



2016 CORRIDOR MONITORING AND TRIGGERING REPORT

July 2017



WILMAPCO

 **DelDOT**
Delaware Department of Transportation



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Moving Forward

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CONTACTS

Wilmington Area Planning Council
Dan Blevins
850 Library Avenue, Suite 100
Newark, Delaware 19711
dblevins@wilmapco.org

New Castle County
Owen Robatino
87 Reads Way
New Castle, Delaware 19720
ocrobatino@nccde.org

Delaware Department of Transportation
Mark Tudor
800 Bay Road
Dover, Delaware 19901
mark.tudor@state.de.us

Delaware Transit Corporation
Evan Horgan
119 Lower Beech Street, Suite 100
Wilmington, Delaware 19805-4440
evan.horgan@state.de.us

INTRODUCTION

The Route 40 Corridor Improvements Project was initiated by the Delaware Department of Transportation in partnership with New Castle County and WILMAPCO in September 1998. Completion of the first four steps of this project produced a community-supported 20-year transportation plan prepared under the direction of a Steering Committee composed of civic leaders, elected officials, and business interests. Technical support for plan development was provided by a project team, composed of the project partners' staffs and their planning and engineering consultants. The Route 40 Corridor 20-Year Transportation Plan (the Plan) was adopted on June 19, 2000.

The Plan addresses the conditions that are expected to result from projected growth in housing, employment, and traffic over 20 years. The Plan contains projects, separated into three phases (Phase I 2000-2007, Phase II 2008-2013, Phase III 2014-2020), that address projected transportation problems. By phasing projects over 20 years and using a monitoring and triggering mechanism, projects will be built only as conditions dictate, addressing one of the main goals of the Steering Committee.

The fifth and final step of the project, the implementation of the Plan recommendations, is now in its seventeenth year. This seventeenth annual Corridor Monitoring and Triggering Report is an essential component of this step. To assure that all projects in the Plan are implemented as conditions dictate—neither prior to the anticipated need, nor subject to unnecessary delay after need is identified—the Plan included an implementation strategy consisting of five components:

- Corridor preservation
- Monitoring
- Triggering
- Citizen involvement
- Project implementation

Citizen involvement is accomplished through a Corridor Monitoring Committee (CMC). Until 2008, this committee typically met three or four times each year with the project team to review conditions in the corridor. The CMC met once in 2016.

The monitoring efforts, which are summarized in this report, consider:

- Land development
- Traffic
- Corridor preservation
- Highway safety
- Transit service

- Project status
- Impact of completed projects
- Other projects in the region

Each of these factors is discussed in the following sections. The project team's assessment of these monitored conditions forms the basis for the triggering section of the report. Examples of triggering, as defined in the Plan, are listed below.

- Major land development activity would trigger immediate review of transportation needs: level of service implications and strategy, transit service needs or opportunities, safety concerns, and pedestrian and bicycle needs.
- Steady deterioration in level of service to D or worse would trigger a response in the form of strategies to stabilize/reduce demand (i.e. travel demand management measures or transit improvements) or increase multimodal capacity.
- Safety improvements recommended by the Hazard Elimination Program (HEP), a component of the Highway Safety Improvement Program, would trigger an evaluation by the project team of the compatibility of the proposed improvements with the Plan and of the need to make adjustments to the Plan.
- Transit service changes proposed by DTC would trigger an evaluation by the project team of any ancillary improvements needed to complement the service changes, such as sidewalks or shelters that should be advanced in the Plan's implementation.
- Transportation improvements that are not part of the Plan but that impact the corridor and are proposed for implementation would trigger an evaluation by the project team. The evaluation would focus on compatibility of the proposed improvements with the Plan and the need to make adjustments to the Plan.

Assessment of these potential changes may trigger one of the following options to best respond to the new conditions:

- Continue with a Plan project or projects as currently scheduled in the WILMAPCO Transportation Improvement Program (TIP) and/or DelDOT Capital Transportation Program (CTP).
- Move a project(s) forward in the TIP/CTP schedule and determine appropriate level of effort for design activities.
- Move a project(s) back into the out years of the TIP/CTP schedule.

MONITORING

Land Development

Site Review Team

Development activity is typically monitored through meetings of the site review team, which consists of representatives from DelDOT, the New Castle County Department of Land Use, and the Delaware Transit Corporation. Members of the Route 40 Project Team continue to review plans in the corridor for consistency with and impact to the Plan and provide comments to DelDOT and New Castle County. The team's comments include recommendations in such areas as corridor preservation, access management, and cost-sharing opportunities.

Summary of Development Activity

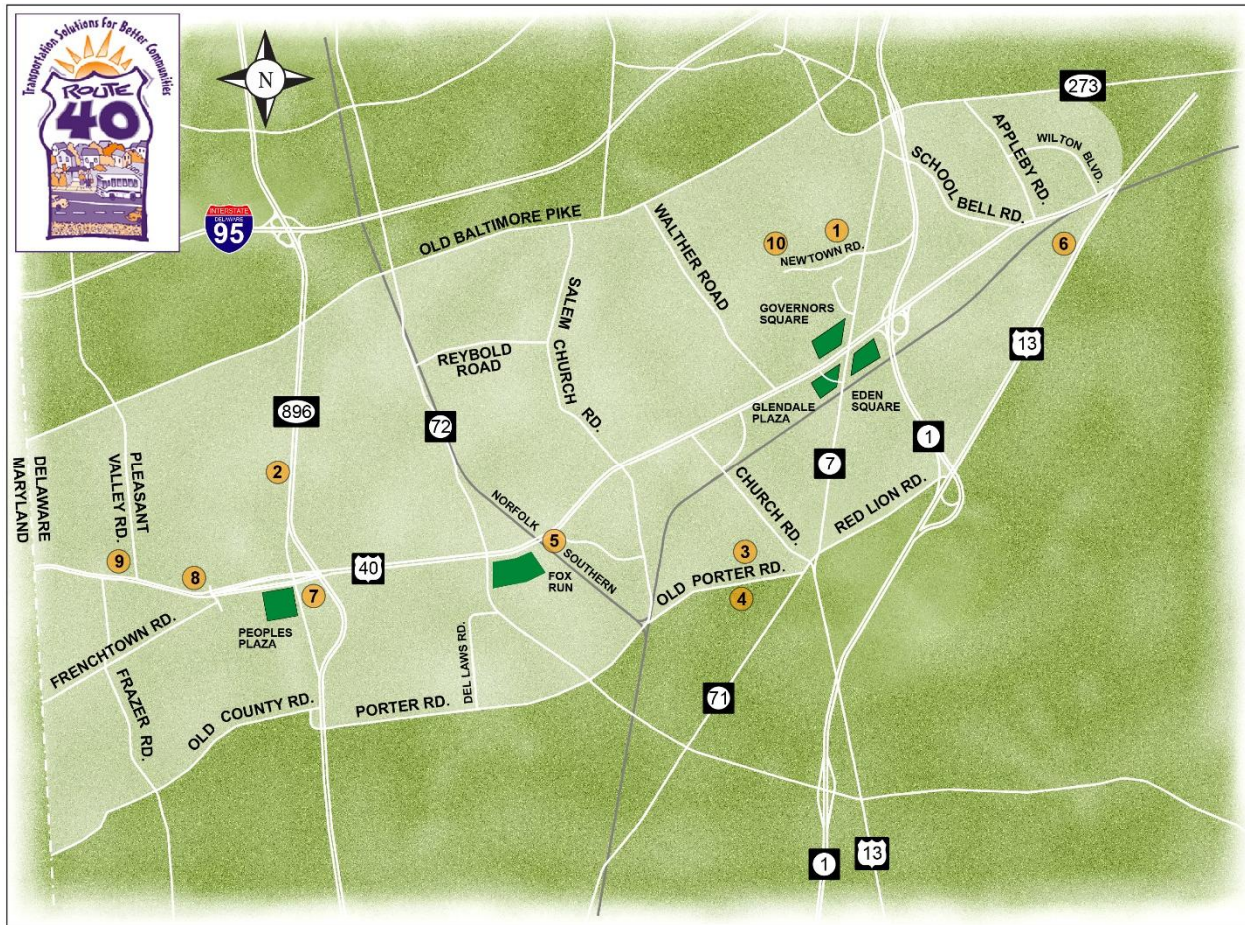
During 2016, there were 25 new development plans (2 major/rezonings, 5 minor, and 18 resubdivision/other) submitted to New Castle County for review in the Route 40 corridor. This level of development activity is more than the previous year. There were two new major plans submitted in 2016. Table 1 provides a description and status of the current major development proposals, as well as other previously-submitted major plans discussed during the year. Major development locations are shown in Figure 1.

Review of eight major developments proposed before 2016 continued this year. Among those plans, two (Newtown Square and Troy Granite) were recorded during 2016. Among the remaining six plans, four are in the record plan submittal stage and two are in the exploratory submittal plan review stage.

Table 1. Major Development Plans/Rezonings Received and/or Reviewed During 2016

Site	Description	Remarks	New plan in 2016?
Newtown Square	Demolish existing building to construct a 14,000 SF retail building, 2,500 SF bank with drive-thru, and a 6,200 SF restaurant and associated improvements	Recorded	No
Troy Granite	Combine tax parcels 11-017.00-046 and 11-017.00-047 to construct a 7,000 SF showroom and 42,500 SF warehouse	Recorded	No
Vista at Red Lion Section One	Rezone from S to ST to construct 279 age restricted townhouse units on 56.71 acres	Record Submittal	No
Vista at Red Lion Section Two	Rezone from S to ST to construct 290 single family units on 144.88 acres	Record Submittal	No
Advance Auto Parts	Proposed construction of a 6,889 SF auto parts store	Record Submittal	No
Old State Road Self Storage	Construct 29,700 SF of self-storage buildings and 600 SF office on 13.51 acres	Record Submittal	No
Glasgow Commons	Proposed 308,500 SF shopping center and offices with associated improvements on 30.94 acres	Exploratory Submittal	No
La Grange Plaza	Rezone property to construct a 6,560 SF restaurant and 10,720 SF office/retail building on 5.25 acres	Exploratory Submittal	No
The Cascades	Construct an open spaced planned community consisting of 18 single family detached lots, 64 village lots, and 33 lot line lots	Exploratory Submittal	Yes
Village of Canterbury	Construct three, three-story apartment buildings with eight units per building and replace 19 parking spots lost by garage construction	Exploratory Submittal	Yes

Figure 1. Active Major Development Plans/Rezoning



- | | |
|----------------------------------|---------------------------|
| 1. Newtown Square | 7. Glasgow Commons |
| 2. Troy Granite | 8. La Grange Plaza |
| 3. Vista at Red Lion Section One | 9. The Cascades |
| 4. Vista at Red Lion Section Two | 10. Village of Canterbury |
| 5. Advance Auto Parts | |
| 6. Old State Road Self Storage | |

Developer Agreements

Since 2000, there have been more than 400 applications submitted to New Castle County for developments in the Route 40 Corridor. In addition to those previously noted, more than 60 land development projects in the corridor have developer agreements with the State or County regarding transportation improvements in the corridor. These improvements range from sidewalks to widening of roadways, signal agreements and significant right-of-way dedication. New Castle County continues to work with DelDOT on a comprehensive tracking system for these agreements, which is used to coordinate private and DelDOT-sponsored roadway improvements. Developer contributions throughout the corridor are highlighted in Figure 2.

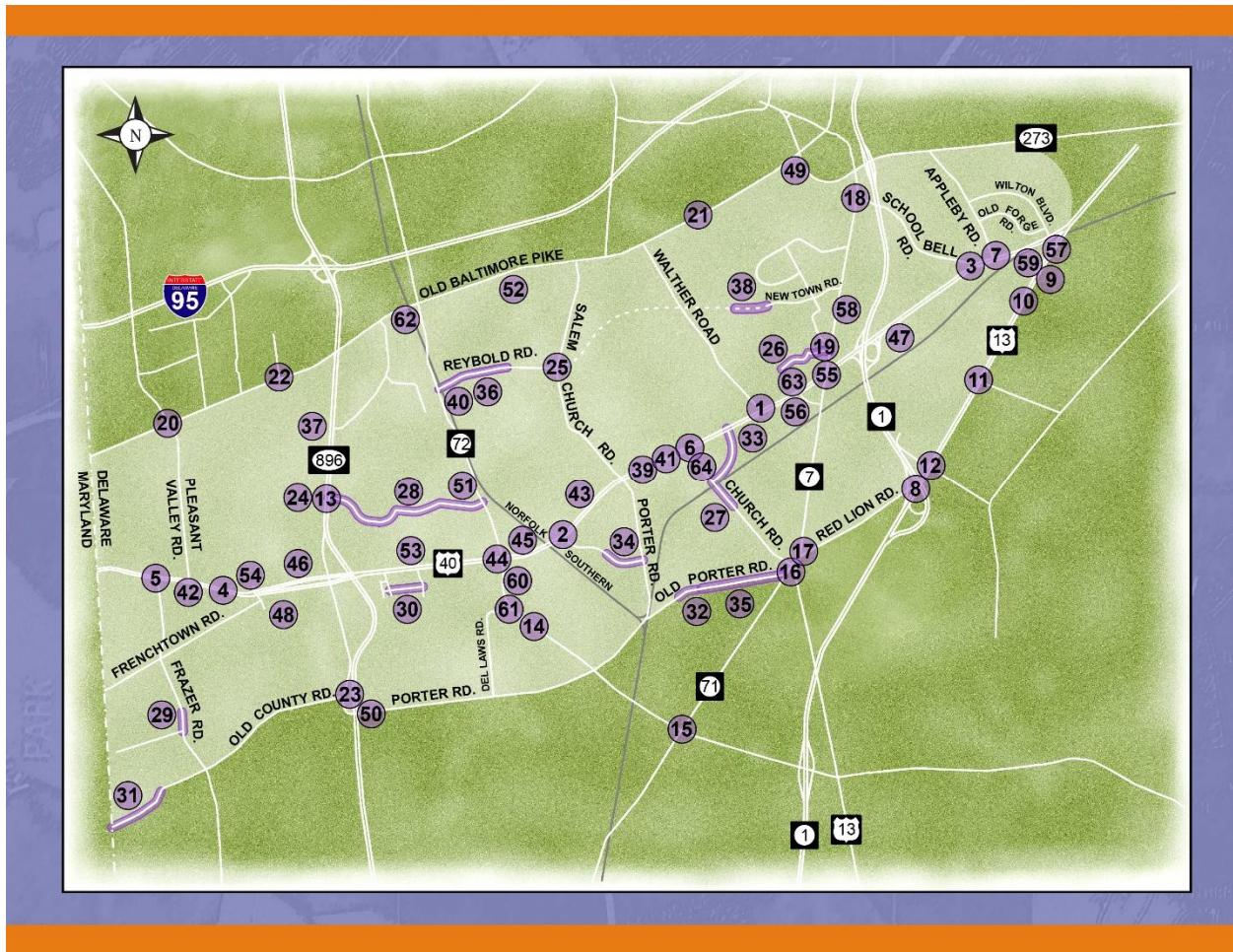
Any proposed development requiring a Level of Service (LOS) waiver from New Castle County must first have a Traffic Mitigation (TM) Agreement negotiated with DelDOT. TM Agreements were implemented to provide an alternative for developers to reduce trip generation and provide transportation demand management measures. Developers are required to present primary and contingent trip reduction measures that could include alternative work hours, preferential parking for carpools/vanpools, bicycle storage, and parking management. There are four developments in the Route 40 Corridor that have TM Agreements with DelDOT: Lincoln Center, Springside Plaza, Astra Zeneca, and Gore.

TIS Waivers / Fair Share Contributions

In 2004, New Castle County amended its Unified Development Code (UDC) regarding Traffic Impact Study (TIS) Waivers. The UDC already enabled such waivers for developments where TISs had been done for changes in zoning. The modification allowed TIS Waivers for developments in Transportation Improvement Districts (TIDs) or similarly defined areas where sufficient prior traffic studies have been done. There are currently two operating TIDs in Delaware, Westown in Middletown and US 13 in Dover. There are several additional TIDs under consideration in the Kent County Comprehensive Plan. A TIS Waiver involving a TID uses the adopted Regional Transportation Plan, rather than a TIS, to determine what transportation improvements should be the developer's responsibility. The developer may still be required to perform a Traffic Operational Analysis (TOA) to demonstrate DelDOT and County Level of Service (LOS) concurrency.

Within the Route 40 Corridor, 25 development plans have requested TIS Waivers for locations in a TID. By the end of 2016, TIS Waivers had been approved for 20 of them. Two developments did not require a TIS: Reserve at Becks Pond involved workforce housing, which is exempt from County concurrence; and Lighthouse Baptist Church where the nearby intersection had been recently improved. DelDOT also denied a TIS Waiver for Governors Square Commercial Center and required a TIS for Whitewood Village. Another development, Whittington Woods, completed a TIS instead of completing the waiver process.

Figure 2. Developer Contributions*



*Note: See legend on the following page.

Figure 2. Developer Contributions (cont.)

KEY	INTERSECTION / ROAD	DEVELOPMENTS
1	US 40/Walther Road	Meridian Crossing, Village of Fox Meadow, Glennwood Station, Rockwood Apartments, Governors Square II, River Walk, Barrett Run, Governors Field, Wilmington University
2	US 40/Scotland Drive	St. Andrews, St. Andrews Addition
3	US 40/School Bell Road	Wal-Mart, School Bell Crossing Shopping Center
4	US 40/Perch Creek Drive	Kohl's, LaGrange
5	US 40/Frazer Road	St. Margaret of Scotland, Meritage
6	US 40/Church Road/Wellington Drive	Meridian Crossing, Wellington Commons
7	US 40/Appleby Road	Wal-Mart, Dover Federal Credit Union
8	US 13/SR 71	Red Lion Mini-Storage
9	US 13/Schafer Boulevard	Mallard Pointe
10	US 13/Saienni Boulevard/Mallard Road	Mallard Pointe, Bayview Manor II, Chaddwyck, Jillians Way
11	US 13/Federal School Lane	Chaddwyck
12	US 13/Bear-Tybouts Road/Hamburg Road	Blue Diamond Recreation Park, Chaddwyck
13	SR 896/Corporate Boulevard/GBC Drive	Glasgow Business Community; Parcel 2C-2, Pencader Corp. Center Parcel 32, Parcel 33 and Gore
14	SR 72/Mabel Lane	Caravel Academy
15	SR 71/SR 72	Willow Oak Farms, Red Lion Chase, Sunset Meadows, Red Lion Christian Academy, Sunset Run, Village of Red Lion Creek, Estates of Red Lion, Jester Crossing, Peoples Industrial Park
16	SR 71/Church Road	Meridian Crossing, Wellington Commons
17	SR 7/SR 71	Love of Christ Church, Corbitt Estates, Estates of Red Lion, Peoples Industrial Park
18	SR 7/School Bell Road	School Bell Apartments
19	Songsmith Drive/Governors Square access	Calvarese Farms, Governors Square Commercial
20	Old Baltimore Pike/Otts Chapel Road/Pleasant Valley Road	Deerbome Woods, Lighthouse Baptist Church
21	Old Baltimore Pike/Martha Washington Boulevard/Norwegian Woods Drive	Norwegian Woods, Hershberger Apartments
22	Old Baltimore Pike/Iron Hill Road	Preserve at Lafayette Hill
23	Glasgow Avenue/Old County Road	Meritage
24	Corporate Boulevard/Executive Drive	Pencader Corporate Center; Parcel 30A
25	Salem Church Road/Reybold Road	AstraZeneca, Whitewood Village
26	Carvel Drive traffic calming	Calvarese Farms
27	Church Road	Rockwood Apartments, Meridian Crossing
28	GBC Drive (Dusk Run Road), SR 896 to SR 72	Gore
29	Frazer Road	Meritage (frontage shoulder)
30	George Williams Way	YMCA, Delaware State Police, Bristol Place
31	Old County Road	Estates at Long Branch (frontage, extending west to Maryland border)
32	Old Porter Road curve realignment	Meridian Crossing
33	Rockwood Drive	Rockwood Apartments
34	Scotland Drive extension, St. Andrews Road to Porter Road	St. Andrews Addition
35	Old Porter Road	Vista at Red Lion
36	Reybold Road	Whitewood Village
37	Route 896/Old Coochs Bridge Road/Four Seasons Parkway	Thirteen Stars Housing and Gore
38	Newtown Trail	Whittington Woods
39	US 40/Glasgow Drive	Salem Center
40	SR 72/Reybold Road	Whitewood Village
41	US 40/Brookmont Drive	Wellington Commons
42	US 40/Pleasant Valley Road	Pleasant Valley Crossing, Royal Farms
43	US 40/Becks Woods Drive	Becks Woods Plaza, St. Andrews Addition
44	US 40/SR 72	Fox Run Shopping Center, Belltown Business Center
45	US 40/PGA Blvd	Belltown Business Center
46	US 40/Peoples Plaza	LaGrange
47	US 40/Buckley Blvd	Americinn, Goodyear, Gordon Furniture
48	US 40/Biddle Avenue	Springside Plaza
49	Old Baltimore Pike/SR 273	Comfort Suites, Promenade at Christiana
50	SR 896/Porter Road	Gore, Colony at Summit Bridge
51	SR 72/GBC Drive	Gore
52	Old Baltimore Pike/Hanna Drive	Astra Zeneca
53	US 40/LaGrange Avenue/Glasgow Park	YMCA, Delaware State Police, New Castle County
54	US 40/N392A	Deer Park Plaza
55	US 40/SR 7	Governors Square Commercial, Newtown Square
56	SR 7/Glendale Connector/Old Hamburg Road	Governors Square Commercial
57	US 13/Langollen Blvd	Old State Road Hotel, Old State Road Self Storage
58	SR 7/Songsmith Drive South	Governors Square Commercial, Lincoln Center
59	Old State Road	Old State Road Hotel, Old State Road Self Storage
60	SR 72/Rue Madora	Fox Run Business Center
61	SR 72/Del Laws Road	Fox Run Business Center
62	SR 72/Old Baltimore Pike	Royal Farms
63	US 40 Widening	Governors Square II, Wilmington University, Rockwood Apartments
64	Church Road/Rockwood Road	Steeple Glen, Rockwood Apartments

Traffic

To monitor traffic growth, full-day traffic counts were conducted on five segments of Route 40 using automatic tube counters. These segment counts were used to monitor overall trends, as opposed to intersection counts, which were used to measure levels of service. The segment counts were compared with the traffic information utilized during development of the Plan, which was based on counts conducted primarily in 1998 and 1999, as well as counts conducted for Corridor Monitoring and Triggering Reports during 2000 through 2016. Average daily traffic (ADT) volumes along Route 40 are summarized in Table 2.

The Route 40 Plan anticipated that at the five locations shown in Table 2, traffic would increase by an average of about 1.8 percent per year through 2020. Current data indicate growth rates less than what was originally anticipated (See Figure 3). The volumes at these five locations are summarized in Table 2. All of the locations experienced less traffic than predicted, ranging from 15.0 to 31.4 percent below the 2016 projections. As a result, the general growth trend through 2016 is about 0.7 percent annually.

To compare current levels of service for intersections along US 40 to the levels of service used during the Plan development process, the project team conducted intersection counts during weekday peak hours at eighteen signalized intersections on US 40 in November 2016. Signalized intersections that were not counted in 2016 contain the same LOS values from 2015 and are denoted by a footnote in Table 3. Unsignalized intersections were not counted because no improvements are included at these intersections in the Plan. It is assumed that any future signalization of these intersections, whether required due to land development or traffic growth, will have to meet intersection signalization warrants as required by DelDOT.

The traffic volumes collected at the signalized intersections were analyzed in a manner consistent with the traffic impact study process used by New Castle County and DelDOT. The results of the level of service (LOS) analysis are summarized in Table 3. As indicated, five intersections had minor degradation in levels of service from 2015 and six experienced slight improvements.

- The intersection of US 40 and Glasgow Avenue north remained at a LOS D in the AM peak for the fourth consecutive year and remained at LOS D in the PM peak for the ninth consecutive year.
- The intersection of US 40 and Glasgow Avenue south improved to a LOS C in the AM peak after six consecutive years at LOS D and decreased to a LOS D in the PM peak after three consecutive years at LOS C.
- The intersection of US 40 and LaGrange Avenue remained at LOS C in the AM peak for the second consecutive year and returned to LOS C in the PM peak after improving to LOS B in 2015.
- The intersection of US 40 and SR 72 remained at LOS D in the AM peak for the third consecutive year and remained at a LOS D in the PM peak for the seventh consecutive year.
- The intersection of US 40 and Salem Church/Porter Road remained at LOS C in the AM peak and LOS D in the PM peak for the fourth consecutive year.
- The intersection of US 40 and Church Road returned to LOS D in the AM peak after improving to LOS C in 2015 and remained at a LOS C in the PM peak for the seventh consecutive year.
- The intersection at US 40 and Governor's Square remained at a LOS C in the AM peak and returned to a LOS D in the PM peak after dropping to LOS E in 2014.

Table 2. Average Daily Traffic

Location	Plan volumes (1998/1999)	2000 counts	2015 counts	Projected 2016 volumes	Actual 2016 volumes	Percentage over (under) projected	2020 forecast
East of Perch Creek Drive	34,000	29,000	37,484	45,455	37,413	-17.7%	48,000
West of SR 72	29,000	27,000	31,835	46,182	31,679	-31.4%	50,000
West of Salem Church Road	32,000	34,000	35,783	48,364	36,541	-24.4%	52,000
West of Walther Road	41,000	43,000	45,880	54,909	46,665	-15.0%	58,000
West of Wilton Boulevard	27,000	27,000	27,342	31,909	24,437	-23.4%	33,000

Figure 3. Traffic Growth along US 40 (average of five count locations)

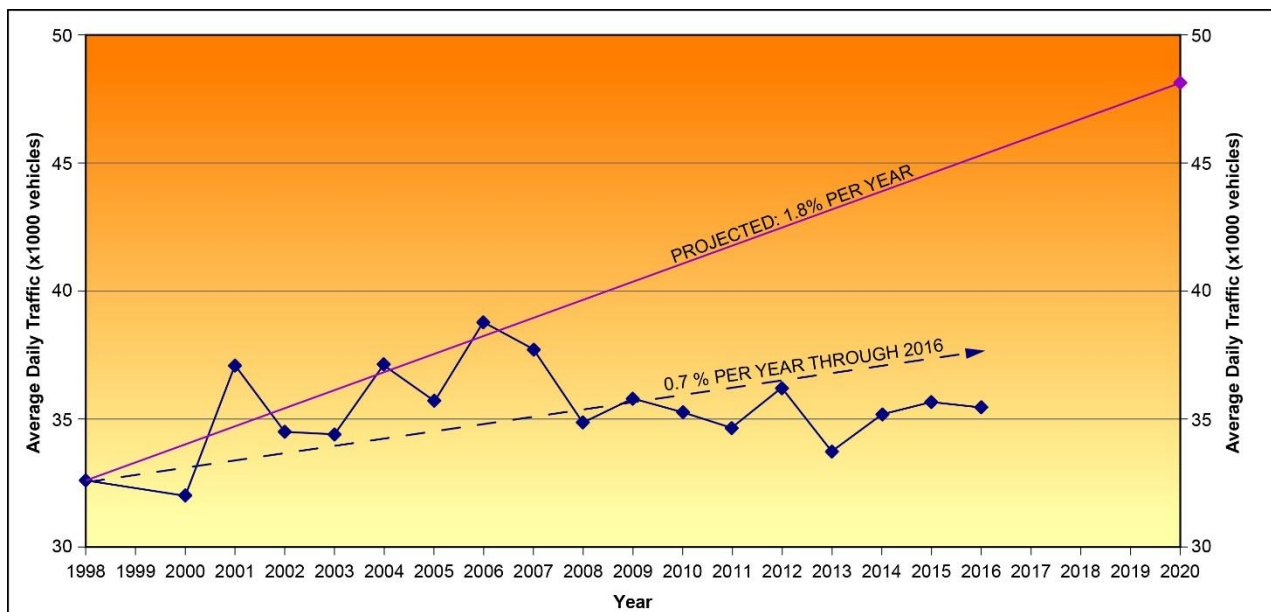


Table 3. Signalized Intersection Level of Service Summary

INTERSECTION	PEAK HOUR LEVEL OF SERVICE									
	Base (1998/1999)		2000		2015		2016		2020 without additional Plan improvements	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Frazer Road ⁴	-	-	-	-	B	B	B	B	F	C
Pleasant Valley Road ¹	C	C	C	C	C	C	C	C	E	F
Perch Creek Drive	-	-	B	A	B	B	B	B	C	C
Biddle Avenue north ²	-	-	-	-	A	A	A	A	-	-
Biddle Avenue south ²	-	-	-	-	B	B	B	C	-	-
Peoples Plaza north	B	C	A	B	A	A	A	A	A	A
Peoples Plaza south	B	B	B	C	B	C	B	C	C	D
Glasgow Avenue north	C	C	C	C	D	D	D	D	C	E
Glasgow Avenue south	C	D	B	C	D	C	C	D	D	D
SR 896	D	D	D	E	D	D	D	E	F	F
LaGrange Avenue	-	-	-	-	C	B	C	C	B	C
SR 72	D	D	E	E	D	D	D	D	E	E
Scotland Drive ⁴	C	B	B	B	C	C	C	C	C	C
Becks Woods Drive ^{3,4}	-	-	-	-	B	B	B	B	-	-
Salem Church/Porter Road	C	C	D	D	C	D	C	D	D	F
Glasgow Drive ⁴	-	-	-	-	B	B	B	B	-	-
Brookmont Drive ⁴	B	B	B	B	B	B	B	B	B	B
Church Road	D	C	D	C	C	C	D	C	C	C
Walther Road	C	D	D	D	D	D	D	C	C	C
Governors Square	B	C	C	C	C	E	C	D	C	D
SR 7/Eden Square	E	D	E	D	D	C	C	C	D	E
SR 1SB Ramps ⁴	A	A	A	A	A	A	A	A	B	C
SR 1NB Ramps ⁴	B	B	B	A	A	B	A	B	E	C
Buckley Boulevard	-	-	B	B	C	C	C	C	B	C
School Bell Road ⁴	B	B	C	A	A	A	A	A	A	A
Wilton Boulevard ⁴	B	B	C	C	B	C	B	C	B	C
US 13	D	B	C	B	B	D	B	C	F	F

Note: Red denotes a worse level of service than 2015; green denotes improvement in level of service over 2015.

¹ Entrance to Royal Farms (south leg) was completed in 2012.

² Traffic signal was installed at US 40 and Biddle Avenue in 2013

³ Traffic signal was installed at US 40 and Becks Woods Drive in 2013.

⁴ These intersections were not counted during 2016; numbers reflect count data from 2015

To assess the validity of the plan beyond its original horizon year of 2020, an analysis of projected 2030 traffic volumes was conducted in 2009. DelDOT's travel demand model was used to forecast traffic along Route 40 and side streets. These future daily volumes were converted to peak hour turning movement forecasts. A level of service analysis was then conducted to determine how well the improvements in the Plan will perform in 2030.

Due to lower than expected traffic growth, most of the improvements proposed in the Plan will not only continue to work in 2020, but will accommodate forecast 2030 traffic as well. Plan improvements at the following locations are expected to be sufficient for 2030 traffic:

- US 13 interchange (to replace an existing signal)
- Wilton Boulevard
- School Bell Road
- Buckley Boulevard
- SR 1 interchange
- SR 7 interchange (to replace existing signals at SR 7, Eden Square, and the Governors Square/Glendale Plaza entrance)
- Walther Road
- Church Road
- Brookmont Drive
- Glasgow Drive
- Scotland Drive
- SR 72
- Lagrange Avenue/Glasgow Park
- SR 896 interchange (to replace an existing signal)
- Peoples Plaza (two intersections)
- Perch Creek Drive

There are some locations where, due to changes in traffic patterns, Plan improvements are not forecast to be sufficient to address anticipated traffic in 2030. These locations include the following.

- **Salem Church Road/Porter Road:** Due to higher side street volumes than originally anticipated in the Plan, Route 40 may need to be widened to four through lanes in each direction, rather than the three noted in the Plan, to maintain level of service D. However, the intersection will barely drop below level of service D with three through lanes in each direction.
- **Glasgow Avenue (two intersections):** Due to higher volumes than originally anticipated in the Plan, Route 40 may need to be widened to three

through lanes in each direction to maintain level of service D. The Aikens Tavern historic district abuts three corners of the intersection, making widening along the existing alignment challenging. Alternative solutions to reduce or accommodate future traffic demand should be considered.

- **Pleasant Valley Road:** Due to higher volumes than originally anticipated in the Plan, as well as the addition of a south leg to the intersection, Route 40 may need to be widened to three through lanes in each direction to maintain level of service D. An additional eastbound left turn lane may also be needed by 2030.
- **Frazer Road:** Due to higher volumes than originally anticipated in the Plan, Route 40 may need to be widened to three eastbound through lanes to maintain level of service D.

Because most of the additional improvements needed by 2030 are in the portion of the corridor west of SR 896, strategies to reduce travel demand should be considered either in addition to or in lieu of roadway widening. Transit could also play an increased role in addressing future traffic congestion challenges in this area.

Highway Safety

Review of Conditions in 2016

Each year, the project team coordinates with DelDOT Traffic Safety to request the annual crash report summary for the Route 40 Corridor. In addition, to reviewing the annual summary, the project team coordinates with DelDOT's statewide Highway Safety Improvement Program (HSIP) to identify any locations that are currently under study. DelDOT's statewide HSIP includes several categories of transportation safety throughout the state. One of those categories is the Hazard Elimination Program (HEP), which involves reviewing statewide crash rates and selecting approximately 15 sites for study. The 2016 HEP list included two sites within the Route 40 corridor, Site J and Site L, which were analyzed in conjunction with each other. The recommendations from the HEP review team and status of implementation are summarized below:

Site J – SR 7 from 0.09 miles south of Bear Road to 0.13 miles north of Songsmith Drive.

Site L – US 40 from 0.22 miles east of Glendale Boulevard to 0.07 miles west of SR 1.

- The HEP committee recommends the signalization of the NB and SB SR 7 right-turn

movements to reduce the frequency of right-turn rear end crashes. They also recommend considering the installation of a crosswalk across the west leg of US 40 at Governors Square if DTC cannot relocate the nearside bus stop.

- Assess the long-term feasibility of grade separation at US 40 at SR 7.
- Additional studies recommended by the HEP committee include evaluating the benefits of, and impacts associated with, converting NB/SB SR 7 at Songsmith Drive to flashing red arrow or protected-only left-turn phasing.
- There is an on-going US 40 Pedestrian Safety Study along US 40 from SR 72 to Buckley Boulevard.

The goal of this report with respect to safety is to identify intersections where reported crash totals from the annual summary increased significantly (>50%) compared to the previous five-year average, identify the possible reasons for those increases, and consider those sites for detailed study and improvement recommendations.

Table 4 shows the number of reported crashes annually at selected intersections from 2012-2016. The 2016 crash totals were compared to the previous five year average to determine if there was an increase of greater than 50 percent. It is important to note that these totals are approximated based on raw crash data summaries and not the actual reports. The number of crashes is determined based on the DelDOT mile posts at a particular intersection along US 40 and includes all crashes listed within 0.10 miles of the intersection. These numbers may vary upon review of the detailed crash reports.

Upon reviewing the crash data, there are seven intersections where the 2016 reported crash total is more than 50 percent higher than the previous five year average. Based on the reported crash totals for 2016, detailed crash reports will be requested and reviewed at the following intersections to determine potential crash patterns:

- Route 40 at Frazer Road
- Route 40 at Perch Creek Drive
- Route 40 at LaGrange Avenue
- Route 40 at Becks Woods Drive
- Route 40 at SR 1 SB
- Route 40 at SR 1 NB
- Route 40 at Buckley Boulevard

After reviewing the crash data, any crash patterns identified will be evaluated to determine the need for further study.

Pedestrian and Bicycle Safety

During 2016 in the Route 40 corridor, a total of 13 reported crashes involved pedestrians and two involved bicyclists. Nine of the 13 reported pedestrian crashes resulted in personal injuries and one resulted in a fatality. Both pedestrian crashes resulted in personal injuries. The fatal pedestrian crash involved a pedestrian crossing at an unmarked, lit location at night in the vicinity of Church Road. The pedestrian was under the influence and suffered fatal injuries. Of the nine pedestrian crashes resulting in personal injuries, four occurred at dark unlit locations, three occurred at night at a lit location, and two occurred during daylight hours. One pedestrian crash resulting in personal injury was due to driver error and one crash resulted in no citations due to lack of an independent witness; all remaining pedestrian crashes involving personal injury resulted from pedestrian error.

Previous Safety Studies

Based on the reported crash totals for 2015, detailed crash reports were requested and reviewed at the following intersections.

- **Route 40 at Peoples Plaza** – A total of 11 crashes were reported between January 2015 and December 2015, including four (36 percent) rear end crashes, 4 sideswipe crashes, 2 angle crashes, and one fixed object crash. Three crashes, 2 angle crashes and 1 rear end crash, resulted in injuries. No significant crash patterns were identified and no additional studies are recommended.
- **Route 40 at Glasgow Avenue** – Based on a review of the reports, a total of 17 crashes were reported between January 2015 and December 2015, including nine (53 percent) rear end crashes, five sideswipe crashes, two angle crashes, and one fixed object crash. One crash resulted in personal injuries. The two angle crashes resulted from SB vehicles disregarding the traffic signal at Route 40. No significant crash patterns were identified and no additional studies are recommended.
- **Route 40 at 896** – A total of 49 crashes were reported between January 2015 and December 2015, including 26 (53 percent) rear end crashes, 18 angle crashes, and five sideswipe crashes. There were six reported injuries, all related to angle crashes. Project development is underway to address safety and capacity issues at the

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intersection. No additional studies are recommended.

- **Route 40 at Brookmont Drive** – Based on a review of the reports, a total of 22 crashes were reported between January 2015 and December 2015, including thirteen (59 percent) rear end crashes, six angle crashes, one sideswipe crash, and two crashes involving a pedestrian. Six crashes resulted in personal injuries. Seven of the thirteen rear-end crashes involved WB traffic, four of which occurred during dark-lit or unlit conditions. One pedestrian crash involved a vehicle that was rear ended and pushed forward striking a

pedestrian who was in a crosswalk and resulted in personal injuries. The other pedestrian crash occurred during dark-lit conditions when an EB vehicle struck a pedestrian in a crosswalk. The crash was a hit-and-run and involved injuries. It is unknown if the pedestrian was walking against the pedestrian signal. Eight (36 percent) of crashes occurred during dark-lit or unlit conditions. HEP committee recommendations for 2015 Site L include lighting improvements that will extend through Brookmont Drive; these improvements will be installed during FY 2017. No significant crash patterns were identified in the reports and no additional studies are recommended.

Table 4. Intersection Crash Data Summary

INTERSECTION	NUMBER OF REPORTED CRASHES				
	2012	2013	2014	2015	2016
Frazer Road	7	6	5	9	16
Pleasant Valley Road	17	21	17	25	12
Perch Creek Drive ¹	8	14	11	10	19
Peoples Plaza	7	10	7	12	13
Glasgow Avenue	29	33	27	17	21
SR 896	38	29	30	53	49
LaGrange Avenue	6	16	11	13	17
SR 72	34	42	27	51	42
Scotland Drive	21	26	30	29	23
Becks Woods Drive ³	-	9	7	6	13
Salem Church/Porter Road	31	40	27	35	38
Glasgow Drive ²	15	26	16	10	13
Brookmont Drive	5	8	17	23	16
Church Road	31	18	26	29	31
Walther Road	19	12	20	17	23
SR 7	56	41	58	49	54
SR 1 SB	11	8	7	9	13
SR 1 NB	6	2	6	7	10
Buckley Boulevard	9	9	8	8	15
School Bell Road	3	5	5	6	3
Wilton Boulevard	10	22	9	16	11

¹A fourth leg (north) was constructed in 2010 as part of the LaGrange Development.

²A traffic signal was installed at Route 40 and Glasgow Drive in November 2009.

³A traffic signal was installed at Route 40 and Becks Woods Drive in early 2013.

Transit Service

Comparing transit ridership numbers in 2016 with those of 2015, statewide ridership decreased over nine percent while ridership in the US 40 corridor decreased nearly ten percent. In the previous year, statewide ridership decreased nearly seven percent while ridership in the US 40 corridor decreased nearly four percent.

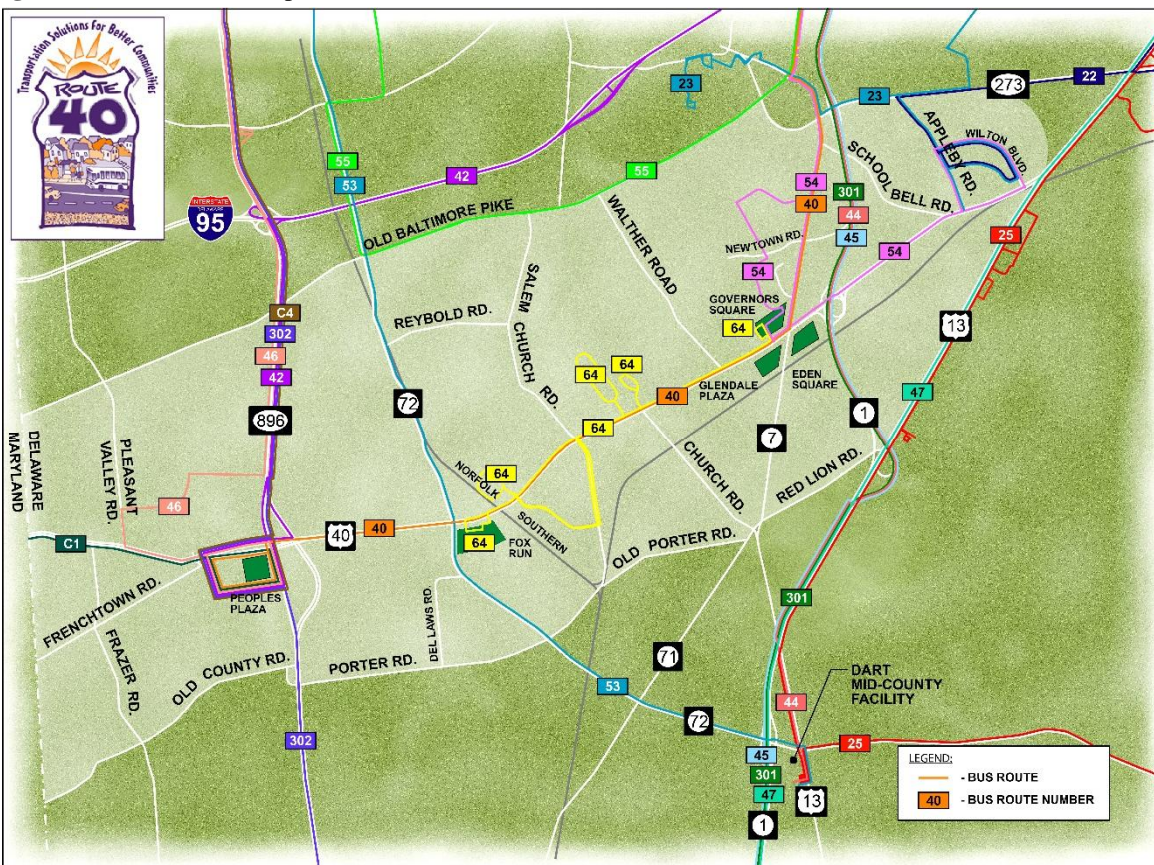
Statewide ridership has decreased over thirteen percent during the past five years, from 2012 through 2016. Ridership in the Route 40 corridor also decreased over ten percent during the past five years, from 2012 through 2016. Fare increases are at least partially responsible for these changes.

All six routes in the corridor saw a decrease in ridership numbers in 2016. Ridership on bus route 55 decreased over 19 percent in 2016 and has decreased over 21 percent since 2012. Ridership on bus route 54 decreased over 15 percent in 2016 and has decreased nearly 14 percent since 2012. Ridership on route 64 decreased over 13 percent in 2016 and has decreased over 20 percent since 2012. Ridership on bus route 41 decreased over 12 percent in 2016 and has decreased

over 11 percent since 2012. Route 42 decreased over five percent in 2016 and Route 40 decreased over one and a half percent in 2016. See Figure 4 for route locations.

Multi-stage, statewide fare increases continued in 2016 and new fares went into effect in February for fixed route service and July for paratransit. In June statewide service changes went into effect, including changes to routes 40, 41, 42, 54, and 55. Route 41 trips were reallocated to Route 40, and Route 42 service to Pencader Corporate Center was discontinued. Other changes to routes included minor time and service changes to improve on-time performance. Additional changes to Route 40 and Route 55 went into effect in December 2016. Changes to Route 40 included the addition of four new express trips to weekday rush hour service between Peoples Plaza and downtown Wilmington to address overcrowding. Changes to Route 55 included the modification of a weekday AM trip to extend service to downtown Wilmington. Route 302 was added to provide service between Newark and Dover and future facility improvements include additional bike racks, lighting, and stops along SR 72.

Figure 4. Transit Route Map



Project Status

Plan Projects

During 2016, there were three active projects in the corridor that were part of the original Plan: US 40 at SR 72, US 40 widening from Salem Church Road to Walther Road, and the US 40/SR 896 interchange. Figure 5 shows the status of Plan projects in the corridor as of the end of 2016. Detailed descriptions of all active projects are provided below.

US 40 at SR 72

This project includes the addition of a through lane along northbound and southbound SR 72 to provide adequate storage and taper lengths and the addition of left-turn lanes along eastbound and westbound US 40. Del Laws Road will be realigned to reduce the existing skew and align it with the future proposed access to the Fox Run Business Center; a traffic signal will also be installed at the intersection. Pedestrian and bicycle facilities will also be constructed. Semi-final construction plans were submitted in April 2014 and final design will be complete in spring 2017. Right-of-way acquisition has begun and construction is scheduled to begin in fall 2017.

US 40 Widening, Salem Church Road to Walther Road

The US 40 Third Lane Widening from Salem Church Road to Walther Road began concept design in 2016. Environmental documents should be complete in 2017 and final design could begin in 2017. The schedule for final design and construction has not been established.

US 40 at SR 896 Interchange

Project development to address safety and congestion issues began in 2016. A final design or construction schedule has not been established.

Other Projects in the Corridor

SR 71, Old Porter Road to SR 7

This project was originally identified as part of the 2008 HEP and includes some components of the Old Porter Road improvements in the Route 40 Plan. This project proposes to install a traffic signal at SR 71 and Old Porter Road; convert Church Road to one-way eastbound east of the residential driveway east of SR 71; and widen the intersection of SR 7 and SR 71 to provide separate left-turn, through and right-turn lanes on the northbound and southbound SR 7 approaches and the southbound SR 71 approach. Protected-only

left-turn phasing will also be provided on all four approaches at SR 71 and SR 7.

Final design was completed in spring 2016 and construction is expected to begin in summer 2017.

US 40 and SR 7 Pedestrian Improvements

This project was originally identified as part of the 2010 HEP due to the lack of pedestrian accommodations at US 40 and SR 7. The proposed improvements include installing signalized pedestrian crossings at the north and south legs of the intersection as well as constructing sidewalk connections along both sides of SR 7 from US 40 to south of Songsmith Drive, along the south side of US 40 from SR 7 to west of Wawa, and along the north side of US 40 from SR 7 to Governors Square Shopping Center.

Final design is scheduled to be complete in fall 2017, right-of-way acquisition is expected to begin in late 2017, and construction could begin in spring 2018.

SR 72 at Old Baltimore Pike

This project was originally identified as part of the 2011 HEP. The proposed improvements include restricting eastbound left turns from Old Baltimore Pike into Royal Farms and signal modifications at SR 72. To improve eastbound left-turn capacity at SR 72, a double left-turn lane with eastbound lead/westbound lag left-turn phasing is also proposed.

Final design and right-of-way acquisition are complete and construction is expected to begin in summer 2017.

Old Baltimore Pike at Salem Church Road

This project was originally identified as part of the 2009 HEP. The proposed improvements include removing existing concrete medians and restriping Old Baltimore Pike to provide double left-turn lanes at the approaches to Salem Church Road (east) / Salem Woods Drive and Salem Church Road (west).

Final design is scheduled to be complete in early 2017. Right-of-way acquisition is expected to begin in fall 2017 and construction could begin in summer 2018.

Other Projects in the Region

As noted in previous Corridor Monitoring and Triggering Reports, future regional projects may have an impact on the Route 40 corridor. The status of these projects is summarized below.

US 301 Mainline: The alignment for a new limited-access US 301 from the Maryland state line to the south end of the Roth Bridge was approved by the Federal Highway Administration in April 2008. Final design began in late 2008 and was completed in 2014. The project was divided into seven construction contracts that will be completed simultaneously. Construction began in 2016 and is expected to be open to traffic in 2019.

SR 1 widening, Roth Bridge to SR 273: Planning has begun for widening (from four to six lanes) and pavement reconstruction along this segment of SR 1. Environmental studies are underway and preliminary design alternatives are being developed. Implementation will be phased over many years.

SR 72, McCoy Road to SR 71: This project proposes to widen SR 72 from two to four lanes between McCoy Road and SR 71. Multimodal improvements, including shoulders to accommodate bicycles and new sidewalks are also planned. Due to inconsistencies discovered within the existing field survey, DelDOT decided to re-survey the corridor to ensure accuracy in design. The new survey was completed in February 2017 and re-design of the corridor has begun. Utility relocation and drainage construction is expected to begin in fall 2018 and the roadway widening could begin in fall 2019.

Figure 5. Project Status



TRIGGERING

Assessment of Monitored Conditions

Traffic congestion did not change substantially in 2016. Levels of service were acceptable for all intersections that were counted in 2016 except for SR 896. SR 896 experienced a failing level of service during the PM peak hour after seven years at LOS D. Sixteen years of traffic data confirm that overall growth rates are still significantly lower than originally anticipated by the Plan.

During 2016, there were 25 new development plans submitted to New Castle County for review in the Route 40 corridor. Review of eight major developments proposed before 2016 continued this year. Among those plans, two (Newtown Square and Troy Granite) were recorded during 2016.

There were two sites located within the Route 40 Corridor on the 2016 HEP list, US 40 from Glendale Boulevard to SR 1 and SR 7 from Bear Road to Songsmith Drive. Crash reports will be reviewed at seven intersections.

Comparing transit ridership numbers in 2016 with those of 2015, statewide ridership decreased over nine percent while ridership in the US 40 corridor decreased nearly ten percent. Route 41 was discontinued, reallocating trips to Route 40, and Route 42 service to Pencader Corporate Center was discontinued. Other changes to routes included minor time and service changes to improve on-time performance.

There are no regional highway or transit projects planned that would trigger the need for improvements in the corridor. It is anticipated that the US 301 construction could have an impact to traffic along Route 40

Recommendations

General

Continue to identify funding sources to implement as many of the recommendations below as possible and restore projects that have been placed on hold.

Land development

- Continue to monitor development activity to ensure compatibility with the Plan and maintain consistent developer contributions to transportation improvements.
- Monitor developer agreements for major land developments to ensure the compatibility of developer-sponsored improvements with the Plan.

Corridor preservation

- Continue pursuing corridor preservation opportunities through the site review team process.

Highway safety

- Review crash data summary to identify any locations with significant increases in crash rates in 2016.

Transit

- Identify existing bus stops where improvements are needed – damaged shelters, need for lighting, access and sidewalk reconstruction.
- Continue to track ridership in the corridor and provide service enhancements where appropriate.
- Continue participation in the site review team to identify opportunities for developer-funded transit improvements such as bus service expansion, bus stop improvements, transit oriented development, and innovative trail projects throughout the Route 40 Corridor.

Planning, design, and construction

- Continue final design for the US 40 / SR 72 intersection improvements
- To the extent funding can be made available, establish schedules for the following projects that are on hold.

PUBLIC INVOLVEMENT

Activities During 2016

There were no public involvement initiatives during 2016 due to funding constraints.

The project website, which was reformatted in 2011 to match the current DelDOT standard, is updated annually to provide the latest information on implementation of the Plan. The site contains information from newsletters, updates on project planning, design, and construction, and a schedule of public meetings and workshops. The site can be accessed from the DelDOT Web site at:

<http://www.deldot.gov/information/projects/rt40/index.shtml>

Activities Planned For 2017

To ensure the community is kept up to date and involved in the progress of transportation improvements in the Route 40 corridor, the project team will continue the following communications initiatives for 2017:

Website - The Route 40 corridor project website will continue to be maintained and updated on a regular basis.

Public workshop - If funding is in place to make significant progress on Plan implementation in 2017, a summer public workshop could be held, most likely as a virtual public workshop. Interested stakeholders (the CMC, former Route 40 Steering Committee members, elected officials, civic associations and residents on the mailing list) will receive notice of that workshop.

E-mail, project mailing address and telephone hotline - Residents will still be able to communicate with the project team through various channels—email, mailing address, or telephone.



Whitman, Requardt & Associates, LLP
Engineers Architects Environmental Planners Est. 1915

1013 CENTRE ROAD, SUITE 302
WILMINGTON, DELAWARE 19805
302-571-9001
WRALLP.COM