end of 2012, a total of 3,132 (41%) of the proposed 7,728 housing units within the Town of Middletown had been constructed.
- By the end of 2013, a total of 3,221 (42%) of the proposed 7,728 housing units within the Town of Middletown had been constructed.
- By the end of 2014, a total of 3,351 (43%) of the proposed 7,728 housing units within the Town of Middletown had been constructed.
- This represents an increase of 1,172 housing units over the six (6) year period between 2007 and 2014 and includes 130 new units completed between 2013 and 2014.

Appendix B respectively lists the number of apartments, duplexes, townhouses, and single family homes that have been built and remain to be built in the Town of Middletown.

Commercial (Non-Residential) Development

The ongoing commercial development within the study area consists of various uses, including office space, retail, and light industrial development (including warehouse space). The commercial developments were divided into Approved and Pending (Exploratory) categories.

By the end of 2014, developers had submitted plans that are currently either approved or pending for over 11.9 million square feet (SF) of non-residential space in southern New Castle County, which included a new 1.27 million SF Christiana Care Hospital Campus and 1.25 million SF Amazon.com distribution center. The distribution center was approved on January 9, 2012 and became operational on October 10, 2012. Only a small portion of the hospital campus has been built by the end of 2014. This represents a decrease of 0.4 million SF (-3%) of approved or pending commercial development, compared to 2012. The decrease appears to be attributable to some permits expiring as well as changes in previously approved permits. Physically, 11.9 million SF of non-residential space represents approximately 11 million SF of approved development (compared to 8.8 million SF in 2012) with another 0.9 million SF in pending approval (compared to 2.5 million SF in 2012). Of the 11 million SF of development

approved as of 2014, at least 4.2 million SF (48%) had been constructed by the end of 2014. It should be noted that the latest land use data for New Castle County was compared to the data from 2012, since 2013 non-residential development data for New Castle County was unavailable.

Currently, no non-residential developments are proposed in the two (2) TAZs in Cecil County that are included in the study area. Figure 4 depicts the cumulative approved and pending commercial development in the study area since the Spur Monitoring Program commenced.

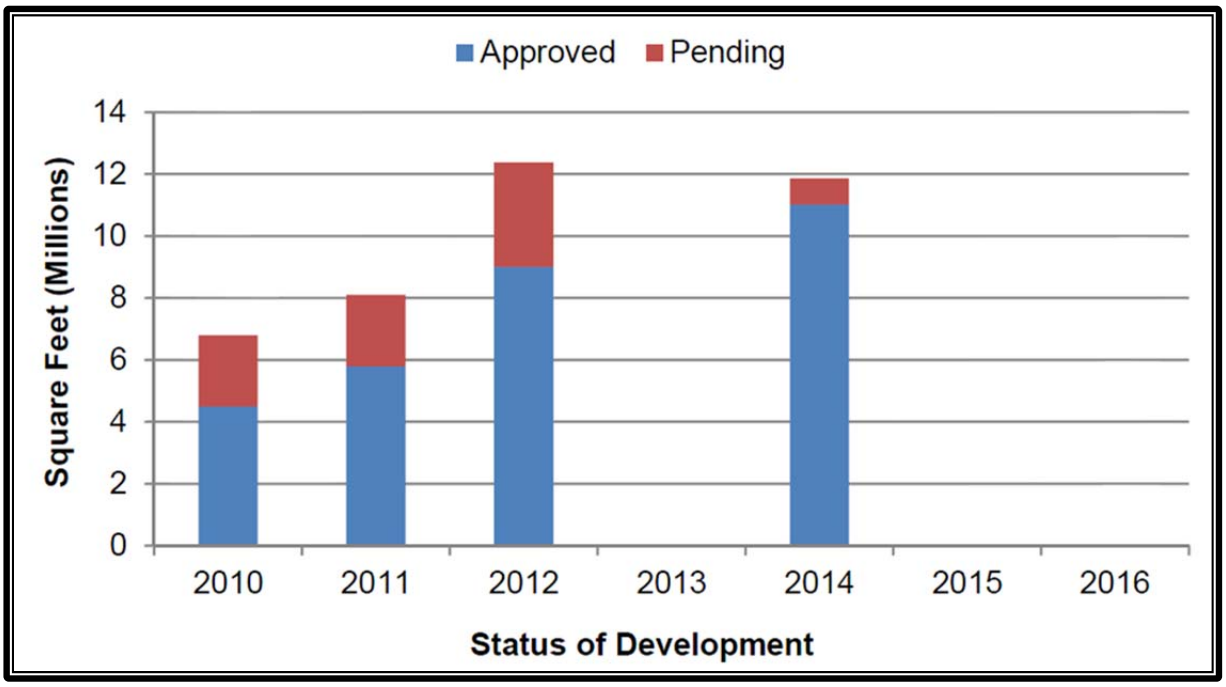


Figure 4: Non-Residential Development in Study Area

Traffic

Traffic is an important part of the US 301 Spur Road Monitoring Program. The US 301 project team will gather a variety of traffic data annually on key roads within the project corridor to determine the current level of traffic on these roads and to track growth trends throughout the region. Specifically, the following traffic data is being collected each year: mainline roadway volume counts, intersection turning movement counts, and vehicular delays at unsignalized intersections. The data collected in 2010 serves as the base year data for the US 301 Spur Road Monitoring Program. Intersection turning movement counts and mainline volume counts are being be performed at each location shown in Figure 5 every year during the construction of the new US 301 alignment from the MD/DE state line to SR 1. This annual traffic monitoring will show how traffic volumes change over time as new development continues to occur.

Roadway Volumes

Mainline volume counts were collected along six (6) key roadways within the US 301 project area during October 2010, 2011, 2012, 2013, and 2014 (see Figure 5). Automatic traffic recording equipment, commonly called "tube counters", were used to record the volume and classification of vehicles that pass over the equipment in each direction. This data is used to determine the Average Daily Traffic (ADT) and percentage of trucks travelling on each roadway segment (see Tables 1 and 2). Daily traffic volumes have increased modestly at all locations studied between 2010 and 2014. The two locations with the largest increase were Choptank Road, north of Churchtown Road (a 25% increase) and on US 13 at St. Georges Bridge (a 28% increase).

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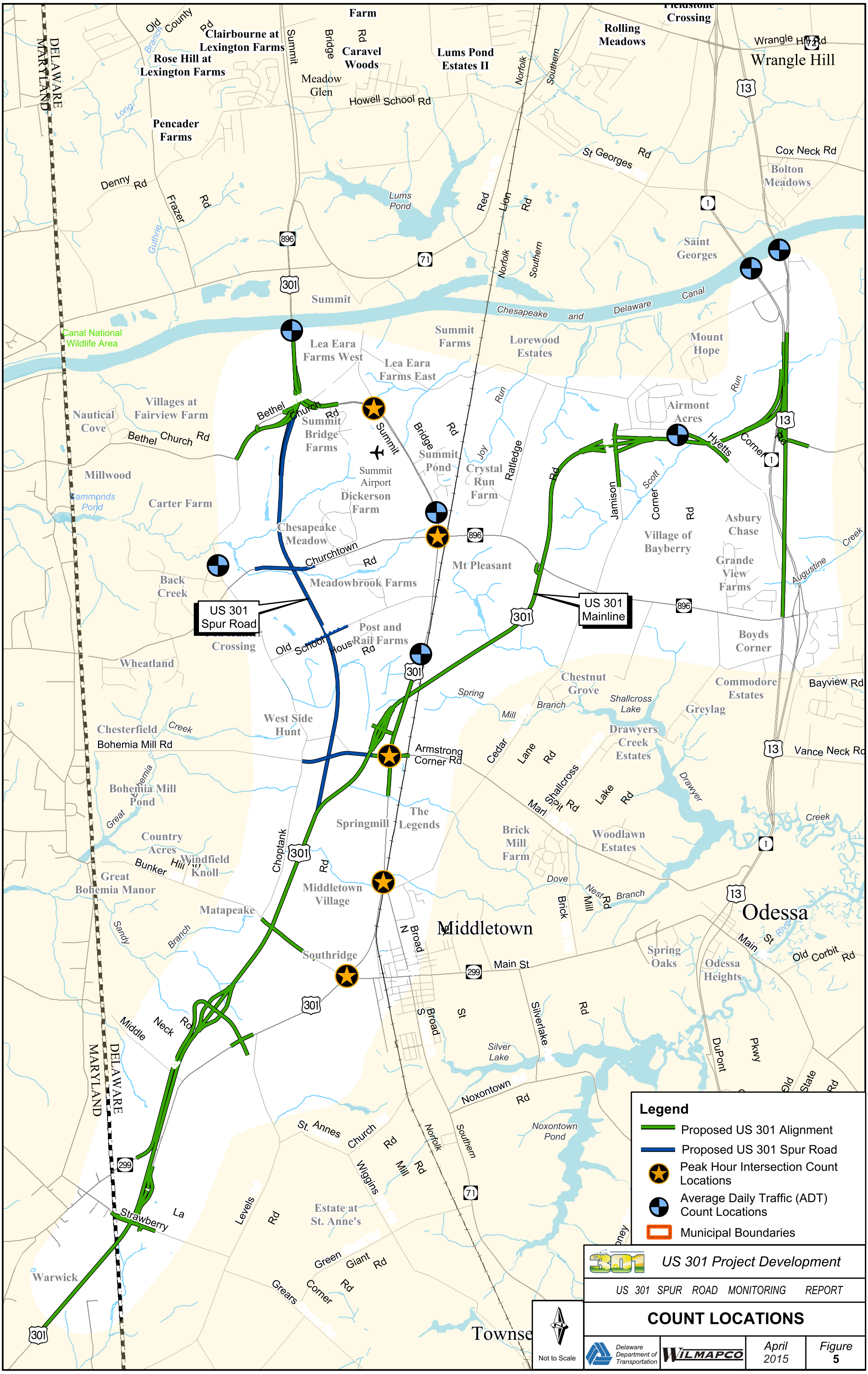
Table 1:
Average Daily Traffic for Select Roadway Segments along US 301

Roadway Link	2010 ADT*	2011 ADT	2012 ADT	2013 ADT	2014 ADT	2015 ADT	2016 ADT
Summit Bridge (US 301)	27,660	32,360	29,260	30,250	31,250		
Choptank Rd, North of Churchtown Rd	3,990	4,090	4,810	4,940	4,980		
SR 1 at Roth Bridge	73,690	78,740	74,900	76,940	77,280		
US 13 at St. Georges Bridge	10,600	9,070	12,190	12,270	13,520		
US 301/SR 896, North of Mt. Pleasant	23,450	23,810	24,760	24,980	24,490		
US 301, between Armstrong Corner Rd and Mt. Pleasant	21,830	22,460	22,710	22,360	22,860		
US 301 Bypass	-	-	-	-			

*Data was collected for a seven (7) day period in October / November 2010, 2011, 2012, 2013, and 2014. Seasonal Adjustments were not made to these volumes because: a) October/November volumes are typically representative of the annual average volumes, and b) because volumes will be collected during the same months in subsequent years.


DELAWARE
MARYLAND
Old County Rd
Clairbourne at Lexington Farms
Rose Hill at Lexington Farms
Summit Bridge Rd
Caravel Farms
Lums Pond Estates II
Rolling Meadows
Fieldstone Crossing
Wrangle Hill Rd
Wrangle Hill
Meadow Glen
Howell School Rd
Pencader Farms
Long Branch
Denny Rd
Frazer Rd
Guthrie
Lums Pond
Red Lion Rd
Norfolk Southern
St Georges Rd
Cox Neck Rd
Bolton Meadows
Saint Georges
Canal National Wildlife Area
Chesapeake and Delaware Canal
Summit
Lea Eara Farms West
Lea Eara Farms East
Summit Farms
Lorewood Estates
Mount Hope
Nautical Cove
Villages at Fairview Farm
Bethel Church Rd
Summit Bridge Farms
Summit Airport
Bridge Rd
Summit Pond
Joy Ratledge Run
Crystal Run Farm
Airmont Acres
Hyetts Corner Rd
Millwood
Sammonds Pond
Carter Farm
Dickerson Farm
Chesapeake Meadow
Churchtown Rd
Meadowbrook Farms
Mt Pleasant
Village of Bayberry
Asbury Chase
Grande View Farms
Augustine Creek
Back Creek
US 301 Spur Road
US 301 Mainline
Old School House Rd
Post and Rail Farms
Boyds Corner
Wheatland
Chestnut Grove
Commodore Estates
Bayview Rd
Spring Mill Branch
Shallcross Lake
Greylag
Chesterfield Creek
Bohemia Mill Rd
West Side Hunt
Armstrong Corner Rd
Cedar Lane Rd
Drawyers Creek Estates
Vance Neck Rd
Bohemia Mill Pond
Great Bohemia Creek
Country Acres
Windfield Knoll
Bunker Hill Rd
Shallcross Lake Rd
Drawyer Creek
Springmill
The Legends
Brick Mill Farm
Woodlawn Estates
Great Bohemia Manor
Matapeake
Middletown Village
Dove Nest Branch
Brick Mill Rd
Odessa
Sandy Branch
Southridge
Middle Neck Rd
Middletown
Main St
Spring Oaks
Odessa Heights
Old Corbit Rd
Silver Lake
Silverlake Rd
DuPont Pkwy
Noxontown Rd
Noxontown Pond
St. Annes Church Rd
Wiggins Mill Rd
Estate at St. Anne's
Levels Rd
Strawberry La
Warwick
Green Giant Rd
Grears Corner Rd
Townsend
Legend
Proposed US 301 Alignment
Proposed US 301 Spur Road
Peak Hour Intersection Count Locations
Average Daily Traffic (ADT) Count Locations
Municipal Boundaries
US 301 Project Development
US 301 SPUR ROAD MONITORING REPORT
COUNT LOCATIONS
Not to Scale
Delaware Department of Transportation
WILMAPCO
April 2015
Figure 5

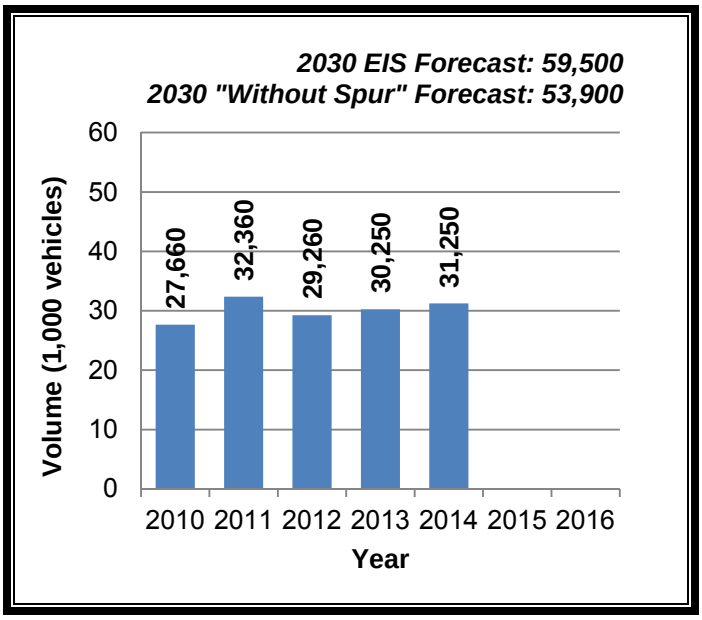


Figure 6: Average Daily Traffic (ADT) for Summit Bridge (US 301)

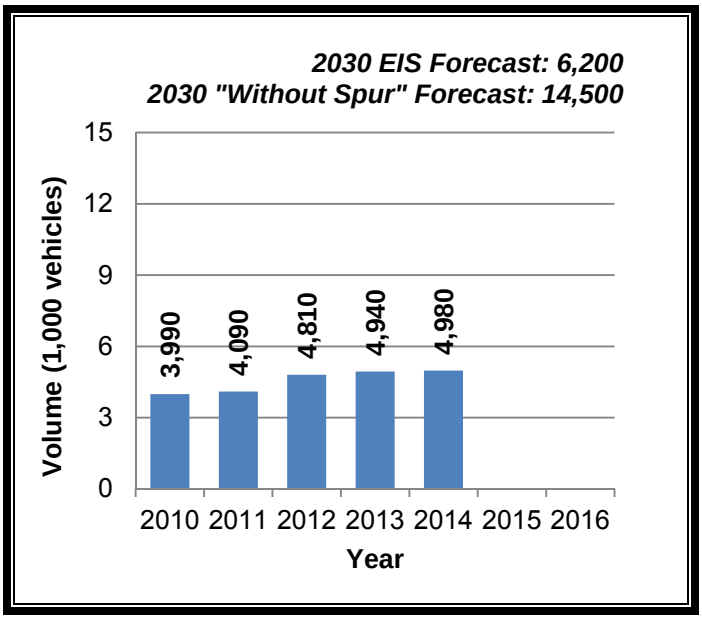


Figure 7: Average Daily Traffic (ADT) for Choptank Rd, North of Churchtown Rd

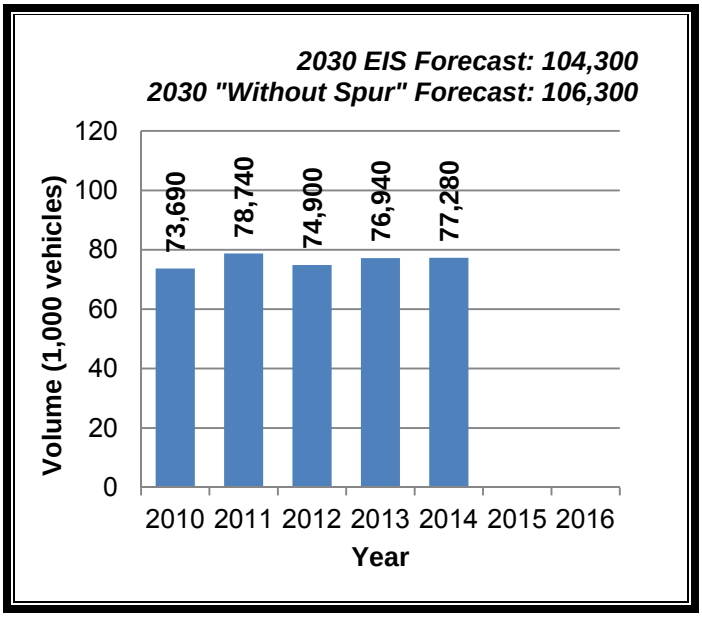


Figure 8: Average Daily Traffic (ADT) for Roth Bridge (SR 1)

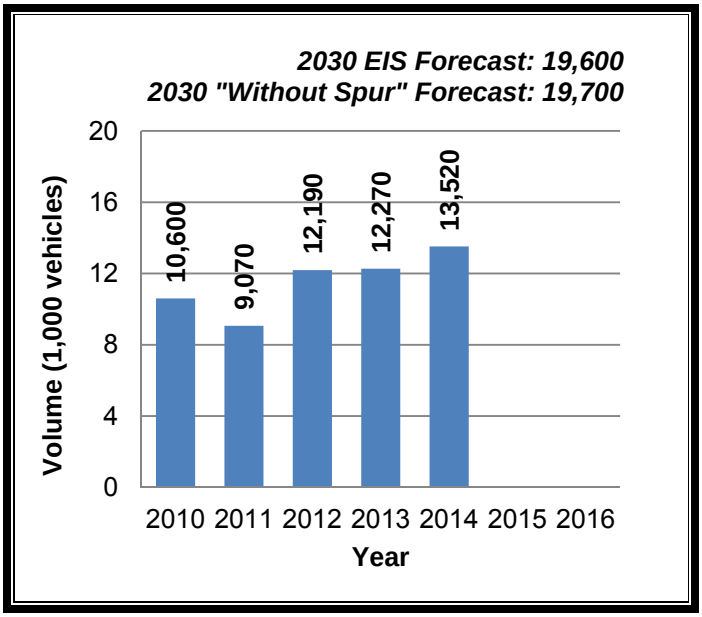


Figure 9: Average Daily Traffic (ADT) for St. George's Bridge (US 13)

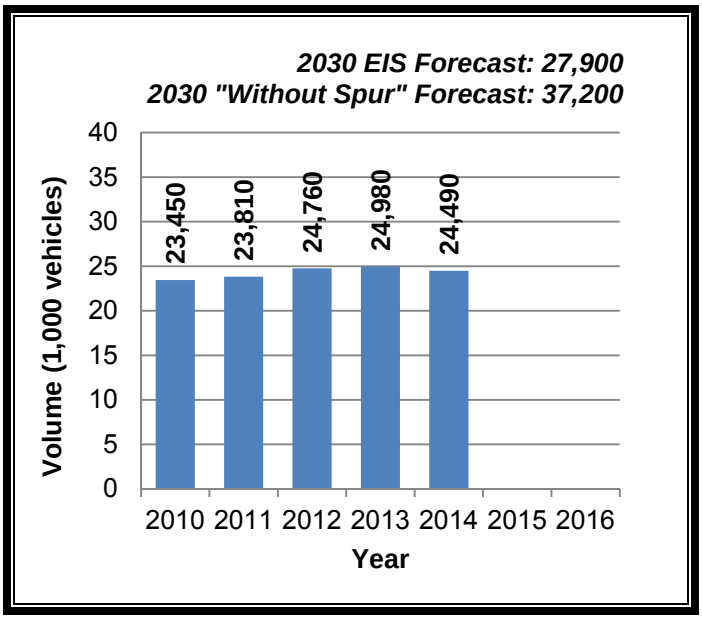


Figure 10: Average Daily Traffic (ADT) for Existing US 301 North of Mt. Pleasant

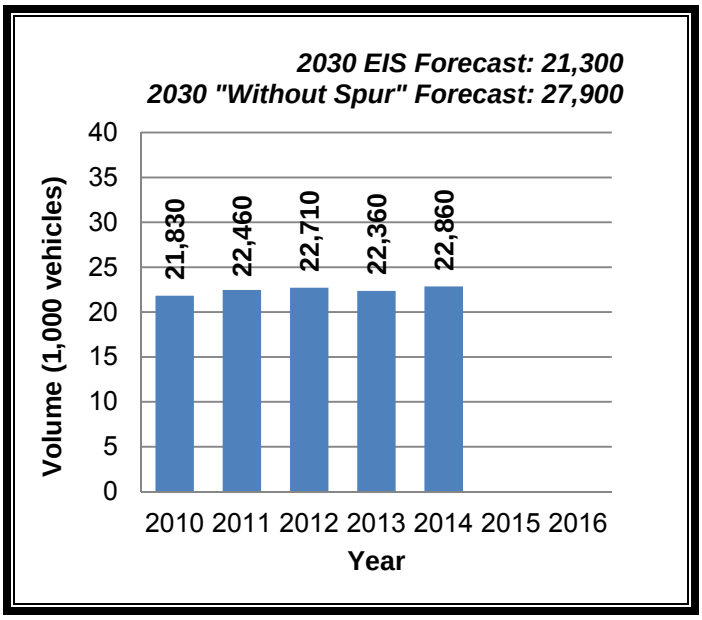


Figure 11: Average Daily Traffic (ADT) for Existing US 301 between Armstrong Corner Rd and Mt. Pleasant

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Table 2: Average Daily Truck Volume and Average Daily Truck Percentage* on Select Roadway Segments along US 301

Roadway Link	2010		2011		2012		2013		2014		2015		2016	
	Volume	% Trucks	Volume	% Trucks	Volume	% Trucks	Volume	% Trucks	Volume	% Trucks	Volume	% Trucks	Volume	% Trucks
US 301 at Summit Bridge	2,210	8	3,100	10	2,370	8	2,480	8	2,650	8				
Choptank Rd, North of Churchtown Rd	490	12	560	14	370	8	170	3	220	4				
SR 1 at Roth Bridge	7,860	11	9,020	11	7,840	11	6,620	9	8,330	11				
US 13 at St. Georges Bridge	570	5	440	5	1,165	10	585	5	680	5				
US 301 / SR 896, North of Mt. Pleasant	1,970	8	1,840	8	2,300	9	1,840	7	1,670	7				
US 301, between Armstrong Corner Rd and Mt. Pleasant	2,910	13	3,000	13	3,075	14	2,990	13	2,930	13				
US 301 Bypass	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Trucks include FHWA Class 5-13, representing all trucks larger than and including two-axle single unit trucks, such as UPS delivery trucks and DART Paratransit buses.

Signalized Intersections

Peak period turning movement counts are being collected on an annual basis at five (5) key signalized intersections in the project area. These five (5) locations, which are all located along the existing US 301 Corridor between Middletown (SR 299) and the Summit Bridge, will be analyzed annually to monitor the change (degradation or improvement) in operation of each intersection. The five (5) locations, summarized in Figure 5, and Table 3, are the signalized intersections of existing US 301 / SR 896 at Old Summit Bridge Road, Boyds Corner Road, Armstrong Corner Road, North Broad Street, and Bunker Hill Road. Peak hour turning movement counts were performed at these intersections during October 2014. This data was used to create a model of the corridor using Synchro (Version 8), a macroscopic traffic analysis software application used to evaluate the operational performance characteristics of signalized and unsignalized intersections. The results of these analyses are summarized in Table 3 and Figures 12 and 13.

For this monitoring report, the operational performance of signalized intersections is presented in terms of average delay per vehicle and a corresponding letter grade, typically referred to as "Level of Service" (LOS). Level of Service "A" (delay ≤ 10 sec/vehicle) represents the best possible operating conditions, whereas LOS "F" (delay > 80 sec/veh) represents congested conditions corresponding with traffic that has reached or exceeded available intersection capacity, resulting in relatively high average delay per vehicle and higher likelihood that vehicles will take more than one signal cycle to clear the intersection.

The results of the 2010, 2011, 2012, 2013 and 2014 intersection capacity analyses are summarized in Table 3 and the following trends were observed between 2010 and 2014:

- US 301 at Old Summit Bridge Road: The intersection operated at LOS A during both the AM and the PM peak hours in 2010, 2011, 2012, 2013 and 2014. No significant changes were observed.
- US 301 at SR 896: The intersection operated at LOS C during both the AM and the PM peak hours in 2010, 2011, 2012, 2013, and 2014. No significant changes were observed.
- US 301 at Armstrong Corner Road / Marl Pit Road: The intersection operated at LOS C during both the AM and the PM peak hours in 2010, 2012, and 2013; however, the intersection operated at LOS D during both the AM and the PM peak hours in 2011 and 2014. The increase in delay in 2014 may have been attributable to modifications to the traffic signal timing.
- US 301 at SR 71: The intersection operated at LOS C during the AM peak hour in 2010, 2011, 2012, 2013, and 2014. The intersection operated at LOS D during the PM peak hour in 2010, 2011, 2012, and 2013; however, the intersection operated at LOS C during the PM peak hour in 2014.
- US 301 at SR 299: The intersection operated at LOS D during the AM peak hour in 2010, 2011, 2012, and 2013; however, the intersection operated at LOS C during the AM peak hour in 2014. The intersection operated at LOS D during the PM peak hour in 2010, 2011, 2012, 2013 and 2014.

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Table 3:
Peak Hour LOS at Selected Signalized Intersections along US 301

Site	2010		2011		2012		2013		2014		2015		2016	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
US 301 at Old Summit Bridge Rd	A	A	A	A	A	A	A	A	A	A				
US 301 at SR 896	C	C	C	C	C	C	C	C	C	C				
US 301 at Armstrong Corner Rd	C	C	D	D	C	C	C	C	D	D				
Existing US 301 at SR 71	C	D	C	D	C	D	C	D	C	C				
Existing US 301 at SR 299	D	D	D	D	D	D	D	D	C	D				

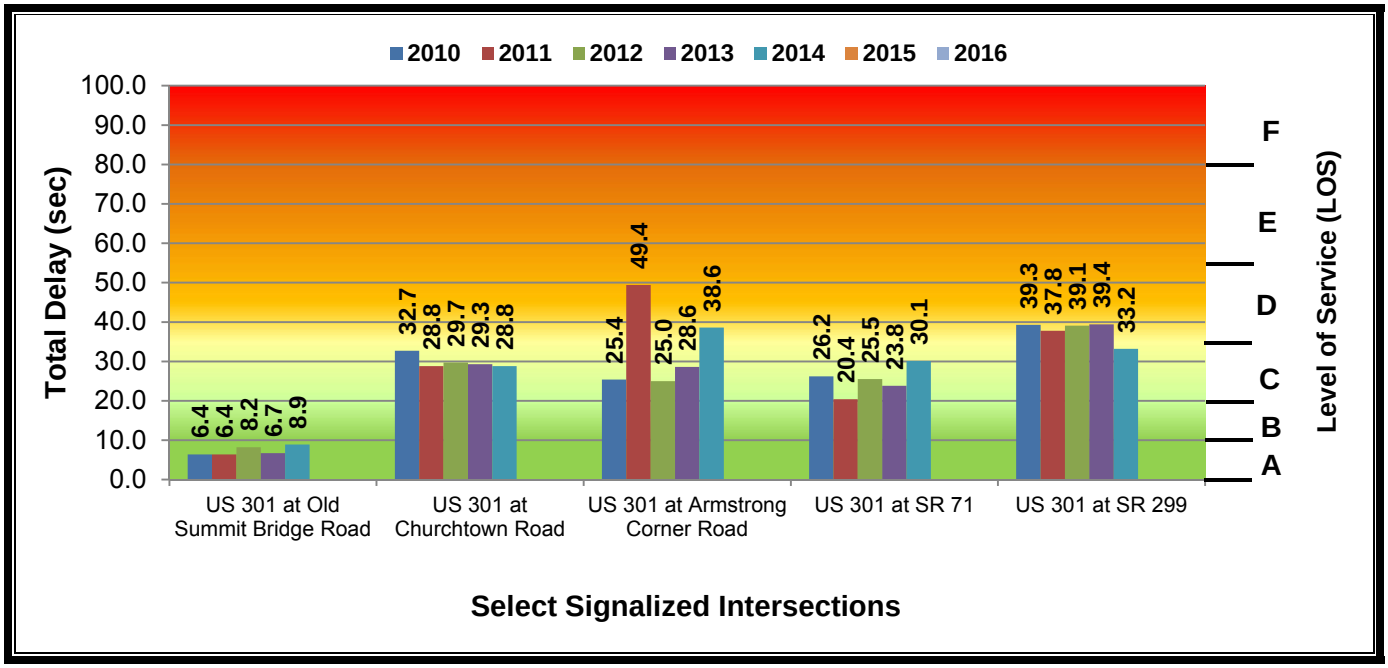

Figure 12: Total Delay and Corresponding Level of Service (LOS) at Select Signalized Intersections along US 301 during the AM Peak Hour

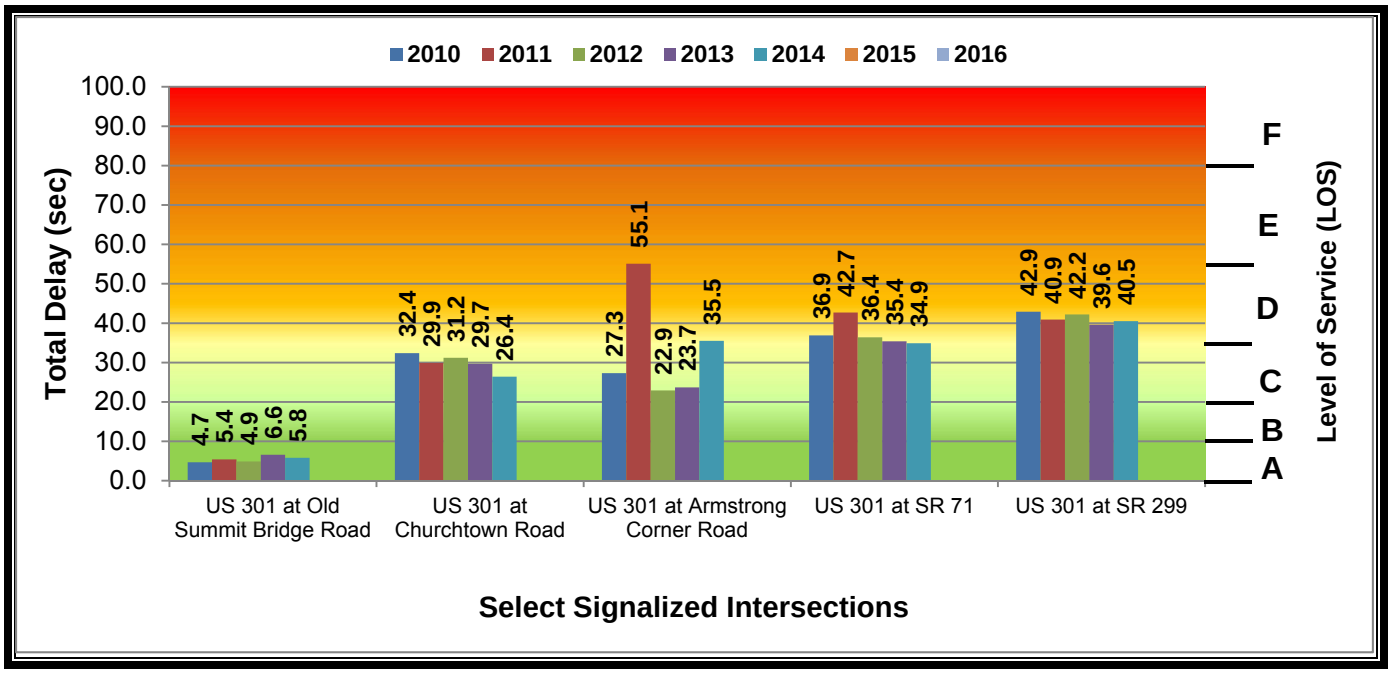

Figure 13: Total Delay and Corresponding Level of Service (LOS) at Select Signalized Intersections along US 301 during the PM Peak Hour

Unsignalized Intersections

Delay studies were performed at the following three (3) unsignalized intersections along the existing US 301 and Choptank Road corridor:

- US 301 at Old School House Road
- US 301 at Keenan Auto Body
- Choptank Road at Clayton Manor Drive

The locations were selected to represent the typical operation of unsignalized access points along the US 301 and Choptank Road corridors, both of which are likely to be impacted by construction of the Spur Road. Similar to the signalized intersections, the operational performance of unsignalized intersections is presented in terms of average delay per vehicle and a corresponding Level of Service (LOS). For unsignalized intersections, the Level of Service thresholds are somewhat lower than the thresholds for signalized intersections, with LOS F representing conditions where vehicles experience 50 or more seconds of delay.

The number of vehicles stopping at the stop sign and the length of each stop was recorded at each of the three study intersections during the PM peak hour. The PM peak hour was selected since it represents the period that vehicles typically experience the highest level of delay making turns from minor street approaches onto US 301 and Choptank Road. The average delay per stopped vehicle was determined for each location (see Figure 14). In 2014, the average control delay was 31 seconds per vehicle (LOS D) at the intersection of US 301 and Old School House Road, 44 seconds per vehicle (LOS E) at the intersection of US 301 at Keenan Auto Body and 17 seconds per vehicle (LOS C) at the intersection of Choptank Road and Clayton Manor Drive. A comparison of the 2010, 2011, 2012, 2013, and 2014 studies is shown in Figure 14.

It should be noted that the delay at the intersection of Keenan Autobody increased significantly in 2011 (by 21 seconds per vehicle) to nearly a minute of delay per vehicle. This increase in delay may have been attributable to the Cedar Lane Road closure which was necessary to repair the bridge just north of the Marl Pit Road intersection. Following the completion of the bridge work, the delay decreased back to the 2010 level (37 seconds per vehicle) in 2012. The delay increased in 2014 (by 7 seconds per vehicle) compared to 2010 data.

The delay increased at the intersection of Choptank Road and Clayton Manor Drive in 2014 (by 6 seconds) compared to 2010 data. Lastly, there was a decrease in delay at the intersection of US 301 and Old School House Road in 2014 (by 8 seconds per vehicle) compared to 2010 data.

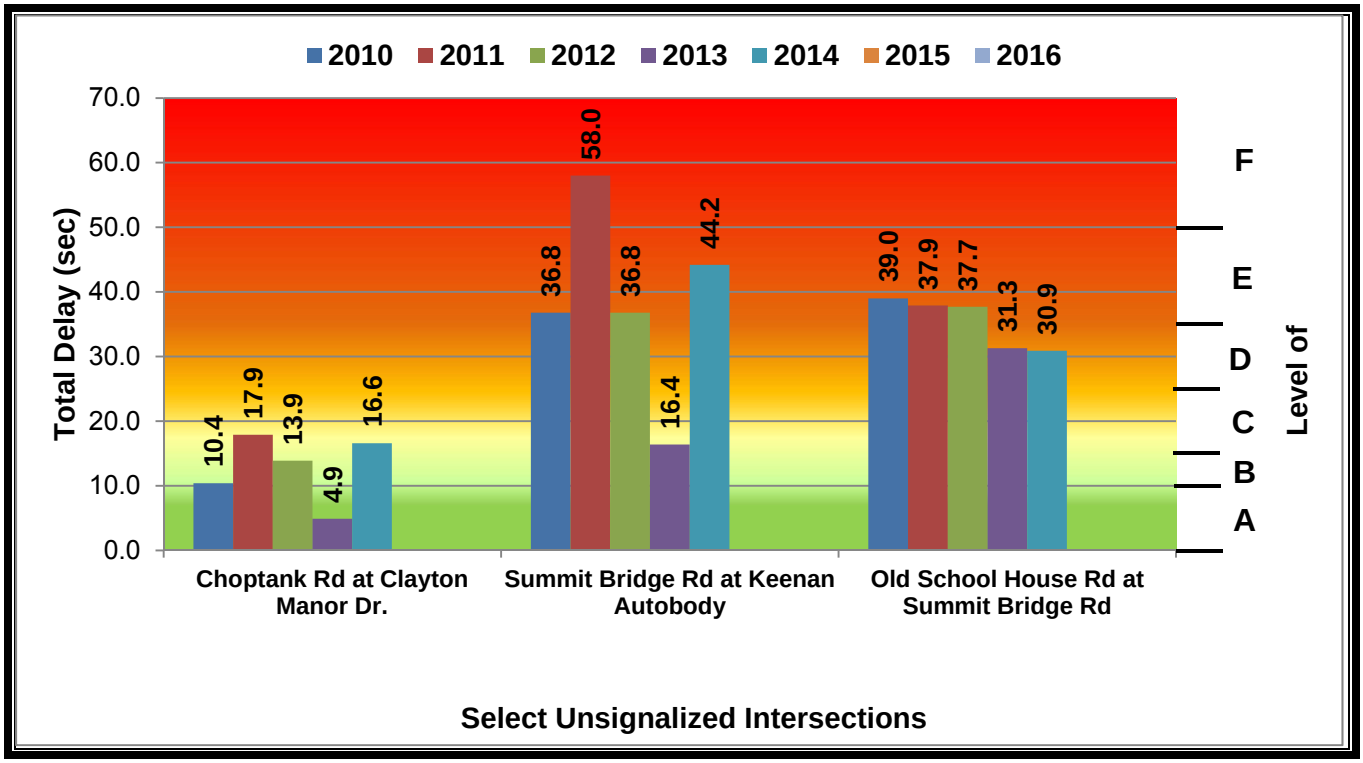

Figure 14: Total Delay and Corresponding Level of Service (LOS) at Select Unsignalized Intersections along US 301 during the PM Peak Hour

Highway Safety

The goal of this annual monitoring report with respect to safety is to monitor the number of crashes occurring on local roads throughout the US 301 Project Area. The number of crashes will be documented each year to determine if any road segments experience a significant increase in crashes.

The number of reported crashes occurring within each key roadway segment in 2010, 2011, 2012, 2013, and 2014 is shown in Table 4 and on Figure 15. Crash data for prior years, while available, was not included in this summary for two reasons: First, there was a considerable amount of roadway construction activity ongoing during 2007 and 2008 throughout the project area that

would likely skew the crash data for those years, including long-term lane reductions and temporary closures of US 301, construction along Choptank Road, etc. Second, data will be collected each year for several years into the future, providing a basis for comparison of several years' worth of crash data, including the identification of crash trends over time.

Average Accident Rates have been calculated for each road segment to provide a relative measure of comparison of each roadway segment, factoring in traffic volumes, with other similar roads throughout Delaware and New Castle County (see Table 4). The calculated Average Accident Rates were compared to the Statewide and New Castle County crash rates for similar roadway segments of the same functional classifications. The DelDOT Safety Section provided the Statewide and New Castle County Average Crash Rates for 2010, 2011, 2012, 2013, and 2014. According to the comparison, five (5) of the eight roadway segments being monitored had higher crash rates than the Statewide and New Castle County Average Rate in 2014.

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Table 4A:
Average Accident Rate for Road Type (AART)
(Accidents/ Million Vehicle Miles Traveled)

Site	2010				2011				2012				2013			
	Number of Crashes	Crash Rate	Delaware Crash Rate	NCC Crash Rate	Number of Crashes	Crash Rate	Delaware Crash Rate	NCC Crash Rate	Number of Crashes	Crash Rate	Delaware Crash Rate	NCC Crash Rate	Number of Crashes	Crash Rate	Delaware Crash Rate	NCC Crash Rate
US 301 between Summit Bridge and SR 896 (Boyds Corner Rd)	32	1.44	0.75	0.55	21	0.93	0.74	0.53	21	0.95	0.47	0.55	23	0.98	0.73	0.51
The "curve" between Summit Bridge and Bethel Church Rd	2				5				4				5			
The intersection of US 301 and Bethel Church Rd	3				3				3				6			
US 301 between SR 896 and Peterson Rd	50	1.78	1.27	1.35	27	0.94	1.40	1.42	42	1.40	1.30	1.42	50	1.72	1.38	1.39
US 301 between Peterson Rd and Levels Rd	22	3.06	3.43	3.78	16	2.18	3.41	3.81	22	2.86	3.04	3.79	19	2.12	3.40	3.81
US 301 between Levels Rd and DE / MD State Line	19	1.42	1.27	1.35	13	0.95	1.40	1.42	10	0.65	1.30	1.42	11	0.73	1.38	1.39
Bethel Church Rd between US 301and Choptank Rd	6	6.05	2.10	2.91	2	1.30	2.08	2.80	3	2.02	0.65	2.85	1	0.65	2.06	2.78
Choptank Rd between Bethel Church Rd and Bunker Hill Rd	8	3.32	2.10	2.91	5	0.86	2.08	2.80	10	1.76	0.65	2.85	12	1.51	2.06	2.78
Bunker Hill Rd between Choptank Rd and US 301	5	8.83	2.10	2.91	7	12.97	2.08	2.80	4	4.07	0.65	2.85	6	5.88	2.06	2.78
SR 1 between Roth Bridge and US 13 / SR 1 Split (Tybouts Corner)	53	0.41	1.09	1.09	69	0.52	1.12	1.12	47	0.34	1.09	1.09	71	0.51	1.10	1.10

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Table 4B:
Average Accident Rate for Road Type (AART)
(Accidents/ Million Vehicle Miles Traveled)

Site	2014				2015				2016				2017			
	Number of Crashes	Crash Rate	Delaware Crash Rate	NCC Crash Rate	Number of Crashes	Crash Rate	Delaware Crash Rate	NCC Crash Rate	Number of Crashes	Crash Rate	Delaware Crash Rate	NCC Crash Rate	Number of Crashes	Crash Rate	Delaware Crash Rate	NCC Crash Rate
US 301 between Summit Bridge and SR 896 (Boyds Corner Rd)	32	1.31	0.69	0.44												
The "curve" between Summit Bridge and Bethel Church Rd	5															
The intersection of US 301 and Bethel Church Rd	10															
US 301 between SR 896 and Peterson Rd	56	1.81	1.43	1.50												
US 301 between Peterson Rd and Levels Rd	38	4.28	3.50	3.98												
US 301 between Levels Rd and DE / MD State Line	9	0.58	1.43	1.50												
Bethel Church Rd between US 301and Choptank Rd	4	2.47	2.07	2.65												
Choptank Rd between Bethel Church Rd and Bunker Hill Rd	16	1.91	2.07	2.65												
Bunker Hill Rd between Choptank Rd and US 301	5	4.67	2.07	2.65												
SR 1 between Roth Bridge and US 13 / SR 1 Split (Tybouts Corner)	77	0.52	1.09	1.09												

In general, the number of crashes decreased between 2010 and 2012 at most of the locations being monitored. Only two locations experienced an increase of crashes between 2010 and 2012. However, the number of crashes increased between 2012 and 2014 at most of the locations being monitored. The number of crashes increased between 2012 and 2014 for six of the roadway segments being monitored. This included US 301 between Summit Bridge and SR 896 (Boyds Corner Road), where the number of crashes increased from 21 to 32, US 301 between SR 896 (Boyds Corner Road) and Peterson Road, where the number of crashes increased from 42 to 56, US 301 between Peterson Road and Levels Road, where the number of crashes increased from 22 to 38, Bethel Church Road between Choptank Road and US 301, where the number of crashes increased from 3 to 4, Choptank Road between Bethel Church Road and Bunker Hill Road, where the number of crashes increased from 10 to 16, Bunker Hill Road between Choptank Road and US 301, where the number of crashes increased from 4 to 5, and SR 1 between Roth Bridge and US 13/ SR 1 Split (Tybouts Corner), where the number of crashes increased from 47 to 77.

The number of crashes decreased from 2012 to 2014 for the section of US 301 between Levels Road and the DE / MD state line, where the number of crashes decreased from 10 to 9.

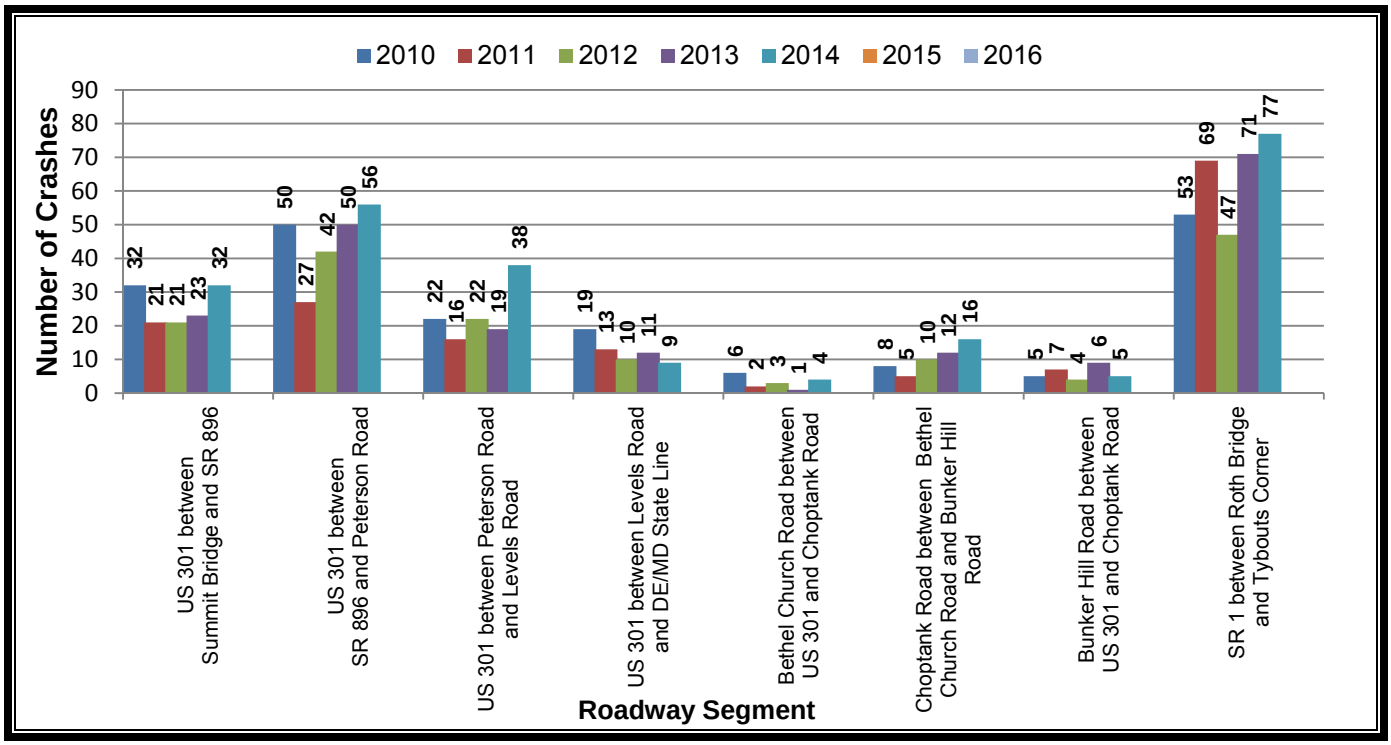

Figure 15: Comparison of Crashes for Select Roadways in the US 301 Corridor

Hazard Elimination Program

Roadway segments in the project area that are reported within DelDOT's Hazard Elimination Program (HEP) will be identified each year during the construction of US 301. DelDOT's High Risk Rural Roads Program (HRRRP) locations between 2007 and 2012 also have been identified; however, it should be noted that HRRRP was discontinued at the end of 2012. These programs seek improvements focused on reducing the number of crashes at each location. A list of the HEP and HRRRP locations between 2007 and 2014 can be found in Tables 5 and 6.

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Table 5: Hazard Elimination Program Locations – From 2006 to 2014			
Site	**Start Milepost**	**End Milepost**	**Year Studied**
US 13	0.19 miles South of Greylag Road	0.24 miles North of Boyds Corner Road	2006
US 301/SR 896 Summit Bridge Rd	0.44 miles North of Beaston Rd	0.56 miles South of Bethel Church Rd	2007
SR 299/Main Street	0.25 miles West of Brick Mill Road	0.24 miles East of Brick Mill Road	2007
SR 299/Main Street	0.35 miles East of Brick Mill Road	0.23 miles West of Brick Mill Road	2009
SR 1	1.36 miles South of SR 299	0.97 miles south of SR 299	2009
SR 299/Main Street	US 301	0.11 miles East of Silver Lake Road	2010
US 301/SR 896 Summit Bridge Rd	0.21 miles North of Springmill Drive	0.25 miles North of Marl Pit Road	2011
SR 299	0.1 mile west of Park Alley	Northbound US 13	2012
US 301 / SR 896	Churchtown Road	0.29 mile north of Churchtown Road	2012
US 301 / SR 896	0.44 miles north of Beaston Road	0.46 miles south of Bethel Church Road	2013
US 13	0.33 miles south of SR 1 ‘Free Ramp”	0.26 miles north of SR 1 “Free Ramp”	2014
Bunker Hill Road	0.04 miles west of Sandhill Drive	US 301	2014

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Table 6: High Risk Rural Roads Program Locations – from 2007 to 2014			
Site	**Start Milepost**	**End Milepost**	**Year Studied**
Churchtown Rd	0.11 miles East of Dickerson Lane	0.33 miles West of SR 896/ Summit Bridge Rd	2009
Cedar Lane Road	0.33 mile south of SR 896	0.04 mile south of SR 896	2012

Incident Management

One of the regional benefits identified with the Spur Road is that it will provide an alternative north-south route for traffic should there be an incident that occurs on the following road segments:

- Existing US 301 between SR 299 and Bethel Church Road
- SR 896 (Boyds Corner Road) between US 301 and US 13
- Bethel Church Road between US 301 and Choptank Road

- SR 1 between Roth Bridge and I-95

For this monitoring program, DelDOT is tracking the number of significant incidents that occur each year on these roads which result in detours that could have been accommodated more safely and efficiently on the Spur Road rather than on the local road network. Since 2004, there have been 84 incidents, including 8 in 2014, that have resulted in 200 or more hours of detour-related delay. These incidents occurred in locations that could have utilized the Spur Road as an alternate detour route if it existed, thereby reducing impacts to the local roadway network. Additional detail for each of these incidents that has occurred since 2004 are summarized in Appendix D.

Construction Projects

DelDOT and the Town of Middletown will likely have several other active maintenance and construction projects occurring at various times during the duration of the US 301 Spur Monitoring Program that could affect the traffic data being collected. DelDOT identified four (4) active construction projects in the US 301 project area in 2014, as shown in Table 7. Although the SR 1 / I-95 Interchange project is not located in the vicinity of the US301 project area, it should be mentioned due to its significant traffic impacts to SR 1 in New Castle County. As part of the program, DelDOT will continue to monitor all active roadway construction projects in the US 301 project area from south of Middletown to approximately the Chesapeake and Delaware Canal.

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Table 7:
Construction Activity in the US 301 Project Area in 2014

Contract Number	Project Title	Start/End	Project Description
T201009003	SR 1 / I-95 Interchange	September 2011 / October 2013	Construct high speed connecting ramps from both Northbound SR1 to Northbound I-95 and from Southbound I-95 to Southbound SR 1
T201206109	Pavement & Rehabilitation, North IX, 2012	December 2013 / November 2014	Milling, overlay and ADA improvements along SR 71 between Townsend and Middletown.
Army Corp of Engineers	Summit Bridge Construction	4-26-2011 / Winter 2014	Bridge repair work requiring permanent lane closures.
Army Corp of Engineers	Reedy Point Bridge Construction	March 2012 / Summer 2014	Bridge repair work requiring 3–week lane closures periods.


U.S.
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