

North Seven Master Plan
Zone Change Application
Norwalk, Connecticut

Traffic Impact Study

Building and Land Technology
Stamford, Connecticut

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Section 1

Introduction

This Traffic Study evaluates future traffic operations of the roadway network in northern Norwalk to assess the impact of a potential North Seven Master Plan (the Master Plan) following a zone-change to the Master Plan parcels. The Master Plan is to be developed by Building and Land Technology (BLT) along the west side of Glover Avenue. The development site (the Site) consists of multiple parcels, which encompass approximately 16.35 acres, that will be zoned Executive Office (EO) following the proposed zone-change approval. The Site is bordered by U.S. Route 7 to the west, Grist Mill Road to the north, and extends to Oakwood Avenue to the south. Figure 1 shows the Site location relative to the surrounding roadway network.

The North Seven Master Plan includes a potential development plan of approximately 27,865 square feet of retail space and 1,303 residential units with approximately 2,154 parking spaces. The Site would be accessed by stop-controlled driveways along the west side of Glover Avenue. The development could be completed by 2025.

This traffic study concludes that supportive roadway improvements that are planned by others for the study area transportation system are expected to mitigate existing capacity issues as well as provide additional capacity to accommodate future traffic volumes associated with the North Seven Master Plan. In addition to the analyses presented in this Study, it is important to note that, following an approval of the proposed zone change, each subsequent implementation phase of the North Seven Master Plan would be assessed to determine potential traffic impacts on a phase-by-phase basis. Conducting traffic analyses for future conditions at the time of development and regulatory review will further refine the analyses presented in this Study. The refined analyses will result in a more accurate assessment of real-time traffic operations and conditions in the study area when the scope of the roadway improvement projects are better known and when actual site-by-site based traffic flows can be assessed rather than compounding assumed trip generation based on theoretical data and forecasts.

Section 2

Existing Conditions

The approximately 16.35-acre Site is located along the west side of Glover Avenue between Oakwood Avenue and Grist Mill Road and is bounded by U.S. Route 7 to the west. The Site is largely vacant to the north with some commercial storage space and parking lots. To the south, the Site contains several buildings with a mix of commercial and light industrial uses. The Site features several access points to Glover Avenue, including wide non-delineated access along the industrial properties to the south. The Site currently falls within three zoning districts including AAA Residence (AAA), Business No 2 (B2) and Executive Office (EO) as shown in Figure 2.

2.1 Study Area Intersections

The study area intersections were selected based on a review of the likely access routes to the Site, as well as the study area included in the Grist Mill Village Traffic Study prepared by Fuss & O'Neill that was approved by the City and State. The following intersections make up the study-area intersections:

- Grist Mill Road at U.S. Route 7 Expressway
- Grist Mill Road at Glover Avenue
- Grist Mill Road at Main Avenue and CT DMV Driveway
- Main Avenue at Glover Avenue, Creeping Hemlock Road, Merritt Parkway (Route 15) Southbound Ramps
- Main Avenue at New Merritt Parkway Ramp Configuration (Created by the Route 7/15 Interchange Project – See Section 3.3)
- U.S. Route 7 at Merritt Parkway (Route 15) Interchange (Created by the Route 7/15 Interchange Project - See Section 3.3)

The intersection of Grist Mill Road at U.S. Route 7 operates under signalized control. Grist Mill Road runs east to west and the terminus of the U.S. Route 7 expressway intersects it from the south before turning east and overlapping with Grist Mill Road towards Main Avenue. The Grist Mill Road east and westbound approaches to the intersection each provide an exclusive turn lane onto the U.S. Route 7 expressway as well as a combined through and turn lane. The U.S. Route 7 northbound approach provides one exclusive left-turn lane and two right-turn lanes.

Grist Mill Road intersects Glover Avenue at a signalized intersection located 350 feet east of the intersection with the U.S. Route 7 Expressway. Grist Mill Road provides two through lanes as well as one exclusive turn lane onto Glover Avenue on each approach. The northbound approach from Glover Avenue provides an exclusive left-turn lane as well as a shared left and right-turn lane. The Glover Avenue at Grist Mill Road intersection may be combined with the Grist Mill Road and Route 7 expressway intersection under a future roadway improvement project (See Section 3.3 for more details).

From the intersection with Glover Avenue, Grist Mill Road continues east before terminating at a signalized intersection with Main Avenue, which runs north to south. Additionally, the intersection has a westbound approach from the Department of Motor Vehicles (DMV) driveway. Grist Mill Road and the southbound approach from Main Avenue carry the U.S. Route 7 designation through this intersection while the northbound approach is designated as State Route 719. The eastbound Grist Mill Road approach provides an exclusive left, exclusive right, and a shared left-through lane. Main Avenue northbound provides an exclusive left and a through-right lane, while the southbound approach contains one left, one through, and one right-turn lane. The DMV driveway allows for egress via a left-through and a right-through lane.

Main Avenue, Glover Avenue, Creeping Hemlock Road, and the Merritt Parkway Southbound Ramps intersect at a signalized intersection. Main Avenue, designated as State Route 719 in this area, runs north / south. Glover Avenue intersects from the west while Creeping Hemlock Road, which also provides access to the Merritt Parkway Southbound Exit 40B ramps, approaches from the east. The Merritt Parkway Southbound Exit 40A entrance ramp forms a fifth leg to the intersection that runs southwest towards the Merritt Parkway. Just to the south, the Exit 40A off-ramp intersects Main Avenue and allows stop-controlled right-turn only egress onto Main Avenue southbound. The Main Avenue northbound and southbound approaches to the intersection provide one exclusive right-turn lane, a through lane, and a shared left-through lane. The eastbound approach from Glover Avenue provides an exclusive right-turn lane in addition to a shared left-through lane. Creeping Hemlock Road provides exclusive left and right-turn lanes as well as a shared right-through lane on the westbound approach.

The Route 7/15 Interchange Project, State Project Number (SPN) 102-398, proposes to reconfigure the Merritt Parkway interchange with Main Avenue. In addition, new intersections between U.S. Route 7 and the Route 15 Ramps D and SE may be created under Alternative 26 of the project. Further detail on the scope of these improvements is provided in Section 3.3.

2.2 Roadways

The following sections detail the roadways in the study area.

2.2.1 Grist Mill Road

Grist Mill Road runs east to west for 0.16 miles from Belden Hill Road/North Seir Hill Road to Main Avenue (U.S. Route 7/State Route 719) and carries the U.S. Route 7 designation east of the U.S. Route 7 expressway intersection. The road serves as a connection for several major thoroughfares utilized for regional access. CTDOT classifies Grist Mill Road as an urban minor arterial west of the U.S. Route 7 expressway and as an urban principal arterial to the east. Within the study area, the road typically provides one to two through travel lanes in each direction with exclusive turn lanes at the U.S. Route 7 Expressway and Glover Avenue intersections. The majority of its length contains a painted median. The posted speed limit on Grist Mill Road is 25 miles per hour (mph).

2.2.2 U.S. Route 7

U.S. Route 7 runs from Interstate 95 Exit 15 in Norwalk north through western Connecticut to the Massachusetts state line in North Canaan. At the south end of the study area, it is classified as an urban expressway by CTDOT before turning east at Grist Mill Road where it becomes an urban principal arterial roadway. It maintains this

classification as it continues onto Main Avenue heading to the north. U.S. Route 7 is a major thoroughfare for regional users and has a partial access interchange with the Merritt Parkway at the south end of the study area. The expressway portion of the roadway is two lanes wide in each direction and widens to three lanes northbound at the terminus with Grist Mill Road. A 40'± landscaped median with metal beam guiderail separates north and southbound traffic. Farther south, the median transitions into a concrete median barrier. U.S. Route 7 has a posted speed limit of 55 mph along the expressway portion. Northbound traffic is slowed to 40 mph in advance of the intersection with Grist Mill Road.

2.2.3 Glover Avenue

Glover Avenue is an approximately 1.25-mile roadway that connects Grist Mill Road at the north end to Main Avenue at the south end. The roadway provides access to both commercial and residential properties as well as the Merritt 7 Metro North Railroad Danbury Line station. CTDOT classifies the roadway as an urban collector. Glover Avenue provides a single travel lane in each direction. At some business driveways, as well as at both termini, the roadway widens to provide additional turn lanes. The posted speed limit along Glover Avenue varies between 25 and 35 mph.

2.2.4 Main Avenue

Main Avenue runs from State Route 123 (New Canaan Avenue & Main Street) to the south to the Wilton town line to the north where it transitions to Danbury Road. The portion south of Grist Mill Road is designated as State Route 719 while the portion to the north is U.S. Route 7. It intersects with Glover Avenue and provides access to the Merritt Parkway at the south end of the study area. CTDOT classifies the State Route 719 portion of the roadway as an urban minor arterial and the U.S. Route 7 portion as an urban principal arterial. Main Avenue has two travel lanes in each direction and widens at intersections to provide additional turn lanes. Within the study area, the posted speed limit on Main Avenue is 35 mph.

2.2.5 Merritt Parkway (State Route 15)

The Merritt Parkway (State Route 15) is classified by CTDOT as an urban expressway that runs north to south from the New York state line in Greenwich to the Sikorsky Memorial Bridge in Stratford, where the roadway becomes the Wilbur Cross Parkway. The Merritt Parkway runs in an east-west direction intersecting the study area in the south end. It provides regional access to the cities along Connecticut's southwestern coast and Westchester County in New York State to the west. It connects with U.S. Route 7 in a partial interchange and with Main Avenue at exits 40A and 40B at the intersection with Glover Avenue. The Merritt Parkway is a median-separated highway with two travel lanes in each direction. The posted speed limit on it is 55 mph.

2.3 Traffic Volumes

The study analysis focuses on the weekday morning and weekday afternoon peak periods when traffic volumes within the study area are at their highest levels. Traffic volumes were developed for the 2025 Background and, subsequently, 2025 Combined Conditions (discussed in detail in Sections 3.2 and 4.3, respectively) based on traffic volume data available from planned/on-going CTDOT improvement projects and recently approved and/or constructed major developments in the area. The available traffic volume data shows that the weekday morning peak hour occurs from 7:30 AM to 8:30 AM and the weekday afternoon peak hour occurs from 5:00 PM to 6:00 PM.

In order to investigate trends in vehicular traffic volume over time, historic Average Daily Traffic (ADT) from CTDOT triennial count stations was analyzed from 1996 to 2020. The data shows that ADT was growing in the early 2000's before slowing and eventually decreasing during the 2008 recession. Following the recession, volumes rebounded and began moderately increasing when economic activity increased. With the onset of the COVID-19 pandemic, traffic volumes showed a decline in 2020 compared to previous data. It is expected that the decline in traffic during 2020 will be short-term and the analyses within this study are based upon data collected prior to the impact of the pandemic under the conservative assumption that traffic volumes will completely recover following the conclusion of the pandemic.

Automatic Traffic Recorder (ATR) counts conducted for Glover Avenue south of Grist Mill Road along the site frontage in 2020 showed that the weekday ADT volume on Glover Avenue was 2,400 vehicles. The ATR data also showed that the 85th percentile speed, also known as the operating speed of the roadway, was 23 miles per hour in both directions. Given that the 2020 data was taken during the COVID-19 epidemic, ADT from 2017 was used for comparison. In 2017, the ADT on Glover Avenue was higher than 2020 data showed at 3,700 daily trips. The ATR data and historic ADT data summary can be found in Appendix A.

2.4 Collision History

Vehicle collision history for the five-year period between 2016 through 2020 was collected from the Connecticut Crash Data Repository for the study area intersections. Table 1 provides a summary of the collisions within the study area including type, severity, and location. Appendix B includes detailed collision summaries for each of the intersections.

As shown in Table 1, there were 372 motor vehicle collisions reported in the study area within the five-year period analyzed. Crashes at the Grist Mill Road and U.S. Route 7 intersection occurred most frequently with 131 collisions, accounting for about 35% of the reported total. The Grist Mill Road at Main Avenue intersection experienced the second highest number of collisions at 111, accounting for nearly 30% of the reported total. The intersections of Main Avenue at Glover Avenue and Grist Mill Road at Glover Avenue each experienced 17.5% of the total collisions, with 65 collisions reported.

The most frequent type of crash was rear-end. These accounted for over 50% of the total collisions within the study area. The second most frequent collision type was same-direction sideswipe, which accounted for nearly one quarter of collisions. Angle collision types were the third most frequent at around 12%. The remaining collisions were a mix of fixed and non-fixed object, head-on, backing, opposite-direction sideswipe, and other/unknown crash types, each accounting for less than 5% of the total collisions.

Throughout the period analyzed, there were no fatalities and one collision reported serious personal injuries.

The collision analysis results do not identify a significant or notable pattern or frequency of collisions in the study area. In addition, future roadway improvements planned by CTDOT, detailed in Section 3.3, are expected to reduce congestion and improve traffic safety within the study area.

Section 3

Background Conditions

The Background Condition represents the analysis of traffic volumes and operating conditions for the potential completion year of the development, assuming that the development is not yet constructed. This scenario will serve as a basis for evaluating potential future development. The Background Condition considers the general background growth of traffic and site-generated traffic associated with other planned and/or approved developments proximate to the Site that are expected to open prior to the opening of the Site. The Background Condition analyses utilizes the roadway geometry and traffic controls from planned roadway improvement projects (See Section 3.3). The North Seven development could potentially be completed by 2025; therefore, this was selected as the Background Condition year.

3.1 Planned/Recently Approved Developments

The City of Norwalk Zoning Commission meetings minutes were reviewed and OSTA was contacted to determine if there were any pending or recently approved developments that would generate traffic or if there were any planned roadway improvements in the study area. Four developments were identified as follows:

- Grist Mill Village Residential Development (approximately 715 apartment units adjacent to the Site) – OSTA No. 102-1509-01
- Grist Mill Village Expansion (44 apartment units and 3 hotel units) – OSTA No. 102-1812-01
- The Village Commercial Development (96,280 SF mixed-use at 272-280 Main Avenue) – OSTA No. 102-1612-01
- The SoNo Collection Retail Development (1,118,329 SF mixed-use located near the U.S. Route 7 and Interstate 95 interchange) – OSTA No. 102-1601-01

3.2 Background Traffic Volumes

The background volumes represent the projection of existing traffic volumes based on the general growth of traffic volumes on the public roadways over time as well as trips generated by the planned/recently approved and not yet constructed developments. Background traffic volume information was provided by CTDOT from State Project Numbers (SPN) 102-358 and PP102-020. These volumes included site-generated traffic from the developments listed in Section 3.1, with the exception of the Grist Mill Village Expansion. The site-generated traffic volumes from minor Grist Mill Village expansion were incorporated into the 2025 Background Condition traffic volumes illustrated in Figures 3 and 4. Figures 3 and 4 represent the traffic volumes under the two current alternatives for SPN 102-358, Alternatives 21D and 26, respectively (See Section 3.3 and Appendix C for more information). The CTDOT Bureau of Policy and Planning was consulted and have approved the background traffic volumes.

3.3 Planned Future Off-Site Roadway Improvements

To mitigate the current and projected future traffic congestion issues in northern Norwalk, CTDOT and the City of Norwalk are actively pursuing several, significant traffic and roadway improvement projects within the area. The projects are expected to incorporate potential traffic volumes from upcoming and planned local development projects, including the North Seven Master Plan, to ensure acceptable future traffic operations. The following sections outline the planned improvement projects that encompass improvements to each intersection within the study area. These improvements are incorporated into the 2025 Background Condition traffic analyses for this study with the results detailed in Sections 3.4 and 3.5.

U.S. Route 7 & Route 15 Interchange Reconstruction (SPN 102-358)

CTDOT is currently in the Environmental Documentation planning process for the U.S. Route 7 and State Route 15 Interchange Reconstruction project (SPN 102-358). The project seeks to improve the system linkage between the two limited access roadways as well as the mobility and safety for users in the vicinity of the interchanges. The potential improvements have been narrowed down to two Alternatives, 21D and 26, which reconfigure the study intersection of Main Avenue at Glover Avenue, Creeping Hemlock Road, and the Merritt Parkway Southbound Ramps as well as add additional intersections on Main Avenue and the U.S. Route 7 Expressway. The project will improve traffic operations at the interchanges and on the surrounding roadways, while accommodating future traffic growth.

Both alternatives propose constructing a full interchange between the Merritt Parkway (Route 15) and U.S. Route 7 with access to Main Avenue. This will be accommodated by reconstructing the existing ramp access and creating two new ramps to Main Avenue: Ramp D and Ramp SE. Each of these new ramps intersects Main Avenue at a new traffic signal south of the Glover Avenue and Creeping Hemlock Drive intersection. Widening and other geometric changes to Main Avenue, as well as the intersecting side street approaches, are incorporated in the concepts. Alternative 21D proposes a free-flow interchange on U.S. Route 7 with Route 15 and Ramps D and SE, whereas Alternative 26 proposes these new ramps to intersect U.S. Route 7 at two new signalized intersections with access to Route 15. Concept plans for Alternatives 21D and 26 are provided in Appendix C.

Grist Mill Road at U.S. Route 7 and Glover Avenue Intersections

CTDOT is pursuing improvements to the Grist Mill Road intersections with U.S. Route 7 and Glover Avenue due to the existing operational issues. CTDOT has reviewed several alternatives to add capacity and reduce delays, particularly for the northbound and southbound traffic travelling on U.S. Route 7 between northern Norwalk and Wilton towards southern Norwalk and I-95. The proposed improvements address the existing capacity issues and accommodate future traffic growth, including the North Seven Master Plan. The preferred concept was developed by Fuss & O'Neill as part of a previous study. The concept proposes combining both intersections into a single realigned intersection where the U.S. Route 7 Expressway is aligned with the portion of Grist Mill Road carrying the U.S. Route 7 designation. Thus, Glover Avenue is aligned with the portion of Grist Mill Road extending west of the intersection. Widening was incorporated on all approaches with a new traffic signal and signal timings to increase capacity and improve traffic operations. The concept plan for the realigned intersection is provided in Appendix D.

Grist Mill Road at Main Avenue and CT DMV Driveway Intersection Improvements (PP102-020)

In addition to the improvements to the west end of Grist Mill Road, the Grist Mill Road intersection with Main Avenue is also being reviewed by CTDOT for improvements. A concept for the Main Avenue corridor from Grist Mill Road to Kent Road to the north in Wilton was developed for CTDOT by BL Companies under SPN PP102-020. Additional capacity from widening and optimized traffic signal timings is proposed to reduce delays for Main Avenue through traffic and the U.S. Route 7 through traffic traveling to and from Grist Mill Road. The proposed improvements address the existing capacity issues and accommodate future traffic growth. The Main Avenue concept plan detailing these improvements is provided in Appendix E.

Norwalk River Valley Trail Extension

In addition to the roadway improvements throughout the study area, a routing study for the Norwalk River Valley Trail (NRVT) was conducted by Alta Planning + Design in association with Stantec and Fitzgerald & Halliday, Inc. The NRVT is a partially constructed/planned multi-use trail running from Norwalk to Danbury along the Norwalk River and U.S. Route 7 with the goal of connecting the surrounding municipalities to promote commerce, multi-modal transportation, and recreation opportunities. In the area of the Site, the NRVT is planned to run from the north and follow the U.S. Route 7 expressway to the south and a spur along Glover Avenue will connect the development and train station to the main trail to the north.

3.4 Capacity and Queue Analyses – Background Condition

Capacity and queue analyses were performed for the study intersections for the 2025 Background Condition traffic volumes during the weekday morning and weekday afternoon peak hours using Trafficware Synchro Studio 10 – Traffic Analysis Software. The software conducts the analyses based upon the methodology provided in the *Highway Capacity Manual (HCM), 6th Edition, 2016*. The analysis results are categorized in terms of Level of Service (LOS) and queue. LOS describes the qualitative intersection operational conditions based on the calculated average delay per vehicle. The queue analysis results are summarized based on the length of vehicle queues on an intersection approach. Queues are quantified by 95th percentile (design) and 50th percentile (average) queues. A summary of the HCM capacity analysis methodology and a detailed definition of LOS is provided in Appendix F.

The capacity analyses show that the study area intersections all operate acceptably at LOS D or better but experience moderate congestion for select movements in the 2025 background condition during both the weekday morning and afternoon peak hours. The moderate congestion was limited to lower volume side street and main line turning movements and resulted from the intersection balancing the average delays with the larger volume main line and side street movements. The capacity and queue analyses for the 2025 Background Conditions are summarized in Tables 2 and 3, respectively. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix G.

Section 4 Combined Conditions

The Combined Condition represents the analysis of traffic volumes and operating conditions of the 2025 Background Conditions with the addition of site-generated traffic from the potential North Seven Master Plan discussed in the following sections.

4.1 Potential Master Plan Trip Generation

Site-generated traffic volumes for the potential Master Plan were estimated using the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition, 2017. Land-use codes 222 – Multi-Family Housing (High-Rise) and 820 – Shopping Center were used to estimate new trips. Due to the proximity of the site to the Merritt 7 Railroad Station and the mixed-use nature of the site, a 20% transit-oriented development credit was applied to the trip generation. Based on the published data, the 1,303 housing units and 27,865 square feet of retail development are expected to generate the following trips:

- Weekday Morning: 344 trips (90 entering, 254 exiting)
- Weekday Afternoon: 460 trips (270 entering, 190 exiting)

Table 4 provides a summary of the trip generation.

4.2 Max-Build Trip Generation

Site-generated traffic volumes for the property were also estimated for a theoretical maximum general office use build-out scenario that would be permitted under the EO zone with the zone change. This information is for comparison purposes only. It is acknowledged that developing the Site solely into office space is unrealistic due to the proximity of the Merritt 7 development, and the fact that the site-generated traffic from such a development would severely impact the surrounding roadway network. The maximum build-out of 1,068,800 square feet of office space would be expected generate the following traffic volumes during the peak hours:

- Weekday Morning: 1,069 trips (941 entering, 128 exiting)
- Weekday Afternoon: 993 trips (178 entering, 815 exiting)

Table 5 provides a summary of this trip generation.

In addition, the site-generated traffic volumes for a theoretical maximum build-out scenario that would be permitted under current zoning regulations without the zone change is also presented for comparison purposes. The maximum build-out of 558,100 square feet (Zones B2 & EO) and three single-family residences (Zone AAA) would be expected generate the following traffic volumes during the peak hours:

- Weekday Morning: 655 trips (573 entering, 82 exiting)
- Weekday Afternoon: 598 trips (110 entering, 488 exiting)

Table 6 provides a summary of this trip generation.

4.3 Trip Distribution

The distribution of new traffic entering and exiting the Site that was applied to the roadway network was taken from the Grist Mill Village development traffic study conducted by Fuss & O'Neill that was approved by both the City and CTDOT. This distribution was based on existing traffic patterns and the adjacent roadway layout. The following regional distribution is anticipated:

- 40% to/from U.S. Route 7 to the south
- 20% to/from Route 15 to the north
- 20% to/from Route 15 to the south
- 15% to/from Main Avenue to the north
- 5% to/from Main Avenue to the south

Figures 5 and 6 show the Development Trip Arrival and Departure Distribution percentage to and from the property throughout the study area for Alternatives 21D and 26, respectively. Figures 7 and 8 show the Site-Generated Traffic Volumes distributed at the study intersections for the weekday morning and afternoon peaks, also for Alternatives 21D and 26, respectively.

4.4 Combined Traffic Volumes

To develop the 2025 Combined Traffic Volumes, the site-generated volumes were added to the 2025 Background Traffic Volumes. These volumes were used in the analysis of the 2025 Combined Conditions and are depicted in Figures 9 and 10 for alternatives 21D and 26, respectively.

4.5 Capacity and Queue Analyses – Combined Condition

Capacity and queue analyses were performed for the study intersections for the 2025 Combined Condition traffic volumes during the weekday morning and weekday afternoon peak hours using the same methodology as described in Section 3.4. Signal timings were optimized to accommodate changes in traffic volumes and maintain similar operations compared to the Background Conditions.

The capacity analyses for the Combined Condition show that the study area intersections continue to operate acceptably with intersection operation of overall LOS D or better. The majority of the intersection approaches remained at background LOS with minor increases in delay and operating acceptably at LOS D or better. The 2025 Combined Conditions capacity and queue analyses are summarized in Tables 2 and 3, respectively. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix H.

Section 5

Conclusions & Recommendations

1. The potential North Seven Master Plan is expected to include approximately 1,303 apartment units and 27,865 square feet of retail space on an approximately 16.35 acres site that will be zoned Executive Office (EO) following the proposed zone-change approval. Approximately 2,154 additional parking spaces would be provided on the Site. The development could be completed by 2025.
2. The Site would be served by driveways on the west side of Glover Avenue. The driveway approaches would be stop-controlled, and access and egress turn lanes would be provided as determined during the design process.
3. Vehicle collision history does not indicate a significant or notable pattern of collisions at the study area intersections. In addition, the planned CTDOT roadway improvements are expected to reduce congestion and improve traffic safety within the study area.
4. Significant roadway improvements in the study area are being planned, designed, and constructed as part of several state projects. The projects aim to improve existing operational deficiencies along the roadways and at the intersections, while also accommodating future traffic growth in the area. The following projects, further outlined in Section 3.3 and shown on the concept plans provided in Appendices, include improvements at all the study area intersections:
 - a. U.S. Route 7 and Route 15 Interchange Reconstruction Project (SPN 102-358)
 - b. Grist Mill Road and Glover Avenue Realignment Project
 - c. Main Avenue Improvements (SPN PP102-020)
 - d. Norwalk River Valley Trail Extension
5. Planned roadway improvements currently in development by others for the study area transportation system mitigate existing capacity issues as well as provide additional capacity to accommodate future traffic volumes associated with the North Seven Master Plan.
6. The capacity analyses show that the study area intersections are projected to maintain stable traffic flow under future conditions with the development of the North Seven Master Plan. The intersections operate acceptably at overall LOS D or better under combined conditions.
7. Based on the results of the analysis, it is the professional opinion of Tighe & Bond that the additional traffic expected to be generated by the proposed zone change and the potential North Seven Master Plan development, following implementation of the planned, off-site roadway improvements by CTDOT, is not expected to have a significant impact to traffic operations on the surrounding roadway network.

Section 6

Tables

TABLE 1
Corridor/Study Area Collision History Summary

COLLISION TYPE

	2016	2017	2018	2019	2020	Total	Percent
Rear-End	24	44	37	60	22	187	50.3%
Sideswipe, Same Direction	17	16	23	27	7	90	24.2%
Angle	5	5	7	22	6	45	12.1%
Non-Fixed Object	2	2	9	3	1	17	4.6%
Fixed Object	3	3	3	3	2	14	3.8%
Other/Unknown	1	3	5	1	1	11	3.0%
Head-On	1	1	1	0	2	5	1.3%
Backing	1	1	0	0	0	2	0.5%
Sideswipe, Opposite Direction	0	0	0	1	0	1	0.3%
TOTAL	54	75	85	117	41	372	100%

SEVERITY

	2016	2017	2018	2019	2020	Total	Percent
Fatal	0	0	0	0	0	0	0.0%
Serious Injury	0	0	0	1	0	1	0.3%
Minor Injury / Property Damage Only (PDO)	54	75	85	116	41	371	99.7%
TOTAL	54	75	85	117	41	372	100%

BY STUDY AREA INTERSECTION

	2016	2017	2018	2019	2020	Total	Percent
Grist Mill Road at U.S. Route 7	25	27	33	36	10	131	35.2%
Grist Mill Road at Main Avenue	15	19	23	37	17	111	29.8%
Grist Mill Road at Glover Avenue	9	17	11	22	6	65	17.5%
Main Avenue at Glover Avenue and Creeping Hemlock Drive	5	12	18	22	8	65	17.5%
TOTAL	54	75	85	117	41	372	100%

TABLE 2

Intersection Operation Summary - Vehicular Levels of Service / Average Delay (sec/veh)

	2025 Weekday Morning Peak Hour					2025 Weekday Afternoon Peak Hour				
	Lane Use	Alt. 21D Background	Alt. 21D Combined	Alt. 26 Background	Alt. 26 Combined	Alt. 21D Background	Alt. 21D Combined	Alt. 26 Background	Alt. 26 Combined	
Traffic Signal - U.S. Route 7 at Grist Mill Road & Glover Avenue										
Overall		C / 22.9	C / 26.5	C / 22.9	C / 26.5	C / 26.1	C / 28.3	C / 26.1	C / 28.3	
Grist Mill Road	SEL	E / 55.7	D / 49.2	E / 55.7	D / 49.2	D / 54.6	D / 52.8	D / 54.6	D / 52.8	
	SET	D / 53.1	D / 53.1	D / 53.1	D / 53.1	D / 52.6	D / 52.6	D / 52.6	D / 52.6	
	SER	A / 1.7	A / 1.7	A / 1.7	A / 1.7	A / 1.4	A / 1.4	A / 1.4	A / 1.4	
	NWL	E / 55.2	E / 60.1	E / 55.2	E / 60.1	D / 51.3	D / 51.2	D / 51.3	D / 51.2	
	NWT	A / 0.0	A / 0.0	A / 0.0	A / 0.0	E / 61.9	E / 59.8	E / 61.9	E / 59.8	
	NWR	E / 59.0	E / 60.3	E / 59.0	E / 60.3	D / 48.8	D / 47.9	D / 48.8	D / 47.9	
U.S. Route 7	NEL	E / 57.0	E / 58.3	E / 57.0	E / 58.3	E / 57.5	E / 60.0	E / 57.5	E / 60.0	
	NET	B / 18.2	C / 24.6	B / 18.2	C / 24.6	B / 18.2	C / 22.9	B / 18.2	C / 22.9	
	NER	A / 4.0	A / 4.8	A / 4.0	A / 4.8	A / 2.7	A / 3.8	A / 2.7	A / 3.8	
	SWL	E / 62.3	E / 62.3	E / 62.3	E / 62.3	E / 58.6	E / 63.8	E / 58.6	E / 63.9	
	SWT	C / 21.0	C / 23.6	C / 21.0	C / 23.5	C / 30.0	C / 31.8	C / 30.0	C / 31.8	
	SWR	A / 5.9	A / 5.6	A / 5.9	A / 5.6	B / 11.4	B / 11.3	B / 11.4	B / 11.3	
Traffic Signal - Main Avenue at Grist Mill Road & CT DMV Driveway										
Overall		C / 20.9	C / 22.3	C / 20.9	C / 22.3	C / 27.6	C / 30.1	C / 27.6	C / 30.1	
Grist Mill Road	EBL	C / 29.5	C / 32.5	C / 29.5	C / 32.6	D / 37.7	D / 43.4	D / 37.7	D / 43.4	
	EBT	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 0.0	
	EBR	A / 7.1	A / 7.5	A / 7.1	A / 7.5	A / 2.7	A / 4.1	A / 2.7	A / 4.1	
	WB	D / 36.2	D / 36.2	D / 36.2	D / 36.2	D / 36.2	D / 36.2	D / 36.2	D / 36.2	
	NBL	E / 55.3	E / 55.8	E / 55.3	E / 55.8	E / 61.9	E / 61.9	E / 61.9	E / 61.9	
	NBTR	D / 35.2	D / 36.2	D / 35.2	D / 36.2	D / 42.7	D / 43.8	D / 42.7	D / 43.8	
Main Avenue	SBL	D / 42.5	D / 42.9	D / 42.5	D / 42.9	D / 47.8	D / 48.6	D / 47.8	D / 48.6	
	SBT	D / 47.1	D / 48.4	D / 47.1	D / 48.4	D / 46.6	D / 47.6	D / 46.6	D / 47.6	
	SBR	A / 2.2	A / 2.3	A / 2.2	A / 2.3	A / 3.0	A / 3.2	A / 3.0	A / 3.2	
Traffic Signal - Main Avenue at Glover Avenue & Creeping Hemlock Drive										
Overall		C / 34.0	C / 34.9	C / 33.8	C / 34.5	C / 34.8	D / 37.6	C / 34.9	D / 37.8	
Glover Avenue	EBLT	D / 46.8	D / 46.8	D / 46.8	D / 46.8	D / 37.7	D / 37.7	D / 37.7	D / 37.7	
	EBR	B / 15.4	B / 17.0	B / 15.4	B / 16.4	D / 37.9	D / 46.0	D / 37.9	D / 46.0	
	WBL	C / 28.3	C / 26.4	C / 28.3	C / 26.4	E / 76.8	E / 59.3	E / 76.8	E / 59.3	
	WBTR	E / 78.1	E / 77.2	E / 78.1	E / 77.2	D / 43.1	D / 51.7	D / 43.1	D / 51.7	
Creeping Hemlock Drive	WBR	D / 49.0	D / 43.1	D / 49.0	D / 43.1	D / 39.4	D / 38.0	D / 39.4	D / 38.0	
	NBL	C / 24.3	C / 29.1	C / 23.8	C / 27.2	D / 39.4	D / 41.5	D / 41.9	D / 43.5	
	NBTR	C / 24.1	C / 28.2	C / 23.8	C / 27.4	A / 8.7	A / 9.7	A / 8.5	B / 10.5	
	SB	C / 24.7	C / 26.3	C / 24.7	C / 27.2	C / 31.5	D / 36.7	C / 31.5	D / 36.7	
Traffic Signal - Main Avenue at Ramp D										
Overall		A / 0.4	A / 0.5	A / 0.5	A / 0.5	A / 7.6	A / 9.5	A / 7.7	A / 9.4	
Main Avenue	NBL	A / 0.8	A / 1.0	A / 1.1	A / 1.3	C / 26.8	C / 28.5	C / 26.9	C / 27.5	
	NBT	A / 0.2	A / 0.2	A / 0.2	A / 0.2	A / 0.1	A / 0.1	A / 0.0	A / 0.1	
	SBT	A / 0.8	A / 0.8	A / 0.8	A / 0.8	A / 5.9	A / 8.1	A / 5.9	A / 8.1	
	SBR	A / 0.7	A / 0.7	A / 0.7	A / 0.7	A / 9.5	B / 12.3	A / 9.5	B / 12.3	
Traffic Signal - Main Avenue at Route 15N On-Ramp & Ramp SE										
Overall		B / 17.9	B / 19.1	B / 17.0	B / 17.7	B / 11.7	B / 12.5	B / 18.2	B / 19.7	
Ramp SE	EBL	C / 26.8	C / 28.7	C / 25.6	C / 27.0	C / 34.4	C / 34.9	C / 26.7	C / 26.8	
	EBTR	A / 4.9	A / 4.9	B / 13.1	B / 13.9	C / 26.2	C / 26.5	D / 46.7	D / 47.8	
	EBR	A / 5.0	A / 5.0	A / 6.9	A / 7.2	C / 27.2	C / 27.5	C / 32.9	C / 33.6	
	NBT	C / 25.7	C / 27.0	B / 18.9	B / 19.9	B / 11.0	B / 12.9	B / 15.2	B / 18.2	
Main Avenue	NBR	A / 4.7	A / 5.0	A / 6.9	A / 7.3	A / 2.7	A / 3.2	A / 6.5	A / 8.8	
	SBL	B / 14.1	B / 17.9	B / 15.1	B / 17.0	B / 14.2	B / 16.1	C / 25.1	C / 28.7	
	SBT	B / 11.0	B / 11.8	B / 12.5	B / 12.0	A / 3.8	A / 3.8	A / 6.6	A / 6.5	
Traffic Signal - U.S. Route 7 at Route 15S On-Ramp & Ramp D										
Overall		B / 18.3	B / 18.8			C / 22.5	C / 23.6			
Ramp D	WBL			D / 50.0	D / 50.5			C / 27.2	C / 27.9	
	WBTR			C / 27.0	C / 27.5			D / 35.9	D / 36.6	
	NBT			C / 20.4	C / 21.0			C / 23.6	C / 25.4	
	NBR			A / 4.7	A / 4.7			A / 6.8	A / 6.0	
	SBT			B / 14.0	B / 14.6			B / 18.7	B / 19.4	
	SBR			B / 12.2	B / 14.3			C / 25.0	C / 28.4	
Traffic Signal - U.S. Route 7 at Route 15N Off-Ramp & Ramp SE										
Overall		D / 42.4	D / 45.3			C / 29.8	D / 38.4			
Route 15N Off-Ramp	EBL			E / 71.1	E / 76.1			E / 63.4	E / 72.1	
	EBLT			E / 71.7	E / 76.1			E / 63.4	E / 72.7	
	EBR			A / 1.3	A / 1.3			A / 1.4	A / 1.4	
	NBT			E / 72.0	E / 78.2			D / 49.1	E / 65.5	
	NBR			A / 2.5	A / 2.5			A / 2.5	A / 2.5	
	SBT			F / 170.6	F / 173.9			F / 93.9	F / 117.9	
	SBL			A / 6.2	A / 6.7			A / 7.6	A / 8.6	

TABLE 3Intersection Operation Summary - Vehicular 50th / 95th Percentile Queue (In Feet)

	Lane	Available Use	2025 Weekday Morning Peak Hour				2025 Weekday Afternoon Peak Hour			
			Alt. 21D Background	Alt. 21D Combined	Alt. 26 Background	Alt. 26 Combined	Alt. 21D Background	Alt. 21D Combined	Alt. 26 Background	Alt. 26 Combined
Traffic Signal - U.S. Route 7 at Grist Mill Road & Glover Avenue										
Grist Mill Road	SEL	250	108 / 141	106 / 131	108 / 141	106 / 131	38 / 64	38 / 64	38 / 64	38 / 64
	SET	900	8 / 28	8 / 28	8 / 28	8 / 28	8 / 27	8 / 27	8 / 27	8 / 27
	SER	250	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
Glover Avenue	NWL	215	64 / 105	129 / 181	64 / 105	129 / 181	115 / 229	167 / 344	115 / 229	167 / 344
	NWT	>1000	0 / 0	0 / 0	0 / 0	0 / 0	49 / 96	49 / 96	49 / 96	49 / 96
	NWR	215	49 / 101	80 / 222	49 / 101	80 / 222	83 / 142	103 / 172	83 / 142	103 / 172
U.S. Route 7	NEL	600	200 / 257	198 / 294	200 / 257	198 / 294	223 / 317	223 / 317	223 / 317	223 / 317
	NET	>1000	498 / 675	557 / 729	498 / 675	557 / 729	413 / 534	443 / 558	413 / 534	443 / 558
	NER	250	52 / 123	76 / 130	52 / 123	76 / 130	14 / 52	41 / 121	14 / 52	41 / 121
Grist Mill Road	SWL	150	78 / 175	88 / 245	78 / 175	87 / 245	43 / 81	76 / 145	43 / 81	76 / 145
	SWT	775	356 / 534	380 / 552	356 / 534	380 / 552	420 / 465	384 / 475	418 / 464	382 / 475
	SWR	250	26 / 49	26 / 38	26 / 49	26 / 38	88 / 107	83 / 114	87 / 107	83 / 114
Traffic Signal - Main Avenue at Grist Mill Road & CT DMV Driveway										
Grist Mill Road	EBL	370/775 ¹	377 / 581	505 / 614	378 / 582	506 / 615	592 / 762	675 / 767	591 / 763	673 / 767
	EBT	775	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
	EBR	775	109 / 180	87 / 184	107 / 181	88 / 185	5 / 49	17 / 44	5 / 49	17 / 44
CT DMV Driveway	WB	180	4 / 18	4 / 18	4 / 18	4 / 18	4 / 18	4 / 18	4 / 18	4 / 18
	NBL	200	21 / 41	21 / 41	21 / 41	21 / 41	51 / 84	51 / 84	51 / 84	51 / 84
	NBTR	>1000	155 / 199	157 / 202	155 / 199	157 / 202	258 / 320	258 / 323	258 / 320	258 / 323
Main Avenue	SBL	100	7 / 25	7 / 25	7 / 25	7 / 25	8 / 26	8 / 27	8 / 26	8 / 27
	SBT	>1000	180 / 238	181 / 238	180 / 238	181 / 238	102 / 143	102 / 144	102 / 143	102 / 144
	SBR	225	35 / 61	40 / 65	35 / 61	40 / 65	73 / 115	83 / 127	73 / 115	83 / 127
Traffic Signal - Main Avenue at Glover Avenue & Creeping Hemlock Drive										
Glover Avenue	EGLT	475	33 / 67	33 / 67	33 / 67	33 / 67	58 / 95	58 / 95	58 / 95	58 / 95
	EGR	260	35 / 50	51 / 69	35 / 50	51 / 69	127 / 152	136 / 165	127 / 152	136 / 165
	WBL	350	123 / 164	117 / 157	123 / 164	117 / 157	109 / 179	107 / 168	109 / 179	107 / 168
Creeping Hemlock Drive	WBTR	350	248 / 405	253 / 404	248 / 405	253 / 404	54 / 104	91 / 170	54 / 104	91 / 170
	WBR	100	190 / 316	182 / 277	190 / 316	182 / 277	28 / 64	28 / 63	28 / 64	28 / 63
	NBL	230	131 / 199	133 / 237	122 / 193	132 / 227	56 / 129	69 / 142	72 / 129	86 / 144
Main Avenue	NBTR	230 ²	235 / 297	235 / 322	261 / 338	276 / 358	45 / 75	45 / 90	43 / 74	46 / 92
	SB	70/525 ¹	52 / 79	54 / 82	52 / 79	55 / 83	367 / 410	373 / 443	367 / 410	373 / 443
Traffic Signal - Main Avenue at Ramp D										
Main Avenue	NBL	150	0 / 0	0 / 0	0 / 0	0 / 0	80 / 175	91 / 191	101 / 175	113 / 193
	NBT	150/400 ¹	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
	SBT	230	5 / 7	6 / 7	5 / 7	6 / 7	88 / 185	133 / 185	88 / 185	133 / 185
	SBR	230	0 / 0	0 / 0	0 / 0	0 / 0	38 / 194	107 / 172	38 / 194	107 / 172
Traffic Signal - Main Avenue at Route 15N On-Ramp & Ramp SE										
Ramp SE	EBL	180/625 ¹	213 / 281	223 / 294	195 / 263	200 / 270	59 / 87	59 / 89	54 / 82	55 / 82
	EBTR	625	9 / 54	6 / 53	65 / 134	68 / 140	62 / 138	61 / 140	195 / 322	196 / 321
	EGR	625	9 / 54	6 / 53	23 / 78	23 / 80	62 / 140	61 / 141	133 / 229	134 / 227
Main Avenue	NBT	400	166 / 227	166 / 241	165 / 221	169 / 228	52 / 179	74 / 210	144 / 179	188 / 217
	NBR	400	0 / 47	0 / 50	10 / 90	10 / 93	5 / 25	5 / 39	47 / 41	96 / 84
	SB	100	56 / 106	84 / 141	40 / 74	55 / 96	68 / 97	80 / 116	144 / 164	184 / 303
Main Avenue	SBT	400	122 / 177	129 / 180	94 / 131	94 / 130	56 / 59	55 / 61	144 / 59	117 / 61
	SBR									
Traffic Signal - U.S. Route 7 at Route 15S On-Ramp & Ramp D										
Ramp D	WBL	>1000			221 / 380	221 / 380			153 / 262	159 / 260
	WBTR	>1000			94 / 134	90 / 134			282 / 434	285 / 435
	NBT	975			347 / 329	356 / 332			304 / 302	330 / 315
U.S. Route 7	NBR	700			77 / 67	77 / 62			89 / 91	87 / 77
	SBT	>1000			225 / 271	248 / 297			258 / 310	277 / 332
	SBR	400			158 / 289	193 / 349			261 / 414	292 / 515
Traffic Signal - U.S. Route 7 at Route 15N Off-Ramp & Ramp SE										
Route 15N Off-Ramp	EBL	>1000			183 / 347	190 / 361			165 / 308	185 / 350
	EBLT	>1000			184 / 348	190 / 361			165 / 308	186 / 352
	EGR	390			0 / 0	0 / 0			0 / 0	0 / 0
U.S. Route 7	NBT	>1000			657 / 752	675 / 769			587 / 682	639 / 734
	NBR	925			0 / 38	0 / 38			0 / 39	0 / 39
	SBL	200			99 / 202	100 / 189			72 / 148	72 / 141
U.S. Route 7	SBT	975			115 / 126	124 / 154			117 / 192	145 / 216

¹Storage length varies by lane²Northbound through-traffic from upstream intersection does not stop - effective storage length is 675'

TABLE 4

Potential Master Plan Site Generated Traffic Summary
North Seven, Norwalk, CT

1,303 Apartments			
Peak Hour Period	Enter	Exit	Total
Weekday Morning	97	307	404
Weekday Afternoon	286	183	469
27,865 SF Retail Space			
Peak Hour Period	Enter	Exit	Total
Weekday Morning	16	10	26
Weekday Afternoon	51	55	106
Total Trips			
Peak Hour Period	Enter	Exit	Total
Weekday Morning	113	317	430
Weekday Afternoon	337	238	575
Transit Oriented Development (TOD) Credit			
Peak Hour Period	Enter	20% Exit	Total
Weekday Morning	23	63	86
Weekday Afternoon	67	48	115
Net Vehicular Trips (Total minus TOD Credit)			
Peak Hour Period	Enter	Exit	Total
Weekday Morning	90	254	344
Weekday Afternoon	270	190	460

Source: Institute of Transportation Engineering, Trip Generation, 10th Edition, 2017.

Land Use - 222 - Multifamily Housing (High-Rise)

Land Use - 820 - Shopping Center

Notes: Based on Potential Master Plan Development as follows:

16.35 Acres (Total of 3 Parcels)

1,303 Residential Units

27,865 sf Retail

TABLE 5

Potential Zone Change Max Build Office Trip Generation Site Generated Traffic Summary
North Seven, Norwalk, CT

Proposed - 1,068,800 SF Office Space			
Peak Hour Period	Enter	Exit	Total
Weekday Morning	1,176	160	1,336
Weekday Afternoon	223	1,018	1,241
Transit Oriented Development (TOD) Credit			
Peak Hour Period	Enter	20% Exit	Total
Weekday Morning	235	32	267
Weekday Afternoon	45	203	248
Net Vehicular Trips (Total minus TOD Credit)			
Peak Hour Period	Enter	Exit	Total
Weekday Morning	941	128	1,069
Weekday Afternoon	178	815	993

Source: Institute of Transportation Engineering, Trip Generation, 10th Edition, 2017.
Land Use - 710 - General Office Building

Notes: Based on Potential Zone Change Max Trip Generation as follows:
16.35 acres (Total of 3 Parcels) @ 1.5 FAR = 1,068,800 sf Office

TABLE 6

Potential Existing Zoning Max Build Site Generated Traffic Summary
North Seven, Norwalk, CT

Zone B2 - 393,600 SF Office Space			
Peak Hour Period	Enter	Exit	Total
Weekday Morning	488	67	555
Weekday Afternoon	90	408	498
Zone AAA - 3 Single Family Residences			
Peak Hour Period	Enter	Exit	Total
Weekday Morning	2	5	7
Weekday Afternoon	3	1	4
Zone EO - 164,500 SF Office Space			
Peak Hour Period	Enter	Exit	Total
Weekday Morning	226	31	257
Weekday Afternoon	44	202	246
Total Trips			
Peak Hour Period	Enter	Exit	Total
Weekday Morning	716	103	819
Weekday Afternoon	137	611	748
Transit Oriented Development (TOD) Credit			
Peak Hour Period	Enter	20% Exit	Total
Weekday Morning	143	21	164
Weekday Afternoon	27	123	150
Net Vehicular Trips (Total minus TOD Credit)			
Peak Hour Period	Enter	Exit	Total
Weekday Morning	573	82	655
Weekday Afternoon	110	488	598

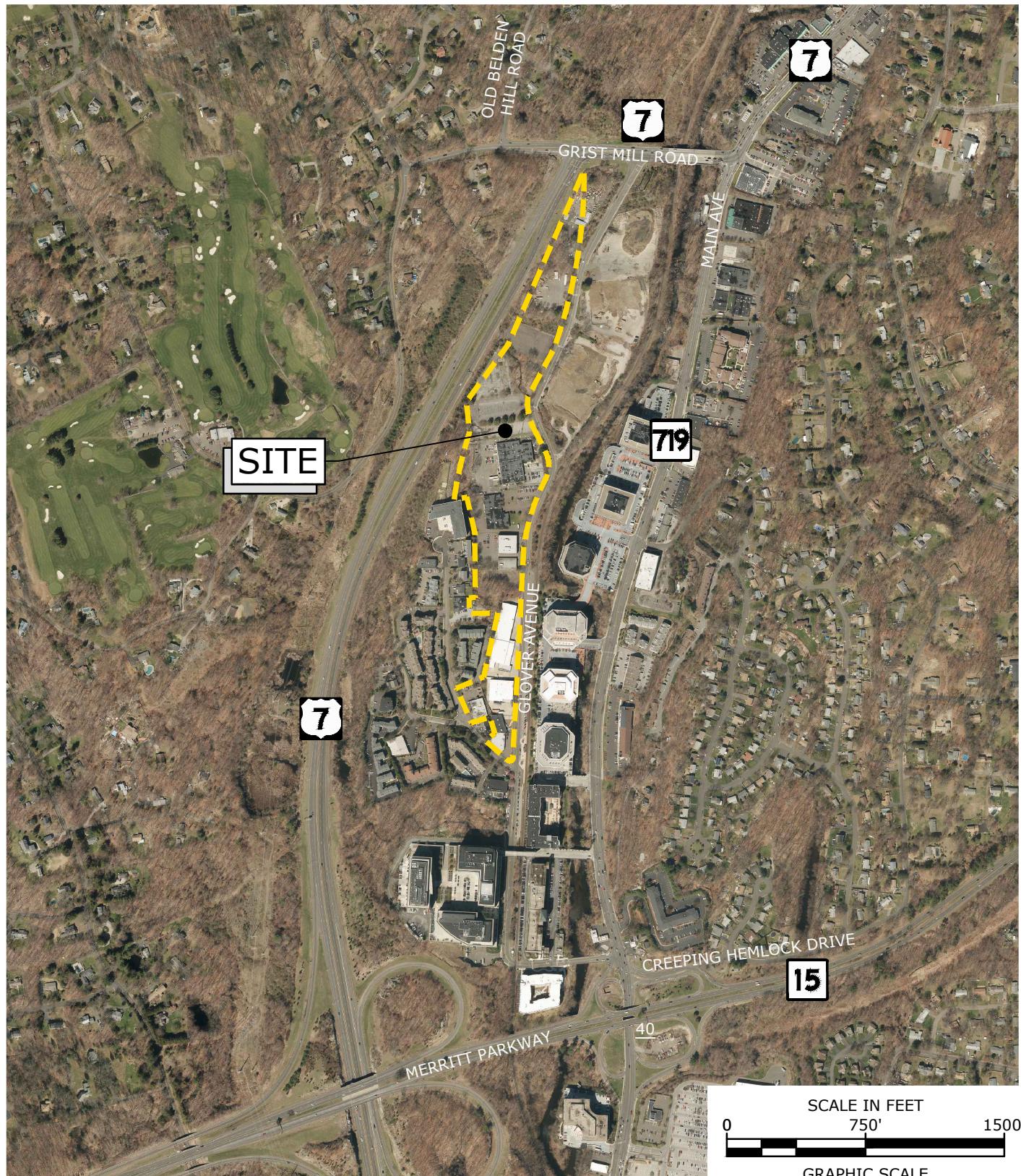
Source: Institute of Transportation Engineering, Trip Generation, 10th Edition, 2017.
 Land Use - 210 - Single-Family Detached Housing
 Land Use - 710 - General Office Building

Notes: Based on Existing Zoning Potential Development as follows:

Zone B2 - 10.04 Acres @ 0.9 FAR = 393,600 sf Office
 Zone AAA - 3.79 Acres @ 1 acre minimum lot size = 3 Single Family Homes
 Zone EO - 2.52 Acres @ 1.5 FAR = 164,500 sf Office

Section 7

Figures

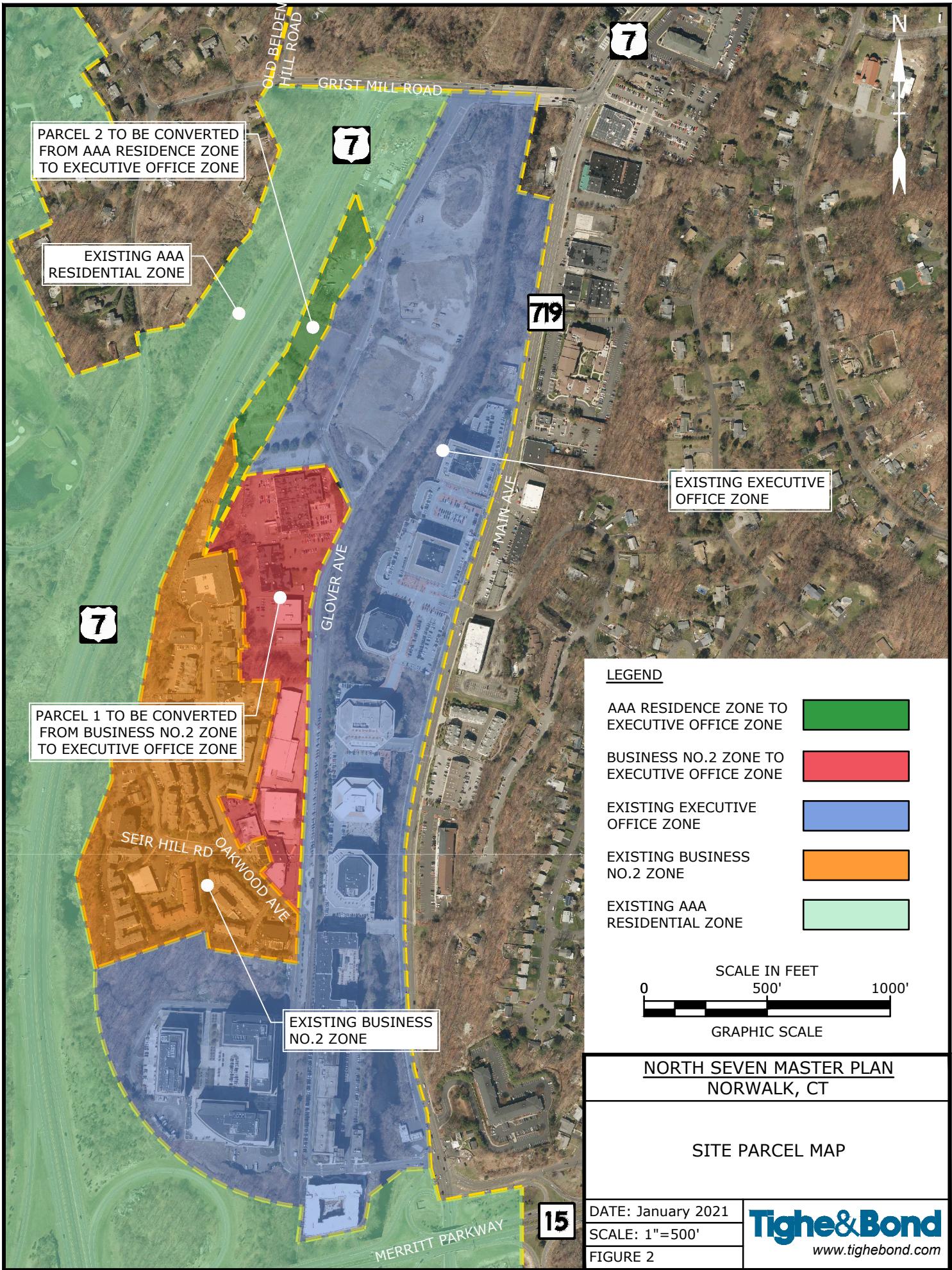


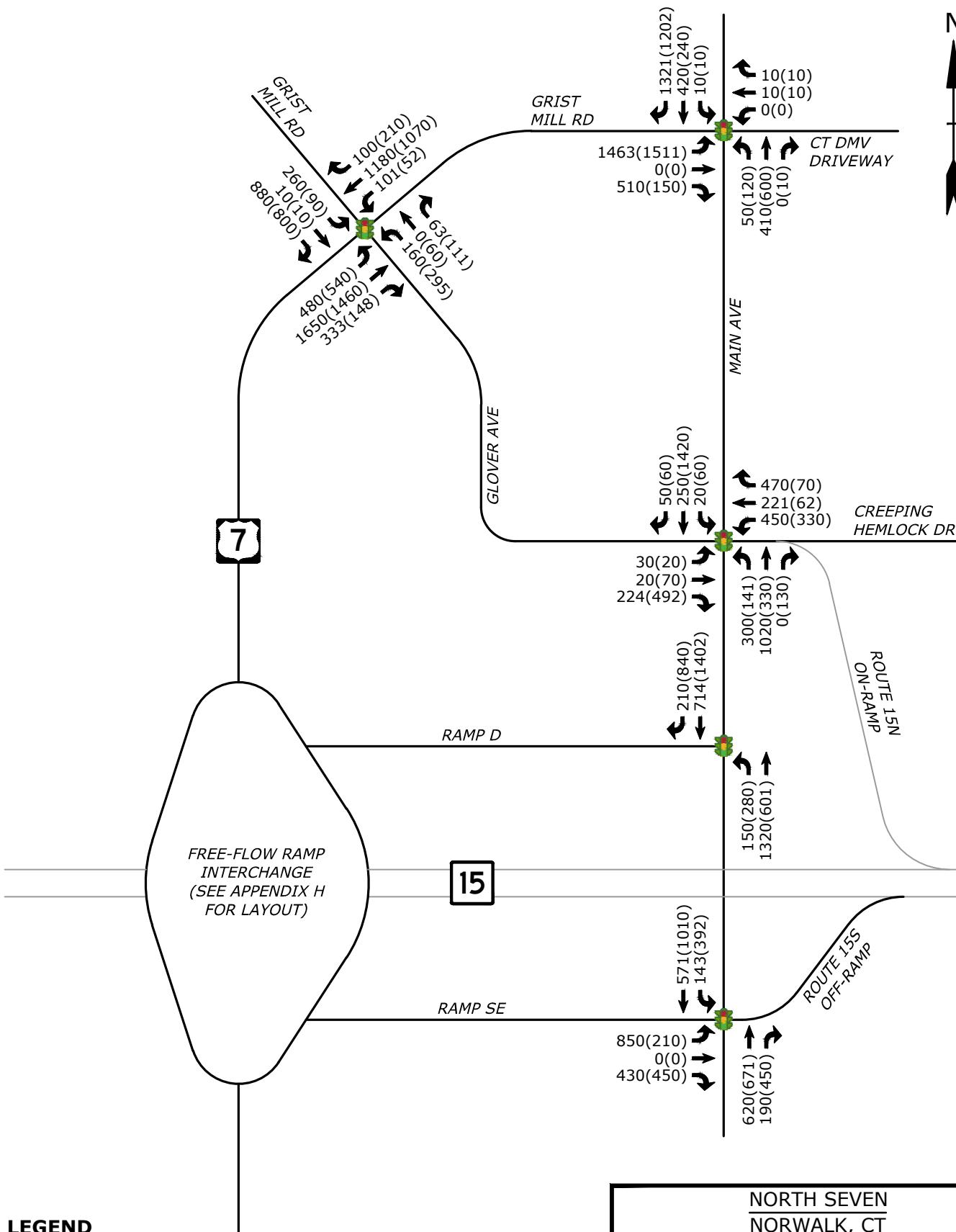
GLOVER AVENUE
NORWALK, CONNECTICUT

SITE LOCATION MAP

NORTH
1" = 750'

FIGURE 1



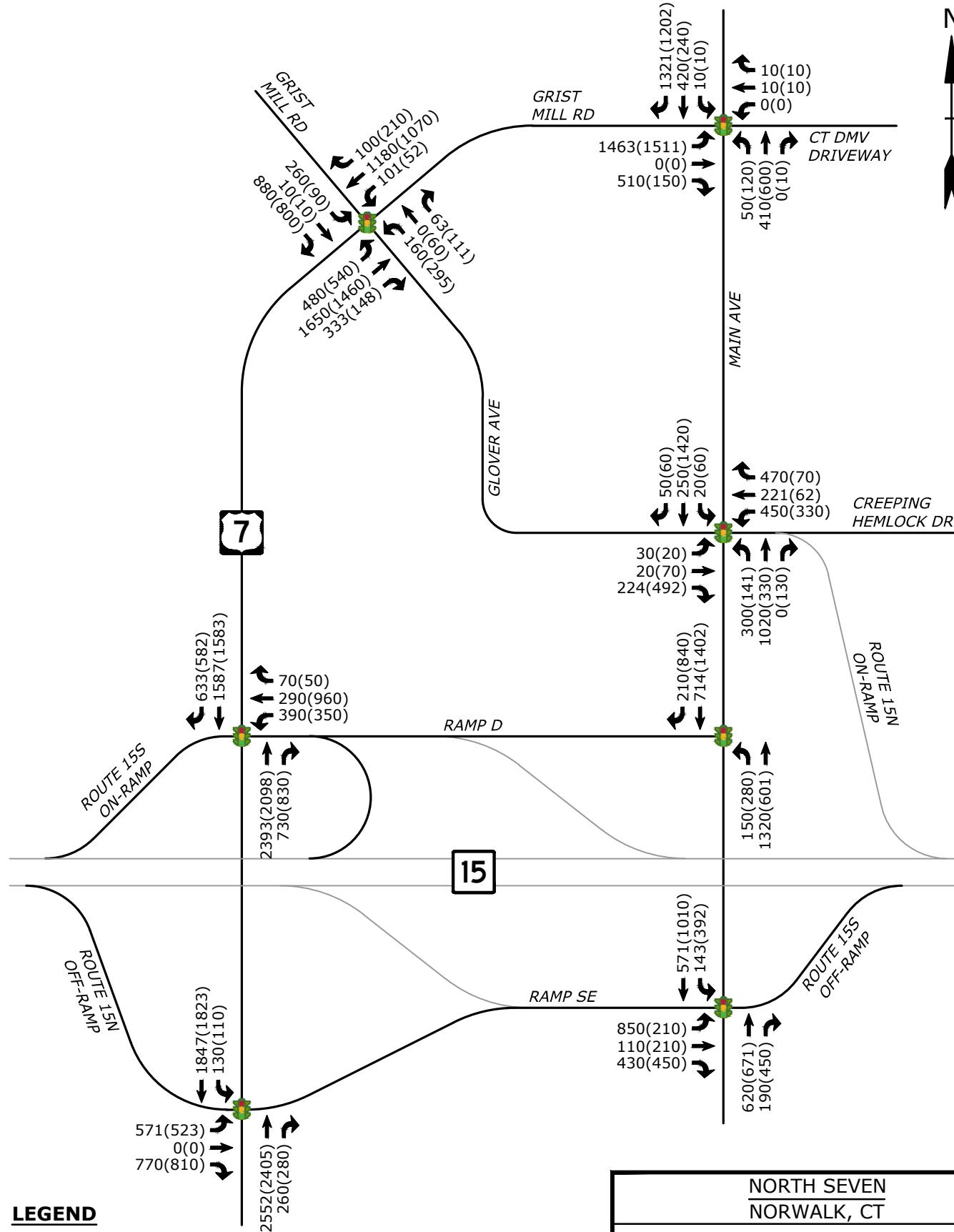


LEGEND

VOLUMES: AM (PM)



TRAFFIC SIGNAL



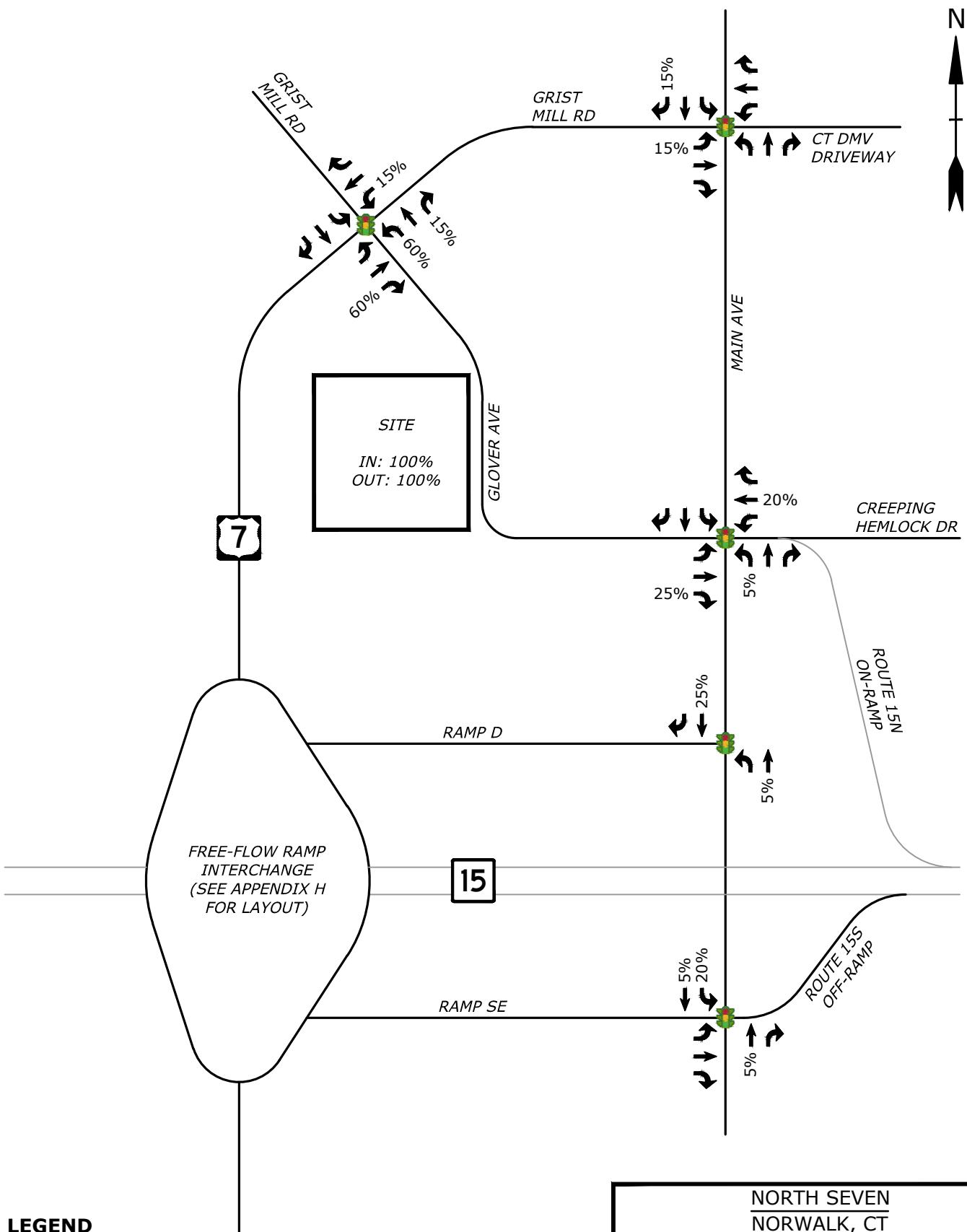
DATE: January 2021

SCALE: NTS

FIGURE 4

Tighe&Bond

www.tighebond.com



LEGEND

VOLUMES: ENTERING (EXITING)



**NORTH SEVEN
NORWALK, CT**

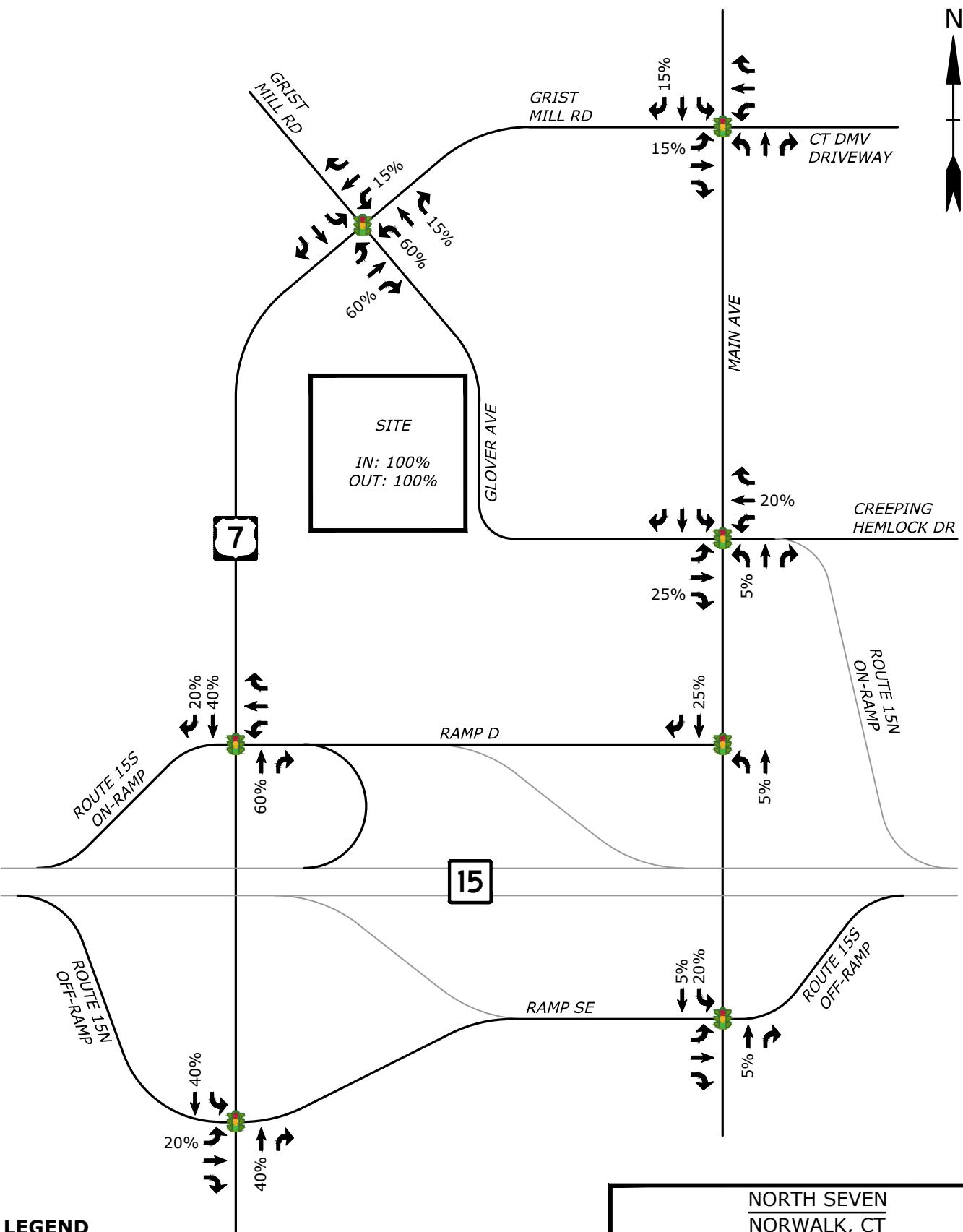
**REGIONAL ARRIVAL/
DEPARTURE
DISTRIBUTION
WITH ALTERNATIVE 21D**

DATE: January 2021

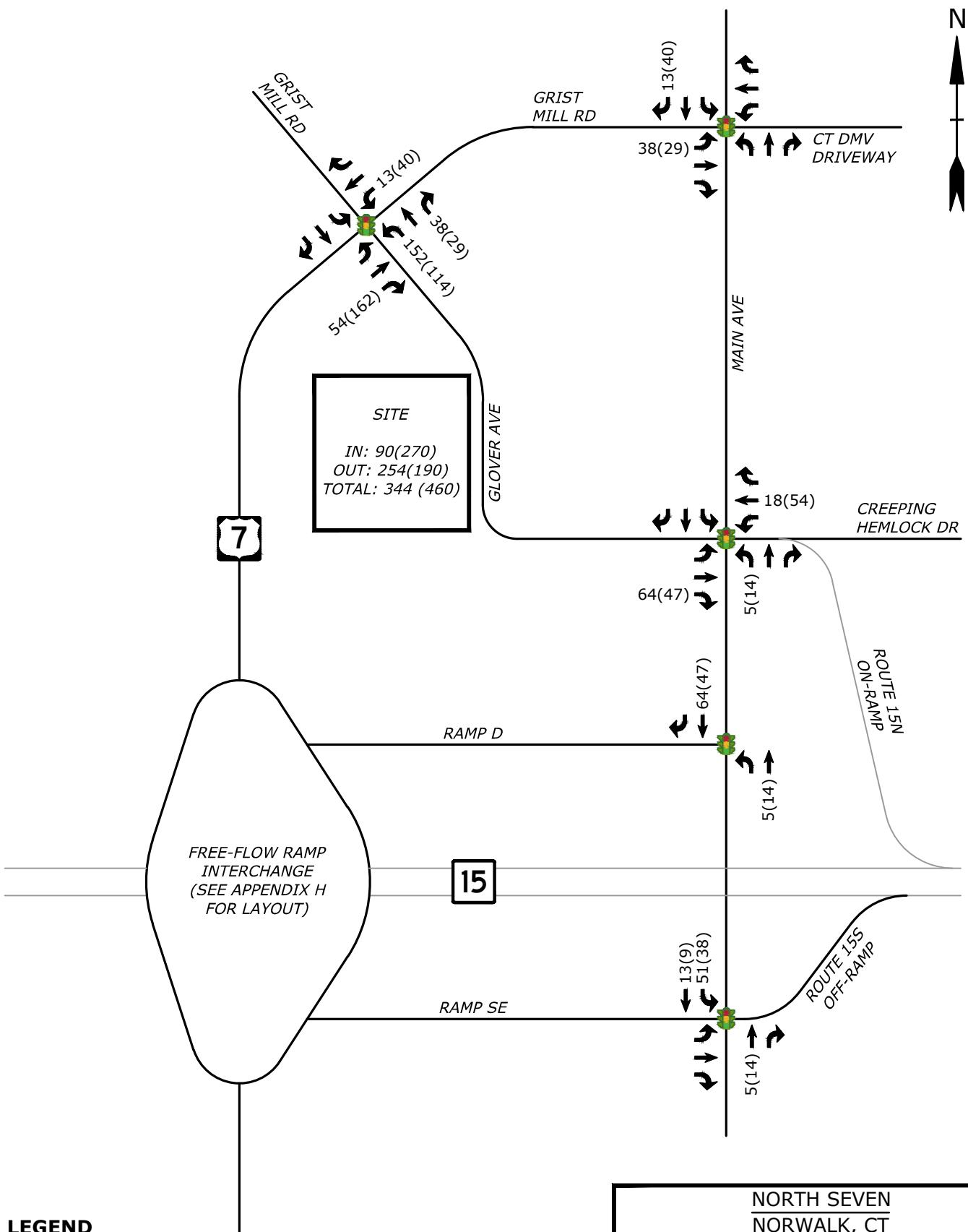
SCALE: NTS

FIGURE 5

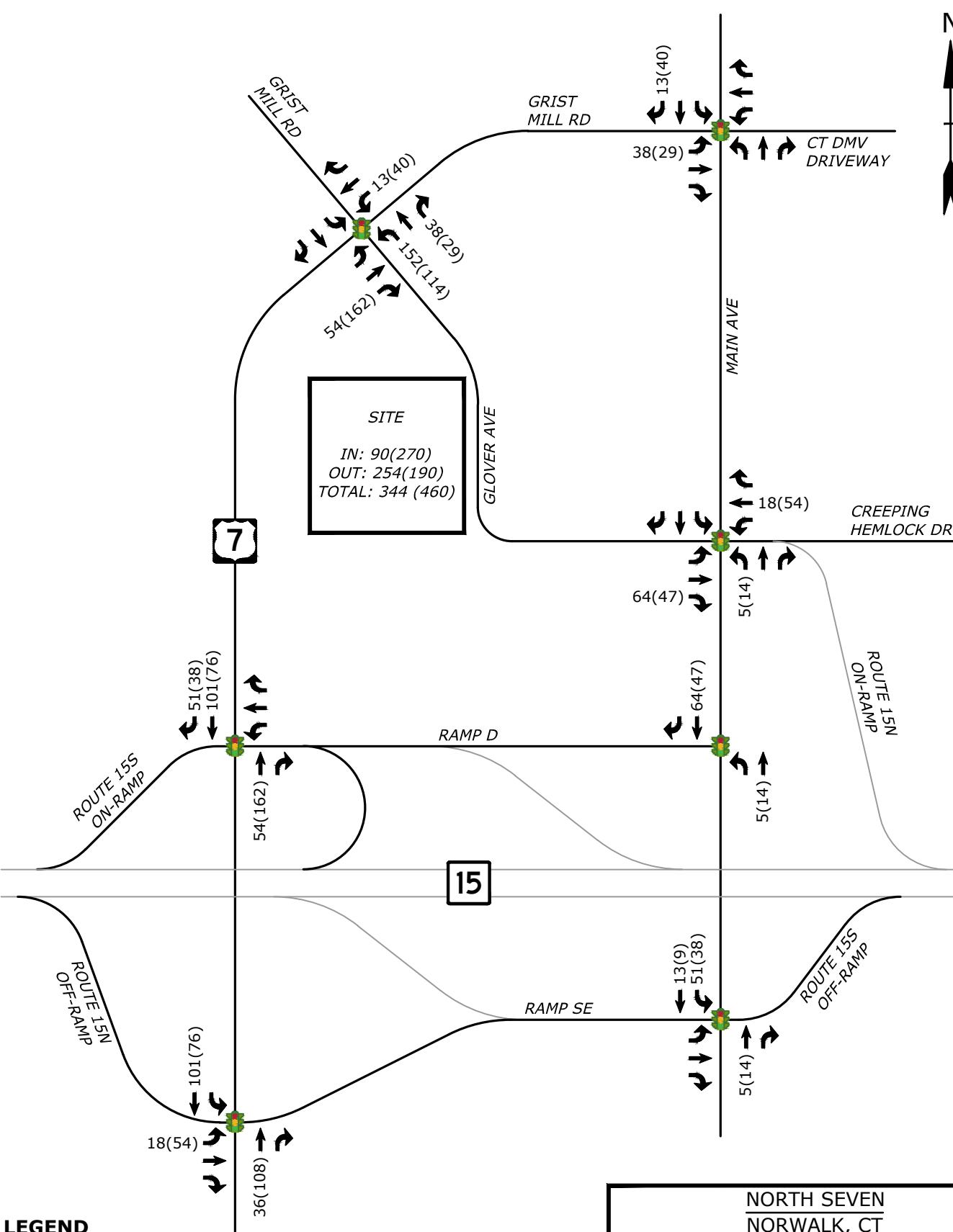
Tighe & Bond
www.tighebond.com



NORTH SEVEN NORWALK, CT	
REGIONAL ARRIVAL/ DEPARTURE DISTRIBUTION WITH ALTERNATIVE 26	
DATE:	January 2021
SCALE:	NTS
FIGURE	6



NORTH SEVEN NORWALK, CT	
SITE-GENERATED TRAFFIC VOLUMES WITH ALTERNATIVE 21D	
DATE: January 2021	
SCALE: NTS	
FIGURE 7	



LEGEND

VOLUMES: AM (PM)



NORTH SEVEN
NORWALK, CT

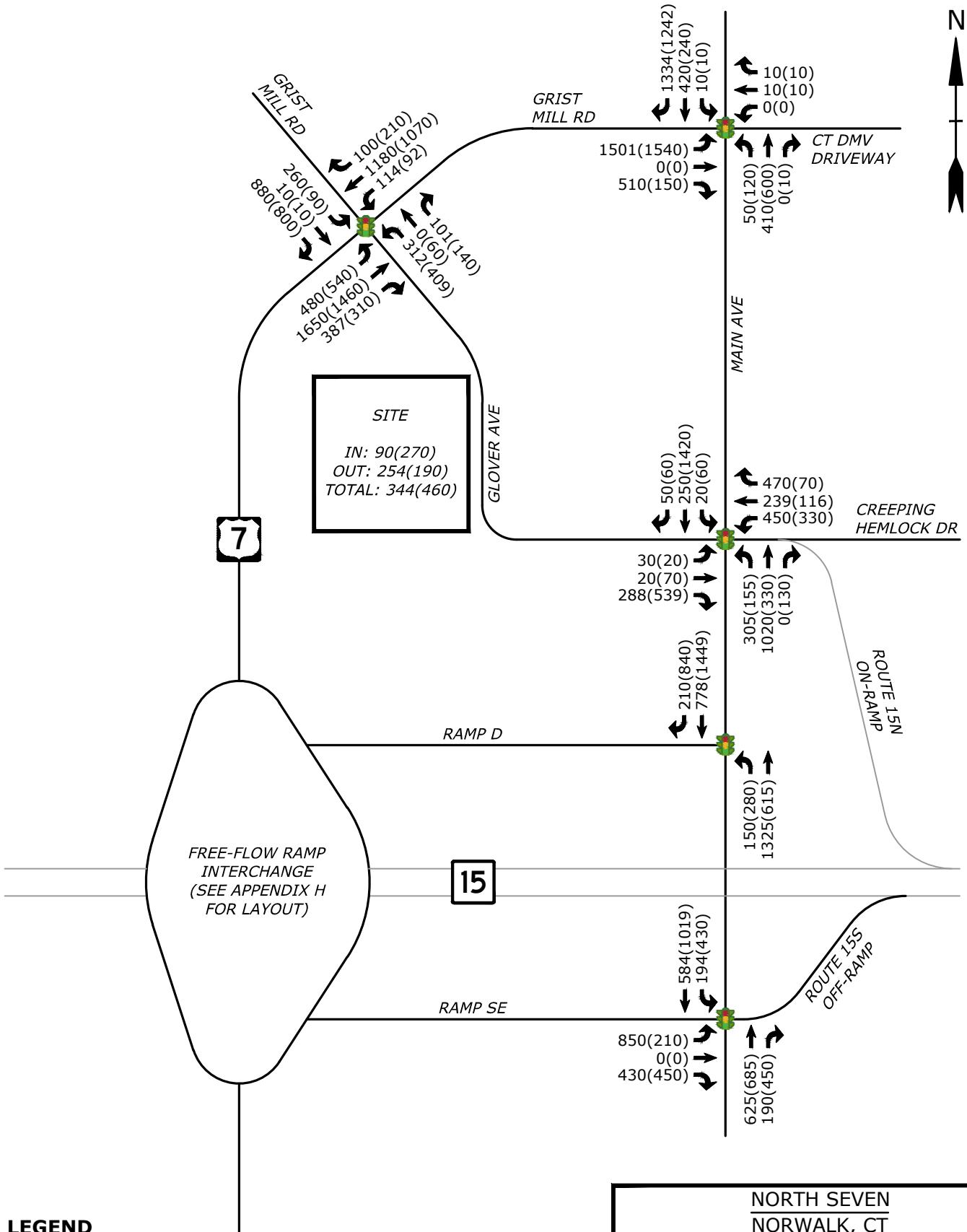
SITE-GENERATED
TRAFFIC VOLUMES
WITH ALTERNATIVE 26

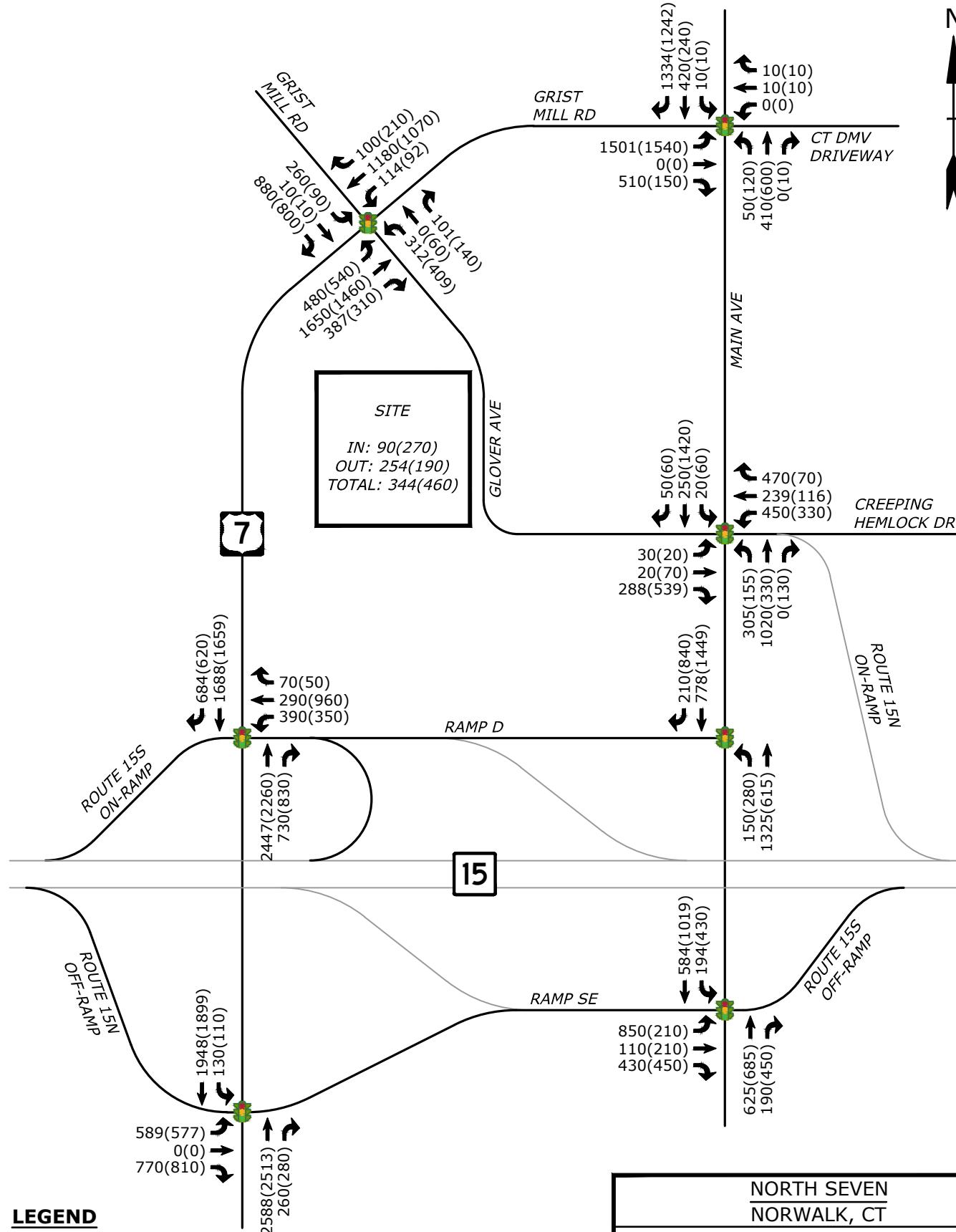
DATE: January 2021

SCALE: NTS

FIGURE 8

Tighe & Bond
www.tighebond.com





LEGEND

VOLUMES: AM (PM)



NORTH SEVEN
NORWALK, CT

2025 COMBINED
TRAFFIC VOLUMES
WITH ALTERNATIVE 26

DATE: January 2021

SCALE: NTS

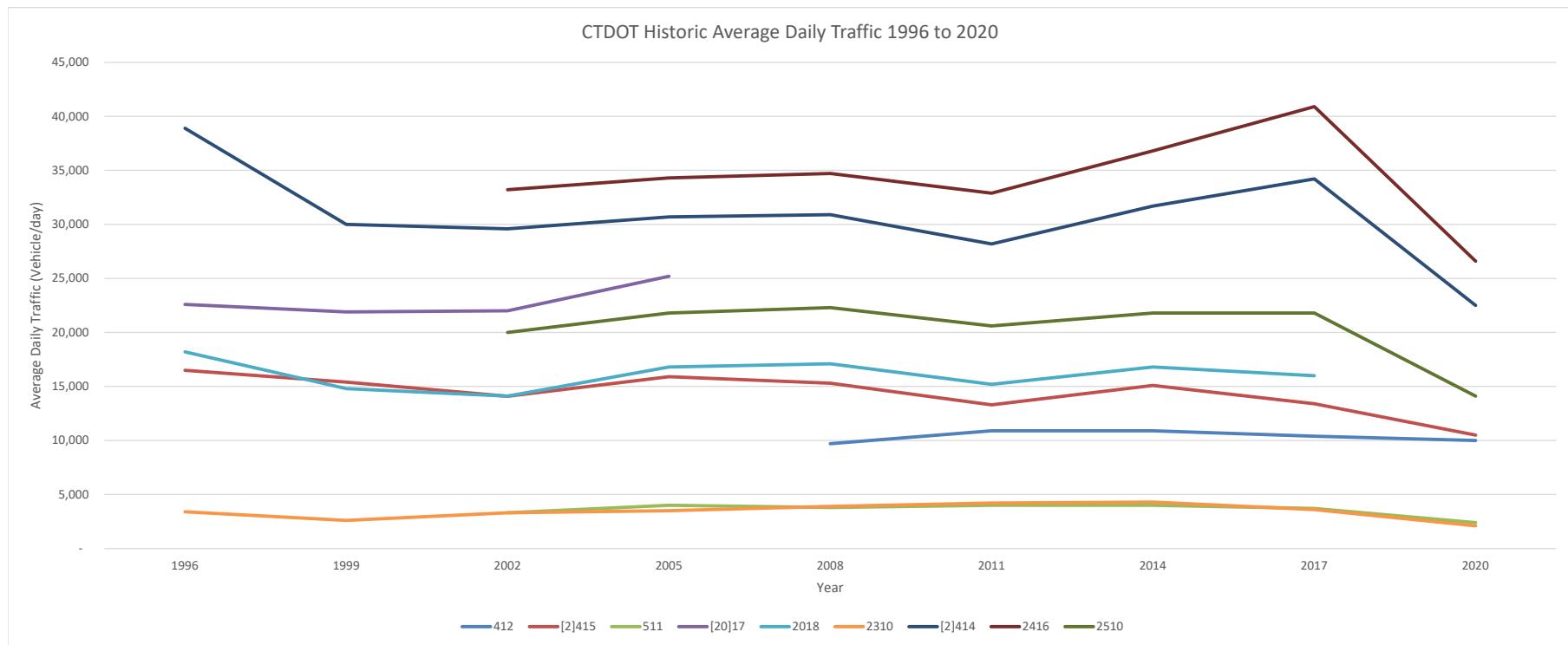
FIGURE 10

Tighe&Bond
www.tighebond.com

APPENDIX A
Traffic Volume Data

CTDOT Historic ADT Data 1996-2020

Station	1996	AAPC	1999	AAPC	2002	AAPC	2005	AAPC	2008	AAPC	2011	AAPC	2014	AAPC	2017	AAPC	2020	Year					
																		2005	2008	2011	2014	2017	2020
412	--	--	--	--	--	--	--	--	9,700	4.0%	10,900	0.0%	10,900	-1.6%	10,400	-1.3%	10,000						
[2]415	16,500	-2.3%	15,400	-2.9%	14,100	4.1%	15,900	-1.3%	15,300	-4.6%	13,300	4.3%	15,100	-3.9%	13,400	-7.8%	10,500						
511	--	--	--	--	3,300	6.6%	4,000	-1.7%	3,800	1.7%	4,000	0.0%	4,000	-2.6%	3,700	-13.4%	2,400						
[20]17	22,600	-1.0%	21,900	0.2%	22,000	4.6%	25,200	--	--	--	--	--	--	--	--	--	--						
2018	18,200	-6.7%	14,800	-1.6%	14,100	6.0%	16,800	0.6%	17,100	-3.9%	15,200	3.4%	16,800	-1.6%	16,000	--	--						
2310	3,400	-8.6%	2,600	8.3%	3,300	2.0%	3,500	3.7%	3,900	2.5%	4,200	0.8%	4,300	-5.8%	3,600	-16.4%	2,100						
[2]414	38,900	-8.3%	30,000	-0.4%	29,600	1.2%	30,700	0.2%	30,900	-3.0%	28,200	4.0%	31,700	2.6%	34,200	-13.0%	22,500						
2416	--	--	--	--	33,200	1.1%	34,300	0.4%	34,700	-1.8%	32,900	3.8%	36,800	3.6%	40,900	-13.4%	26,600						
2510	--	--	--	--	20,000	2.9%	21,800	0.8%	22,300	-2.6%	20,600	1.9%	21,800	0.0%	21,800	-13.5%	14,100						
Average						0.7%	3.6%	0.4%		-0.9%		2.3%		-1.2%		-11.3%							



Status: REV

NRWA-310 - Combined - n/s

[338]-Glover Avenue - 0.28 mi South of Oakwood Avenue

<i>Collected during COVID-19 epoch</i>	28-Jul Tue	29-Jul Wed	30-Jul Thu
Town.....Norwalk	12:00am	11	8
Station.....310	01:00am	6	8
Location.....41.146066,-73.427985	02:00am	1	2
Posted Speed Limit.....25 MPH	03:00am	5	4
A.K.A.....310 2310	04:00am	8	7
2015-Major Collector 5.....2015-Urban	05:00am	17	24
HPMS Section ID.....	06:00am	50	62
Start Report.....28-Jul-2020 09:00AM	07:00am	121	93
End Report.....30-Jul-2020 09:00AM	08:00am	x	151
Annualized ADT.....2100	09:00am	135	117
24-Hour Count.... 2226 * G4(0.95) = 2114.7	10:00am	124	126
Day 1.....+ 2226 * G4(0.95) = 4229.4	11:00am	127	135
UnRounded AADT.....4229.4 / 2 = 2114.7	12:00pm	195	166
REV 2020 Tue 28-Jul -this report-....2100	01:00pm	160	167
OK 2017 Tue 07-Nov3600	02:00pm	152	133
REV 2014 Mon 06-Oct4300	03:00pm	174	141
REV 2011 Wed 24-Aug4200	04:00pm	160	147
OK 2008 Tue 15-Apr3900	05:00pm	201	213
	06:00pm	158	174
	07:00pm	94	118
	08:00pm	82	71
	09:00pm	45	78
	10:00pm	25	42
	11:00pm	23	27
Totals	1855	2226	359

Status: REV

NRWA-310 - Combined - n/s

[338]-Glover Avenue - 0.28 mi South of Oakwood Avenue

Collected during COVID-19 epoch	Hour	Motor Cycle	Pass Cars	Single Unit	Combo Unit	Day Total
Town.....Norwalk						
Station.....310	28-Jul					
Location.....41.146066, -73.427985	Tue					
Posted Speed Limit.....25 MPH						
A.K.A.....310 2310	12:00am					0
2015-Major Collector 5.....2015-Urban	01:00am					0
HPMS Section ID.....	02:00am					0
Start Report.....28-Jul-2020 09:00AM	03:00am					0
All Vehicle Peak Hour.....29-Jul-2020 05:00PM	04:00am					0
End Report.....30-Jul-2020 09:00AM	05:00am					0
Annualized ADT.....2100	06:00am					0
24-Hour Count.....2226 * G4(0.95) = 2114.7	07:00am					0
Day 1.....+ 2226 * G4(0.95) = 4229.4	08:00am	x	x	x	x	0
UnRounded AADT.....4229.4 / 2 = 2114.7	09:00am	.	127	7	1	135
REV 2020 Tue 28-Jul -this report-.....2100	10:00am	.	114	10	.	124
OK 2017 Tue 07-Nov3600	11:00am	.	119	8	.	127
REV 2014 Mon 06-Oct4300	12:00pm	1	183	11	.	195
REV 2011 Wed 24-Aug4200	01:00pm	.	155	5	.	160
OK 2008 Tue 15-Apr3900	02:00pm	1	148	3	.	152
	03:00pm	1	167	6	.	174
	04:00pm	.	153	6	1	160
Count Percent Veh.Feet						
Motorcycles.....19 0.43% 0.0- 8.0	05:00pm	4	192	5	.	201
Passenger Cars.....4234 95.36% 8.0-25.0	06:00pm	2	150	6	.	158
Single-Unit Trucks...181 4.08% 25.0-50.0	07:00pm	.	90	4	.	94
Combination Trucks...6 0.14% 50.0 >	08:00pm	.	82	.	.	82
Total Vehicles.....4440	09:00pm	.	44	1	.	45
	10:00pm	.	25	.	.	25
	11:00pm	.	23	.	.	23
Single Combo						
Peak Hour Truck Volume.....5 0	Totals	9	1772	72	2	1855
% Total Peak Hour Volume.....2.3% 0.0%	Percent	0.49	95.53	3.88	0.11	
24 Hour Truck Volume.....86 3						
All-Vehicle Annualized ADT.....2100 2100	29-Jul					
24Hour T-Vol % of A-V AADT.....4.1% 0.1%	Wed					
PeakHr T-Vol % of A-V AADT.....0.2% 0.0%	12:00am	.	11	.	.	11
K-Factor (Peak/AADT).....10.1% 10.1%	01:00am	.	6	.	.	6
(AADT & Legacy AADT match)	02:00am	.	1	.	.	1
	03:00am	.	4	1	.	5
	04:00am	.	7	1	.	8
	05:00am	.	13	4	.	17
	06:00am	1	46	3	.	50
	07:00am	.	115	6	.	121
	08:00am	2	145	5	.	152
	09:00am	.	112	5	.	117
	10:00am	1	117	7	1	126
	11:00am	.	123	11	1	135
	12:00pm	1	158	7	.	166
	01:00pm	.	158	9	.	167
	02:00pm	.	129	4	.	133
	03:00pm	.	134	7	.	141
	04:00pm	1	142	4	.	147
	05:00pm	1	207	5	.	213
	06:00pm	1	168	4	1	174
	07:00pm	.	117	1	.	118
	08:00pm	.	71	.	.	71
	09:00pm	.	78	.	.	78
	10:00pm	.	40	2	.	42
	11:00pm	.	27	.	.	27
	Totals	8	2129	86	3	2226
	Percent	0.36	95.64	3.86	0.13	
30-Jul						
	Thru					
	12:00am	.	8	.	.	8
	01:00am	.	8	.	.	8
	02:00am	.	2	.	.	2
	03:00am	.	4	.	.	4
	04:00am	.	4	3	.	7
	05:00am	.	23	1	.	24
	06:00am	.	57	5	.	62
	07:00am	2	84	6	1	93

08:00am	.	143	8	.	151
09:00am	x	x	x	x	0
10:00am					0
11:00am					0
12:00pm					0
01:00pm					0
02:00pm					0
03:00pm					0
04:00pm					0
05:00pm					0
06:00pm					0
07:00pm					0
08:00pm					0
09:00pm					0
10:00pm					0
11:00pm					0
Totals	2	333	23	1	359
Percent	0.56	92.76	6.41	0.28	

Status: REV

NRWA-310 - Combined - n/s

[338]-Glover Avenue - 0.28 mi South of Oakwood Avenue

Collected during COVID-19 epoch	Hour	MPH															Total Vol.
		0-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-60	71-75	MPH 76+		
Town.....Norwalk																	
Station.....310																	
Location.....41.146066,-73.427985																	
Posted Speed Limit.....25 MPH																	
A.K.A.....310 2310																	
2015-Major Collector 5.....2015-Urban																	
HPMS Section ID.....																	
Start Report.....28-Jul-2020 09:00AM																	
End Report.....30-Jul-2020 09:00AM																	
All Vehicles Average Speed..... 30 MPH																	
Total Vehicles.....4440																	
Percentile Sampling Period... 9AM to 4PM	08:00am	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	135
Vehicle Too Close.....5 secs	09:00am	2	6	17	37	52	18	2	1	124
Vehicle Too Slow..... < 10 MPH	10:00am	.	6	16	48	37	13	3	1	127
Speed Lower Limit....15 MPH below Posted	11:00am	3	5	12	46	44	14	2	1	195
	12:00pm	3	4	23	74	59	27	5	160
	01:00pm	.	3	17	50	61	21	8	152
All Report Days	02:00pm	1	5	17	50	57	16	5	1	174
85th Percentile Speed.....35.3 MPH	03:00pm	2	3	26	60	60	21	2	160
50th Percentile Speed.....30.1 MPH	04:00pm	1	4	27	53	58	15	2	201
10 MPH Pace (68%).....26-35 MPH	05:00pm	2	3	28	72	73	21	2	158
All Hours Total Vehicles.....4440	06:00pm	.	5	24	64	45	19	1	94
In-Period Total Vehicles.....2052	07:00pm	1	1	13	25	41	10	3	82
Omitted Vehicles Too Close (14%)....293	08:00pm	2	4	8	32	22	11	2	1	45
Omitted Vehicles Too Slow (0%)....1	09:00pm	1	.	5	16	18	3	2	25
Sampled Vehicles (86%).....1758	10:00pm	.	2	2	8	12	1	23
Tuesday 28-Jul-2020	11:00pm	.	2	3	6	4	6	2	1855
85th Percentile Speed.....35.1 MPH	Totals	18	53	238	641	643	216	41	5	0	0	0	0	0	0	0	
50th Percentile Speed.....30.1 MPH	Percent	0.97	2.86	12.83	34.56	34.66	11.64	2.21	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10 MPH Pace (69%).....26-35 MPH	Wednesday																
All Hours Total Vehicles.....1855	12:00am	1	.	2	2	4	2	11
In-Period Total Vehicles.....1067	01:00am	2	1	1	.	2	6
Omitted Vehicles Too Close (16%)....167	02:00am	.	.	.	1	1
Omitted Vehicles Too Slow (0%)....1	03:00am	.	.	.	2	3	5
Sampled Vehicles (84%).....899	04:00am	.	.	.	2	4	1	1	8
	05:00am	2	3	4	3	2	3	17
Wednesday 29-Jul-2020	06:00am	.	4	8	9	21	7	1	50
85th Percentile Speed.....35.5 MPH	07:00am	1	1	13	42	47	15	2	121
50th Percentile Speed.....30.2 MPH	08:00am	2	1	21	59	45	19	5	152
10 MPH Pace (68%).....26-35 MPH	09:00am	1	7	14	39	43	9	4	117
All Hours Total Vehicles.....2226	10:00am	1	4	15	35	44	21	4	2	126
In-Period Total Vehicles.....985	11:00am	.	2	15	56	46	14	2	135
Omitted Vehicles Too Close (13%)....126	12:00pm	.	3	22	52	61	22	5	1	166
Omitted Vehicles Too Slow (0%)....0	01:00pm	1	4	25	54	57	24	2	167
Sampled Vehicles (87%).....859	02:00pm	.	3	15	34	51	26	2	2	133
	03:00pm	1	4	8	49	52	23	2	2	141
Thursday 30-Jul-2020	04:00pm	.	5	10	48	59	19	6	147
85th Percentile Speed.....N/A	05:00pm	1	5	20	77	80	25	4	1	213
50th Percentile Speed.....N/A	06:00pm	1	6	17	53	68	23	4	1	174
10 MPH Pace ().....0	07:00pm	.	13	44	38	18	5	118
All Hours Total Vehicles.....359	08:00pm	1	11	37	17	5	71
In-Period Total Vehicles.....0	09:00pm	.	8	27	29	9	2	2	78
Omitted Vehicles Too Close (0%)....0	10:00pm	.	6	8	16	5	6	1	42
Omitted Vehicles Too Slow (0%)....0	11:00pm	.	2	2	14	4	4	4	27
Sampled Vehicles ().....0	Totals	15	62	252	755	782	295	53	11	0	1	0	0	0	0	0	2226
	Percent	0.67	2.79	11.32	33.92	35.13	13.25	2.38	0.49	0.00	0.04	0.00	0.00	0.00	0.00	0.00	
Thursday	30-Jul																
12:00am	.	.	2	.	3	2	1	8
01:00am	.	1	1	3	1	2	8
02:00am	.	.	1	.	.	1	2
03:00am	.	.	2	1	.	1	4
04:00am	.	.	2	2	2	2	.	1	7
05:00am	.	1	4	10	7	2	2	.	1	24
06:00am	3	6	7	17	18	8	2	.	.	1	62
07:00am	.	2	5	34	33	16	3	93
08:00am	1	6	17	57	51	16	3	151
09:00am	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
10:00am																	
11:00am																	
12:00pm																	
01:00pm																	
02:00pm																	
03:00pm																	
04:00pm																	
05:00pm																	
06:00pm																	
07:00pm																	
08:00pm																	
09:00pm																	
10:00pm																	
11:00pm																	
Totals	4	16	41	124	115	46	12	0	0	0	1	0	0	0	0	0	359
Percent	1.11	4.46	11.42	34.54	32.03	12.81	3.34	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	

Status: OK

NRWA-511 - Combined - n/s

[338]-Glover Avenue - 0.94 mi South of US 7

Collected during COVID-19 epoch	28-Jul	29-Jul
	Tue	Wed
Town.....Norwalk	12:00am	6
Station.....511	01:00am	3
Location.....41.154903,-73.426001	02:00am	1
Posted Speed Limit.....25 MPH	03:00am	6
2015-Major Collector 5.....2015-Urban	04:00am	6
Start Report.....28-Jul-2020 09:00AM	05:00am	24
End Report.....29-Jul-2020 09:00AM	06:00am	83
Annualized ADT.....2400	07:00am	129
24-Hour Count.... 2504 * G4(0.95) = 2378.8	08:00am	162
UnRounded AADT.....2378.8 / 1 = 2378.8	09:00am	160
OK 2020 Tue 28-Jul -this report-...2400	10:00am	139
OK 2017 Mon 16-Oct3700	11:00am	163
REV 2011 Wed 24-Aug4000	12:00pm	180
OK 2008 Wed 16-Apr3800	01:00pm	176
	02:00pm	169
	03:00pm	186
	04:00pm	165
	05:00pm	234
	06:00pm	160
	07:00pm	128
	08:00pm	106
	09:00pm	53
	10:00pm	31
	11:00pm	34
	Totals	2084
		420

Status: OK

NRWA-511 - Combined - n/s

[338]-Glover Avenue - 0.94 mi South of US 7

Collected during COVID-19 epoch

	Hour	Motor Cycle	Pass Cars	Single Unit	Combo Unit	Day Total
Town.....	Norwalk					
Station.....	511					
Location.....	41.154903,-73.426001	28-Jul Tue				
Posted Speed Limit.....	25 MPH					
2015-Major Collector 5.....	2015-Urban	12:00am				0
Start Report.....	28-Jul-2020 09:00AM	01:00am				0
All Vehicle Peak Hour.....	N/A	02:00am				0
End Report.....	29-Jul-2020 09:00AM	03:00am				0
Annualized ADT.....	2400	04:00am				0
24-Hour Count.....	2504 * G4(0.95) = 2378.8	05:00am				0
UnRounded AADT.....	2378.8 / 1 = 2378.8	06:00am				0
OK 2020 Tue 28-Jul -this report-.....	2400	07:00am				0
OK 2017 Mon 16-Oct	3700	08:00am	x	x	x	0
REV 2011 Wed 24-Aug	4000	09:00am	.	142	18	160
OK 2008 Wed 16-Apr	3800	10:00am	.	124	15	139
		11:00am	.	157	5	163
	Count	Percent	Veh. Feet	12:00pm		
Motorcycles.....	4	0.16%	0.0- 8.0	01:00pm	.	
Passenger Cars.....	2387	95.33%	8.0-25.0	02:00pm	.	
Single-Unit Trucks...	109	4.35%	25.0-50.0	03:00pm	.	
Combination Trucks...	4	0.16%	50.0 >	04:00pm	2	
Total Vehicles.....	2504			05:00pm	1	
				06:00pm	.	
	Single	Combo		07:00pm	.	
Peak Hour Truck Volume.....	0	0	08:00pm	.	127	1
% Total Peak Hour Volume.....	0.0%	0.0%	09:00pm	.	104	2
24 Hour Truck Volume.....	0	0	10:00pm	.	53	.
All-Vehicle Annualized ADT.....	2400	2400	11:00pm	.	30	1
24Hour T-Vol % of A-V AADT.....	0.0%	0.0%	Totals	4	1989	87
PeakHr T-Vol % of A-V AADT.....	0.0%	0.0%	Percent	0.19	95.44	4.17
K-Factor (Peak/AADT)	0.0%	0.0%		29-Jul		0.19
(AADT & Legacy AADT match)				Wed		
				12:00am	.	6
				01:00am	.	3
				02:00am	.	1
				03:00am	.	5
				04:00am	.	1
				05:00am	.	21
				06:00am	.	80
				07:00am	.	122
				08:00am	.	155
				09:00am		.
				10:00am		0
				11:00am		0
				12:00pm		0
				01:00pm		0
				02:00pm		0
				03:00pm		0
				04:00pm		0
				05:00pm		0
				06:00pm		0
				07:00pm		0
				08:00pm		0
				09:00pm		0
				10:00pm		0
				11:00pm		0
	Totals	0	398	22	0	420
	Percent	0.00	94.76	5.24	0.00	

Status: OK

NRWA-511 - Combined - n/s

[338]-Glover Avenue - 0.94 mi South of US 7

Collected during COVID-19 epoch	Hour	MPH														Total Vol.
		0-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-60	71-75	MPH 76+	
Town.....Norwalk																
Station.....511																
Location.....41.154903,-73.426001																
Posted Speed Limit.....25 MPH																
2015-Major Collector 5.....2015-Urban																
Start Report.....28-Jul-2020 09:00AM																
End Report.....29-Jul-2020 09:00AM																
All Vehicles Average Speed.....20 MPH	04:00am	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Total Vehicles.....2508	05:00am	30	66	56	8	160
Percentile Sampling Period...9AM to 4PM	06:00am	26	59	49	5	139
Vehicle Too Close.....5 secs	07:00am															
Vehicle Too Slow.....< 10 MPH	08:00am	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Speed Lower Limit....15 MPH below Posted	09:00am	30	68	55	8	2	163
All Report Days	10:00am	30	68	55	8	180
85th Percentile Speed.....23.3 MPH	12:00pm	6	52	104	17	1	176
50th Percentile Speed.....19.7 MPH	01:00pm	17	82	63	14	169
10 MPH Pace (84%).....16-25 MPH	02:00pm	13	90	58	6	2	186
All Hours Total Vehicles.....2508	03:00pm	28	82	65	10	1	165
In-Period Total Vehicles.....1177	04:00pm	27	84	44	10	234
Omitted Vehicles Too Close (19%)....218	05:00pm	12	101	98	21	2	160
Omitted Vehicles Too Slow (3%)....31	06:00pm	11	47	87	13	1	1	128
Sampled Vehicles (79%).....932	07:00pm	10	49	61	7	1	106
Tuesday 28-Jul-2020	08:00pm	6	50	45	5	53
85th Percentile Speed.....23.3 MPH	10:00pm	4	16	11	31
50th Percentile Speed.....19.7 MPH	11:00pm	4	13	16	.	1	34
10 MPH Pace (84%).....16-25 MPH	Totals	227	882	833	130	9	2	1	0	0	0	0	0	0	0	2084
All Hours Total Vehicles.....2084	Percent	10.89	42.32	39.97	6.24	0.43	0.10	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	420
In-Period Total Vehicles.....1173	Wednesday															
Omitted Vehicles Too Close (19%)....218	29-Jul															6
Omitted Vehicles Too Slow (3%)....30	12:00am	.	5	1	3
Sampled Vehicles (79%).....929	01:00am	.	1	2	1
	02:00am	.	.	1	6
Wednesday 29-Jul-2020	03:00am	2	4	6
85th Percentile Speed.....23.1 MPH	04:00am	1	4	1	6
50th Percentile Speed.....20.5 MPH	05:00am	1	12	10	1	24
10 MPH Pace ().....N/A	06:00am	10	35	29	8	1	83
All Hours Total Vehicles.....424	07:00am	13	53	53	9	1	129
In-Period Total Vehicles.....4	08:00am	8	61	81	11	1	162
Omitted Vehicles Too Close (0%)....0	09:00am															
Omitted Vehicles Too Slow (25%)....1	10:00am															
Sampled Vehicles (75%).....3	11:00am															
	12:00pm															
	01:00pm															
	02:00pm															
	03:00pm															
	04:00pm															
	05:00pm															
	06:00pm															
	07:00pm															
	08:00pm															
	09:00pm															
	10:00pm															
	11:00pm															
Totals	35	175	178	29	3	0	0	0	0	0	0	0	0	0	0	420
Percent	8.33	41.67	42.38	6.90	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Status: OK

NRWA-412 - Combined - e/w

[1116]-Grist Mill Rd - 0.02 mi West of Old Belden Hill Rd

Collected during COVID-19 epoch	28-Jul	29-Jul
	Tue	Wed
Town.....Norwalk	12:00am	28
Station.....412	01:00am	13
Location..... 41.155326,-73.429768	02:00am	4
Posted Speed Limit.....25 MPH	03:00am	15
2015-Minor Arterial 4.....2015-Urban	04:00am	24
Start Report.....28-Jul-2020 10:00AM	05:00am	89
End Report.....29-Jul-2020 10:00AM	06:00am	298
Annualized ADT.....10000	07:00am	705
24-Hour Count....10546 * G4(0.95) = 10018.7	08:00am	900
UnRounded AADT.....10018.7 / 1 = 10018.7	09:00am	726
OK 2020 Tue 28-Jul -this report---10000	10:00am	x
OK 2017 Mon 16-Oct10400	11:00am	654
REV 2011 Wed 24-Aug10900	12:00pm	697
OK 2008 Mon 28-Apr9700	01:00pm	760
	02:00pm	787
	03:00pm	744
	04:00pm	741
	05:00pm	839
	06:00pm	858
	07:00pm	631
	08:00pm	396
	09:00pm	272
	10:00pm	201
	11:00pm	97
	Totals	67
		7744
		2802

Status: REV

NRWA-414 - Combined - n/s

Route 7 - 4.05 mi East of Glover Avenue

		28-Jul Tue	29-Jul Wed	30-Jul Thu
Collected during COVID-19 epoch				
Town.....	Norwalk	12:00am	99	168
Station.....	414	01:00am	51	70
Location.....	41.155425,-73.424693	02:00am	38	37
Posted Speed Limit.....	25 MPH	03:00am	50	55
A.K.A.....	2414	04:00am	79	89
2015-Principal Arterial - Other 3...2015-Urban		05:00am	422	415
HPMS Section ID.....		06:00am	1014	986
Start Report.....	28-Jul-2020 09:00AM	07:00am	1421	1386
End Report.....	30-Jul-2020 08:00AM	08:00am	x	x
Annualized ADT.....	22500	09:00am	1476	1344
24-Hour Count.....	23420 * G4(0.95) = 22249.0	10:00am	1435	1420
Day 1.....	+24017 * G4(0.95) = 45065.1	11:00am	1568	1431
UnRounded AADT.....	45065.1 / 2 = 22532.6	12:00pm	1475	1598
REV 2020 Tue 28-Jul -this report-	22500	01:00pm	1613	1658
OK 2017 Tue 07-Nov	34200	02:00pm	1544	1637
REV 2014 Mon 06-Oct	28000	03:00pm	1604	1604
REV 2011 Mon 22-Aug	28200	04:00pm	1591	1691
OK 2008 Wed 16-Apr	30900	05:00pm	1576	1595
		06:00pm	1515	1560
		07:00pm	1182	1321
		08:00pm	915	1034
		09:00pm	580	654
		10:00pm	390	468
		11:00pm	236	282
		Totals	18700	24017
				3206

Status: OK

NRWA-415 - Combined - n/s

Route 719 - 1.98 mi South of Grist Mill Road

Collected during COVID-19 epoch	28-Jul Tue	29-Jul Wed
Town.....Norwalk	12:00am	46
Station.....415	01:00am	24
Location.....41.154453,-73.42417	02:00am	15
Posted Speed Limit.....35 MPH	03:00am	20
A.K.A.....415 2415	04:00am	28
2015-Principal Arterial - Other 3...2015-Urban	05:00am	108
Start Report.....28-Jul-2020 08:00AM	06:00am	290
End Report.....29-Jul-2020 08:00AM	07:00am	x 493
Annualized ADT.....10500	08:00am	677 x
24-Hour Count.....11024 * G4(0.95) = 10472.8	09:00am	643
UnRounded AADT.....10472.8 / 1 = 10472.8	10:00am	709
OK 2020 Tue 28-Jul -this report-.....10500	11:00am	847
OK 2017 Mon 16-Oct13400	12:00pm	851
REV 2011 Mon 22-Aug13300	01:00pm	880
OK 2008 Wed 16-Apr15300	02:00pm	827
	03:00pm	874
	04:00pm	755
	05:00pm	837
	06:00pm	627
	07:00pm	522
	08:00pm	414
	09:00pm	278
	10:00pm	165
	11:00pm	94
	Totals	10000 1024

Status: OK

NRWA-416 - Combined - n/s

Route 7 - 4.14 mi North of SR 719 (Main Ave)

		28-Jul Tue	29-Jul Wed	30-Jul Thu
Collected during COVID-19 epoch				
Town.....	Norwalk	12:00am	99	155
Station.....	416	01:00am	55	74
Location.....	41.155718,-73.423525	02:00am	45	44
Posted Speed Limit.....	35 MPH	03:00am	45	56
A.K.A.....	2416	04:00am	88	98
2015-Principal Arterial - Other	3...2015-Urban	05:00am	461	452
HPMS Section ID.....	.	06:00am	1105	1110
Start Report.....	28-Jul-2020 07:00AM	07:00am	972	1651
End Report.....	30-Jul-2020 09:00AM	08:00am	1813	1817
Annualized ADT.....	26600	09:00am	1715	1687
24-Hour Count.....	27145 * G4(0.95) = 25787.8	10:00am	1682	1780
Day 1.....	+28779 * G4(0.95) = 53127.8	11:00am	1883	1767
UnRounded AADT.....	53127.8 / 2 = 26563.9	12:00pm	1882	1973
OK 2020 Tue 28-Jul -this report-	26600	01:00pm	1886	2035
OK 2017 Tue 07-Nov	40900	02:00pm	1927	1964
REV 2014 Mon 06-Oct	28100	03:00pm	1898	2029
REV 2011 Mon 22-Aug	32900	04:00pm	2020	2008
OK 2008 Wed 16-Apr	34700	05:00pm	2021	2076
		06:00pm	1741	1880
		07:00pm	1381	1540
		08:00pm	1094	1176
		09:00pm	651	726
		10:00pm	429	478
		11:00pm	252	294
		Totals	25247	28779
				3865

Status: OK

NRWA-510 - Combined - n/s

Route 719 - 1.1 mi North of Route 15 NB Off Ramp (Exit 40b)

		29-Jul Wed	30-Jul Thu	31-Jul Fri
Collected during COVID-19 epoch				
Town.....	Norwalk	12:00am	84	75
Station.....	510	01:00am	50	64
Location.....	41.142383,-73.425718	02:00am	38	38
Posted Speed Limit.....	30 MPH	03:00am	34	23
A.K.A.....	2510	04:00am	69	47
2015-Principal Arterial - Other	3...2015-Urban	05:00am	197	191
HPMS Section ID.....		06:00am	488	491
Start Report.....	29-Jul-2020 09:00AM	07:00am	716	708
End Report.....	31-Jul-2020 08:00AM	08:00am	x	815
Annualized ADT.....	14100	09:00am	910	806
24-Hour Count.....	14961 * G4(0.95) = 14212.9	10:00am	951	955
Day 1.....	+14769 * G4(0.95) = 28243.5	11:00am	1004	1014
UnRounded AADT.....	28243.5 / 2 = 14121.8	12:00pm	1144	1114
OK 2020 Wed 29-Jul -this report-	14100	01:00pm	1096	1107
REV 2014 Mon 06-Oct	21800	02:00pm	1033	1114
REV 2011 Mon 22-Aug	20600	03:00pm	1056	1119
OK 2008 Tue 15-Apr	22300	04:00pm	1042	828
		05:00pm	1149	1124
		06:00pm	975	1009
		07:00pm	694	690
		08:00pm	571	558
		09:00pm	424	400
		10:00pm	261	269
		11:00pm	160	171
Totals		12470	14769	1637

APPENDIX B
Collision History Summary

Intersection Collision History Summary**Intersection:****Grist Mill Road****at****U.S. Route 7****COLLISION TYPE**

	2016	2017	2018	2019	2020	Total	Percent
Rear-End	10	13	14	21	7	65	49.6%
Sideswipe, Same Direction	8	9	12	11	2	42	32.1%
Fixed Object	2	2	3	2	1	10	7.6%
Angle	3	2	2	0	0	7	5.3%
Other/Unknown	1	1	0	1	0	3	2.3%
Non-Fixed Object	0	0	2	0	0	2	1.5%
Head-On	1	0	0	0	0	1	0.8%
Sideswipe, Opposite Direction	0	0	0	1	0	1	0.8%
TOTAL	25	27	33	36	10	131	100%

SEVERITY

	2016	2017	2018	2019	2020	Total	Percent
Fatal	0	0	0	0	0	0	0.0%
Serious Injury	0	0	0	0	0	0	0.0%
Minor Injury / Property Damage Only (PDO)	25	27	33	36	10	131	100.0%
TOTAL	25	27	33	36	10	131	100%

Intersection Collision History Summary**Intersection:****Grist Mill Road****at****Glover Avenue****COLLISION TYPE**

	2016	2017	2018	2019	2020	Total	Percent
Rear-End	5	12	6	18	5	46	70.8%
Sideswipe, Same Direction	2	3	1	2	0	8	12.3%
Angle	0	2	1	2	1	6	9.2%
Non-Fixed Object	1	0	2	0	0	3	4.6%
Fixed Object	1	0	0	0	0	1	1.5%
Other/Unknown	0	0	1	0	0	1	1.5%
TOTAL	9	17	11	22	6	65	100%

SEVERITY

	2016	2017	2018	2019	2020	Total	Percent
Fatal	0	0	0	0	0	0	0.0%
Serious Injury	0	0	0	0	0	0	0.0%
Minor Injury / Property Damage Only (PDO)	9	17	11	22	6	65	100.0%
TOTAL	9	17	11	22	6	65	100%

Intersection Collision History Summary**Intersection:****Grist Mill Road****at****Main Avenue****COLLISION TYPE**

	2016	2017	2018	2019	2020	Total	Percent
Rear-End	8	12	8	15	10	53	47.7%
Sideswipe, Same Direction	4	3	7	11	3	28	25.2%
Angle	2	1	2	10	2	17	15.3%
Non-Fixed Object	1	1	4	1	0	7	6.3%
Fixed Object	0	1	0	0	1	2	1.8%
Head-On	0	1	0	0	1	2	1.8%
Other/Unknown	0	0	2	0	0	2	1.8%
TOTAL	15	19	23	37	17	111	100%

SEVERITY

	2016	2017	2018	2019	2020	Total	Percent
Fatal	0	0	0	0	0	0	0.0%
Serious Injury	0	0	0	1	0	1	0.9%
Minor Injury / Property Damage Only (PDO)	15	19	23	36	17	110	99.1%
TOTAL	15	19	23	37	17	111	100%

Intersection Collision History Summary

Intersection:

Main Avenue

at

Glover Avenue and
Creeping Hemlock Drive

COLLISION TYPE

	2016	2017	2018	2019	2020	Total	Percent
Rear-End	1	7	9	6	0	23	35.4%
Angle	0	0	2	10	3	15	23.1%
Sideswipe, Same Direction	3	1	3	3	2	12	18.5%
Other/Unknown	0	2	2	0	1	5	7.7%
Non-Fixed Object	0	1	1	2	1	5	7.7%
Backing	1	1	0	0	0	2	3.1%
Head-On	0	0	1	0	1	2	3.1%
Fixed Object	0	0	0	1	0	1	1.5%
TOTAL	5	12	18	22	8	65	100%

SEVERITY

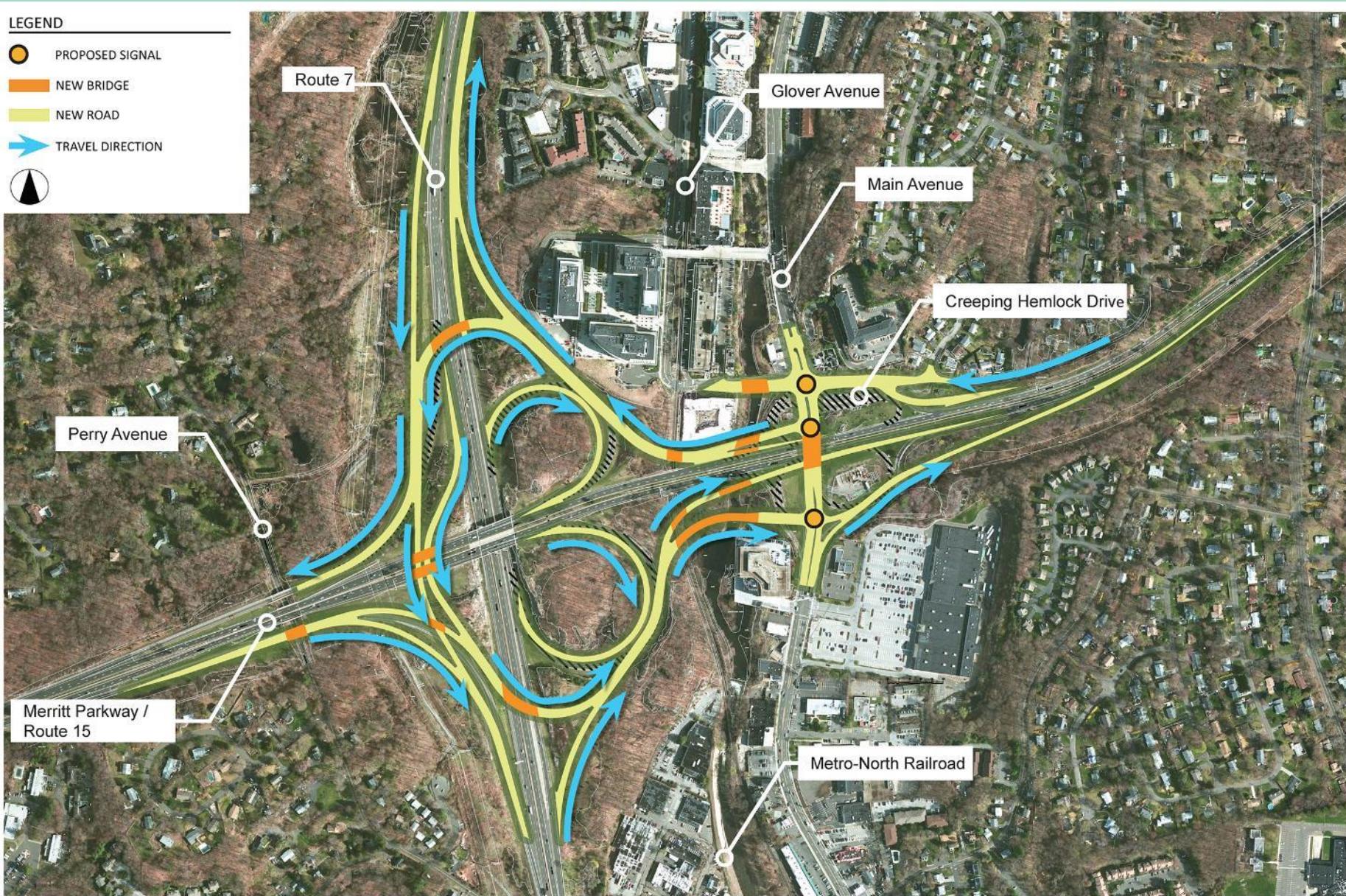
	2016	2017	2018	2019	2020	Total	Percent
Fatal	0	0	0	0	0	0	0.0%
Serious Injury	0	0	0	0	0	0	0.0%
Minor Injury / Property Damage Only (PDO)	5	12	18	22	8	65	100.0%
TOTAL	5	12	18	22	8	65	100%

APPENDIX C
U.S. Route 7 and Route 15
Interchange Concepts

Tighe&Bond

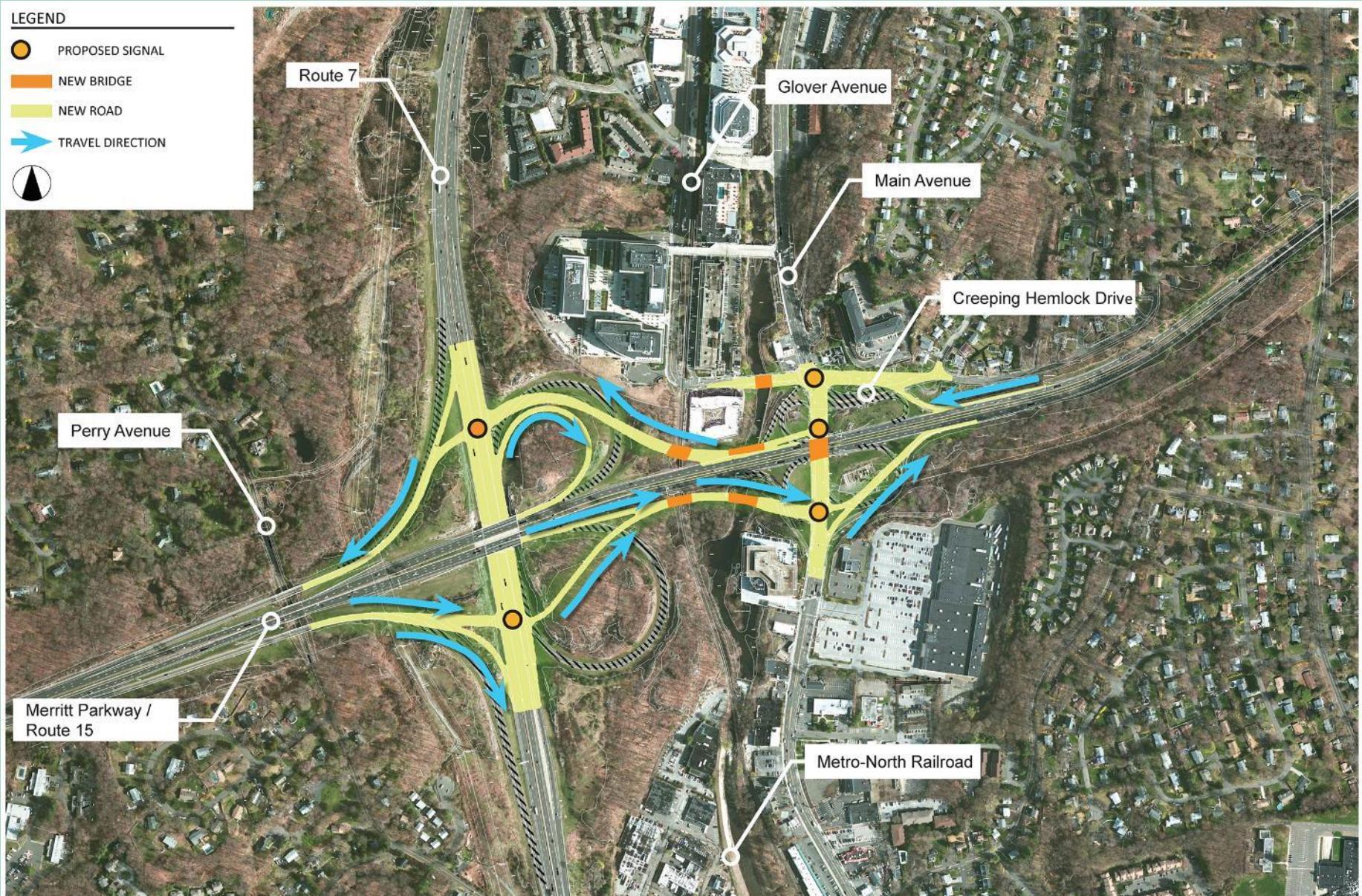


Alternative 21D



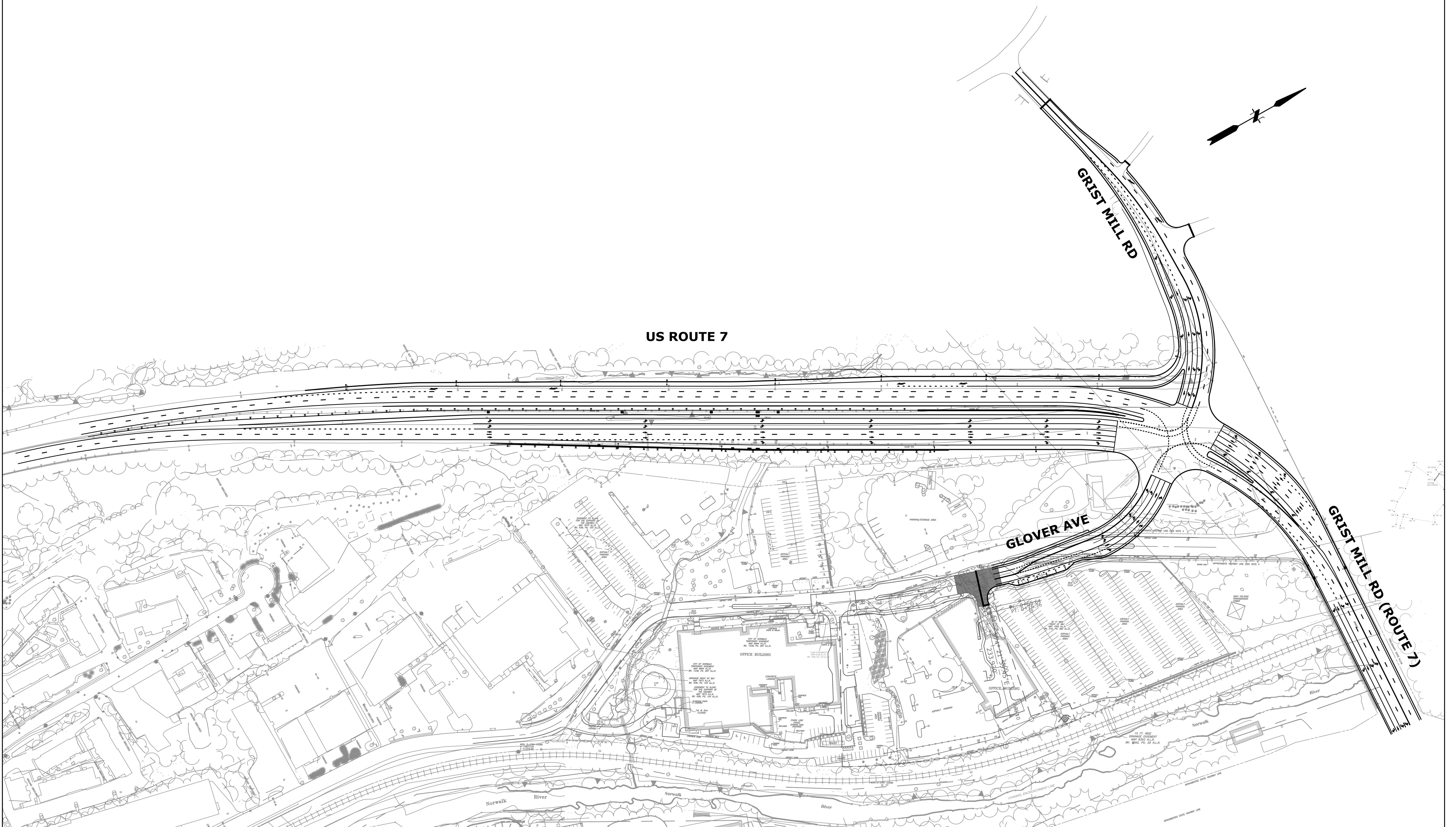


Alternative 26



APPENDIX D

Grist Mill Road and Glover
Avenue Realigned Concept



1.	DATE	DESCRIPTION	DESIGNER	REVIEWER
	XX/XX	XX		

SEAL

SEAL

SCALE:
HORZ.: 1" = 100'
VERT.:
DATUM:
HORZ.:
VERT.:
20 10 0 20
GRAPHIC SCALE



FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

BUILDING AND LAND TECHNOLOGY
OVERALL
PAVEMENT MARKING & SIGNING PLAN
ROUTE 7 AT GRIST MILL ROAD
INTERSECTION RECONSTRUCTION
NORWALK CONNECTICUT

PROJ. No.: 20110557.T50
DATE: SEPTEMBER 2017
PVT

APPENDIX E
Main Avenue Concept

Tighe&Bond



BL Companies
ARCHITECTURE
ENGINEERING
ENVIRONMENTAL
LAND SURVEYING

355 Research Parkway
Meriden, CT 06450
(203) 630-1406
(203) 630-2615 Fax

PREFERRED ALTERNATIVE

MODIFY END OF ROUTE 7 EXPRESSWAY & MAIN AVE IMPROVEMENTS
U.S. ROUTE 7 (MAIN AVE AND DANBURY ROAD)
NORWALK AND WILTON, CT

Designed
Drawn
Checked
Approved
Scale
Project No.
Date
CAD File PP_MSH_102-020_Preferred - 2.dgn

MS
BT
KR
1"=80'
102-020
04/2020

PREF-1

CONCEPTUAL LAYOUT

APPENDIX F
Capacity Analysis Methodology

CAPACITY ANALYSIS METHODOLOGY

A primary result of capacity analysis is the assignment of levels of service to traffic facilities under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM).¹ The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year. A description of the operating condition under each level of service is provided below:

- *LOS A* describes conditions with little to no delay to motorists.
- *LOS B* represents a desirable level with relatively low delay to motorists.
- *LOS C* describes conditions with average delays to motorists.
- *LOS D* describes operations where the influence of congestion becomes more noticeable. Delays are still within an acceptable range.
- *LOS E* represents operating conditions with high delay values. This level is considered by many agencies to be the limit of acceptable delay.
- *LOS F* is considered to be unacceptable to most drivers with high delay values that often occur, when arrival flow rates exceed the capacity of the intersection.

Signalized Intersections

Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay is used to establish the operating characteristics for an intersection or an approach to an intersection. Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a lane group's capacity at an intersection. A v/c ratio of ≥ 1.00 represents conditions when the traffic signal cycle capacity is fully utilized and indicates a capacity failure. The level-of-service criteria for signalized intersections are shown in Table A-1.

¹*Highway Capacity Manual, 6TH Edition: A Guide for Multimodal Mobility Analysis*. Washington, D.C.: Transportation Research Board, 2016.

APPENDIX G1
CAPACITY ANALYSES

2025 Background Conditions
Weekday Morning Peak Hour
Alternative 21-D

2025 Background Alt. 21D

Weekday AM Peak

101: U.S. Route 7 & Glover Avenue & Grist Mill Road

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑	↑↑	↑↑	↑↑	↑	↑↑	↑↑↑	↑
Traffic Volume (vph)	260	10	880	160	0	63	480	1650	333	101	1180	100
Future Volume (vph)	260	10	880	160	0	63	480	1650	333	101	1180	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	215		215	600		250	150		250
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	100			200			150			175		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)	30			30			40			30		
Link Distance (ft)	404			896			981			1034		
Travel Time (s)	9.2			20.4			16.7			23.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	11	957	174	0	68	522	1793	362	110	1283	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	283	11	957	174	0	68	522	1793	362	110	1283	109
Turn Type	Prot	NA	Free	Prot		pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases			Free			8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	9.0		5.0	9.0	5.0	5.0	15.0	5.0	5.0	15.0	5.0
Minimum Split (s)	9.0	13.5		9.0	13.5	9.0	9.0	20.5	9.0	9.0	20.5	9.0
Total Split (s)	16.0	14.6		15.0	13.6	13.0	28.0	77.4	15.0	13.0	62.4	16.0
Total Split (%)	13.3%	12.2%		12.5%	11.3%	10.8%	23.3%	64.5%	12.5%	10.8%	52.0%	13.3%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	1.5		1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	C-Min	None	None	C-Min	None	
Act Effct Green (s)	15.6	9.0	120.0	12.9		12.2	22.6	78.7	97.1	12.2	68.3	89.4
Actuated g/C Ratio	0.13	0.08	1.00	0.11		0.10	0.19	0.66	0.81	0.10	0.57	0.74
v/c Ratio	0.63	0.08	0.60	0.47		0.42	0.81	0.77	0.28	0.61	0.64	0.09
Control Delay	55.7	53.1	1.7	55.2		59.0	57.0	18.2	4.0	62.3	21.0	5.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	53.1	1.7	55.2		59.0	57.0	18.2	4.0	62.3	21.0	5.9
LOS	E	D	A	E		E	E	B	A	E	C	A
Approach Delay		14.4			56.3			23.9			22.9	
Approach LOS		B			E			C			C	
Queue Length 50th (ft)	108	8	0	64		49	200	498	52	78	356	26
Queue Length 95th (ft)	141	28	0	105		101	257	675	123	#175	534	49



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		324			816			901			954	
Turn Bay Length (ft)	250		250	215		215	600		250	150		250
Base Capacity (vph)	448	156	1583	368		161	700	2321	1280	179	2015	1181
Starvation Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.07	0.60	0.47		0.42	0.75	0.77	0.28	0.61	0.64	0.09

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 7 (6%), Referenced to phase 2:NET and 6:SWT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 22.9

Intersection LOS: C

Intersection Capacity Utilization 77.0%

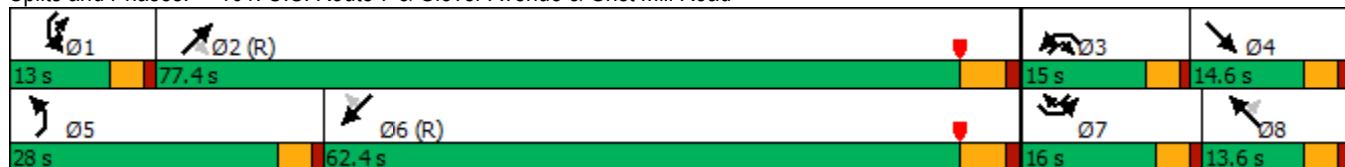
ICU Level of Service D

Analysis Period (min) 15

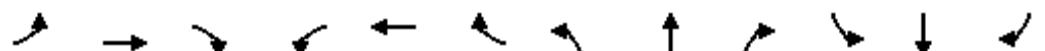
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 101: U.S. Route 7 & Glover Avenue & Grist Mill Road



	↑	→	↓	↗	↖	↙	↖	↗	↑	↗	↖	↓	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑	↑	↑	↑↑	↑↑	↑↑	↑↑	↑↑	0	↑	↑↑	↑↑	
Traffic Volume (vph)	1463	0	510	0	10	10	50	410	0	10	420	1321	
Future Volume (vph)	1463	0	510	0	10	10	50	410	0	10	420	1321	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	370		0	0		0	200		0	100		225	
Storage Lanes	1		1	0		0	2		0	1		2	
Taper Length (ft)	300			25		300			25				
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95	0.97	0.95	0.95	1.00	0.95	0.88	
Frt			0.850		0.925							0.850	
Flt Protected	0.950					0.950			0.950				
Satd. Flow (prot)	3433	1863	1583	0	3274	0	3433	3539	0	1770	3539	2787	
Flt Permitted	0.950					0.950			0.494				
Satd. Flow (perm)	3433	1863	1583	0	3274	0	3433	3539	0	920	3539	2787	
Right Turn on Red		Yes				Yes			Yes			Yes	
Satd. Flow (RTOR)		32			11							1087	
Link Speed (mph)	30			30			35			35			
Link Distance (ft)	1034			351			1291			1418			
Travel Time (s)	23.5			8.0			25.1			27.6			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1590	0	554	0	11	11	54	446	0	11	457	1436	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	1590	0	554	0	22	0	54	446	0	11	457	1436	
Turn Type	Prot		pm+ov		NA		Prot	NA		Perm	NA	pm+ov	
Protected Phases	7	4	1		8		1	6			2	7	
Permitted Phases			4	8						2		2	
Detector Phase	7	4	1	8	8		1	6		2	2	7	
Switch Phase													
Minimum Initial (s)	9.0	9.0	5.0	7.0	7.0		5.0	9.0		15.0	15.0	9.0	
Minimum Split (s)	15.0	15.0	8.0	12.0	12.0		8.0	21.0		21.0	21.0	15.0	
Total Split (s)	68.0	80.0	13.0	12.0	12.0		13.0	40.0		27.0	27.0	68.0	
Total Split (%)	56.7%	66.7%	10.8%	10.0%	10.0%		10.8%	33.3%		22.5%	22.5%	56.7%	
Yellow Time (s)	4.0	4.0	3.0	3.0	3.0		3.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0		0.0	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	3.0		5.0		3.0	6.0		6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lag		Lead			Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes			Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Min		C-Min	C-Min	None	
Act Effct Green (s)	63.5		84.6		7.0		7.9	37.3		26.4	26.4	95.9	
Actuated g/C Ratio	0.53		0.70		0.06		0.07	0.31		0.22	0.22	0.80	
v/c Ratio	0.88		0.49		0.11		0.24	0.41		0.05	0.59	0.59	
Control Delay	29.5		7.1		36.2		55.3	35.2		42.5	47.1	2.2	
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0	
Total Delay	29.5		7.1		36.2		55.3	35.2		42.5	47.1	2.2	
LOS	C		A		D		E	D		D	D	A	
Approach Delay		23.7			36.2			37.3			13.2		
Approach LOS		C			D			D			B		
Queue Length 50th (ft)	377		109		4		21	155		7	180	35	
Queue Length 95th (ft)	581		180		18		41	199		25	238	61	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		954			271			1211			1338	
Turn Bay Length (ft)	370						200			100		225
Base Capacity (vph)	1829		1152		201		286	1127		204	785	2452
Starvation Cap Reductn	0		0		0		0	0		0	0	0
Spillback Cap Reductn	0		0		0		0	0		0	0	0
Storage Cap Reductn	0		0		0		0	0		0	0	0
Reduced v/c Ratio	0.87		0.48		0.11		0.19	0.40		0.05	0.58	0.59

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 30 (25%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 20.9

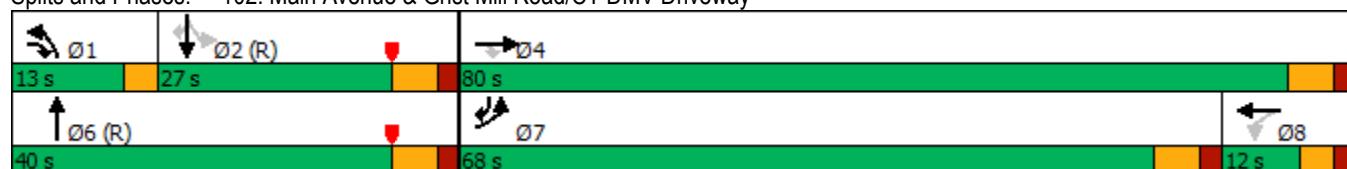
Intersection LOS: C

Intersection Capacity Utilization 79.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 102: Main Avenue & Grist Mill Road/CT DMV Driveway





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	20	224	450	221	470	300	1020	0	20	250	50
Future Volume (vph)	30	20	224	450	221	470	300	1020	0	20	250	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	10	11	10	10	11	11	11	11	11
Storage Length (ft)	0		260	0		100	0		0	70		0
Storage Lanes	0		2	2		1	1		0	1		0
Taper Length (ft)	25			50			25			20		
Lane Util. Factor	1.00	1.00	0.88	0.97	0.95	0.95	1.00	0.95	0.95	0.91	0.91	0.91
Ped Bike Factor				1.00							1.00	
Fr _t				0.850		0.936	0.850					0.976
Flt Protected				0.971		0.950		0.950				0.997
Satd. Flow (prot)	0	1731	2576	3268	1633	1432	1636	3388	0	0	4603	0
Flt Permitted		0.971		0.950			0.468				0.838	
Satd. Flow (perm)	0	1731	2576	3263	1633	1432	806	3388	0	0	3869	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)												41
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		594			351			232			399	
Travel Time (s)		13.5			8.0			5.3			9.1	
Confl. Peds. (#/hr)			1	1					1	1		
Peak Hour Factor	0.84	0.84	0.84	0.87	0.87	0.87	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	6%	6%	6%
Adj. Flow (vph)	36	24	267	517	254	540	333	1133	0	22	278	56
Shared Lane Traffic (%)						35%						
Lane Group Flow (vph)	0	60	267	517	443	351	333	1133	0	0	356	0
Turn Type	Split	NA	pt+ov	Split	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	3	3	3 1	4	4		1	1 2			2	
Permitted Phases						4	1 2				2	
Detector Phase	3	3	3 1	4	4	4	1	1 2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	4.0			17.0	17.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	7.1			25.0	25.0	
Total Split (s)	12.0	12.0		32.0	32.0	32.0	19.0			27.0	27.0	
Total Split (%)	13.3%	13.3%		35.6%	35.6%	35.6%	21.1%			30.0%	30.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	0.1			4.0	4.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	0.9				-4.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	4.0				3.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None		None	None	None	Max			C-Min	C-Min	
Act Effct Green (s)		8.0	24.7	26.9	26.9	26.9	39.1	43.1			23.4	
Actuated g/C Ratio		0.09	0.27	0.30	0.30	0.30	0.43	0.48			0.26	
v/c Ratio		0.39	0.38	0.53	0.91	0.82	0.66	0.70			0.34	
Control Delay		46.8	15.4	28.3	54.8	46.5	23.9	21.8			24.7	
Queue Delay		0.0	0.0	0.0	23.2	2.5	0.3	2.3			0.0	
Total Delay		46.8	15.4	28.3	78.1	49.0	24.3	24.1			24.7	
LOS		D	B	C	E	D	C	C			C	

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		21.1			50.7			24.1			24.7	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	33	35	123	248	190	131	235				52	
Queue Length 95th (ft)	67	50	164	#405	#316	199	297				79	
Internal Link Dist (ft)	514			271			152			319		
Turn Bay Length (ft)		260			100							
Base Capacity (vph)	153	707	1016	508	445	504	1646			1061		
Starvation Cap Reductn	0	0	0	75	33	18	366			0		
Spillback Cap Reductn	0	0	0	0	0	0	0			0		
Storage Cap Reductn	0	0	0	0	0	0	0			0		
Reduced v/c Ratio	0.39	0.38	0.51	1.02	0.85	0.69	0.89			0.34		

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 34.0

Intersection LOS: C

Intersection Capacity Utilization 80.1%

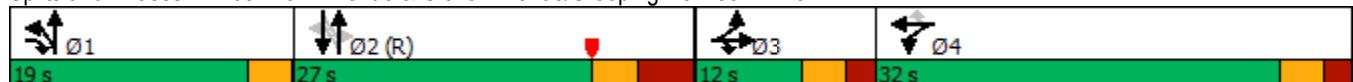
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



2025 Background Alt. 21D
104: Main Avenue & Ramp D

Weekday AM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			↑	↑↑↑	↑↑	↑
Traffic Volume (vph)	0	0	150	1320	714	210
Future Volume (vph)	0	0	150	1320	714	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	11	11	10
Storage Length (ft)	0	0	150		0	
Storage Lanes	0	0	2		1	
Taper Length (ft)	25		160			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.95	1.00
Fr _t					0.850	
Flt Protected				0.950		
Satd. Flow (prot)	0	0	1652	4916	3421	1478
Flt Permitted				0.340		
Satd. Flow (perm)	0	0	591	4916	3421	1478
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)					228	
Link Speed (mph)	30			30	30	
Link Distance (ft)	648			391	232	
Travel Time (s)	14.7			8.9	5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	163	1435	776	228
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	163	1435	776	228
Turn Type		pm+pt		NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases			2		6	
Detector Phase		5	2	6	6	
Switch Phase						
Minimum Initial (s)		5.0	5.0	5.0	5.0	
Minimum Split (s)		9.5	22.5	22.5	22.5	
Total Split (s)		27.0	90.0	63.0	63.0	
Total Split (%)		30.0%	100.0%	70.0%	70.0%	
Yellow Time (s)		3.0	3.0	3.0	3.0	
All-Red Time (s)		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	
Lead/Lag		Lead		Lag	Lag	
Lead-Lag Optimize?		Yes		Yes	Yes	
Recall Mode		None	C-Max	C-Max	C-Max	
Act Effct Green (s)		86.0	90.0	76.5	76.5	
Actuated g/C Ratio		0.96	1.00	0.85	0.85	
v/c Ratio		0.26	0.29	0.27	0.18	
Control Delay		0.8	0.1	0.6	0.3	
Queue Delay		0.0	0.0	0.2	0.4	
Total Delay		0.8	0.2	0.8	0.7	
LOS		A	A	A	A	
Approach Delay			0.2	0.8		
Approach LOS			A	A		
Queue Length 50th (ft)		0	0	5	0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (ft)			m0	0	7	0
Internal Link Dist (ft)	568			311	152	
Turn Bay Length (ft)			150			
Base Capacity (vph)		835	4916	2907	1290	
Starvation Cap Reductn		0	0	1258	675	
Spillback Cap Reductn		0	1083	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.20	0.37	0.47	0.37	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.29

Intersection Signal Delay: 0.4

Intersection LOS: A

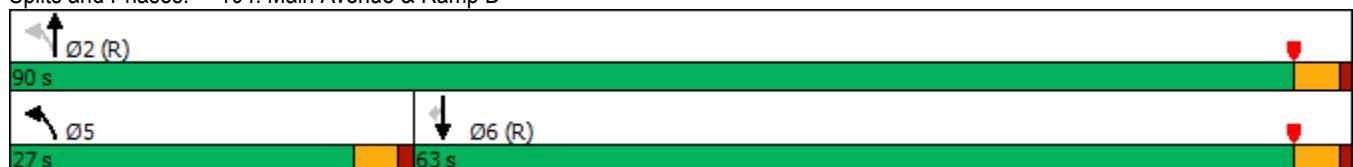
Intersection Capacity Utilization 59.3%

ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 104: Main Avenue & Ramp D



2025 Background Alt. 21D

Weekday AM Peak

105: Main Avenue & Ramp SE/Route 15N On-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↓	↑↑					↑↑	↑↑	↑↑	↑↑	
Traffic Volume (vph)	850	0	430	0	0	0	0	620	190	143	571	0
Future Volume (vph)	850	0	430	0	0	0	0	620	190	143	571	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	12	12	11	11	10	10	11	11
Storage Length (ft)	180		180	0		0	0		0	100		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	80			25			25			90		
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr _t		0.850	0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3204	1454	1404	0	0	0	0	3421	1507	1652	3421	0
Flt Permitted	0.950									0.246		
Satd. Flow (perm)	3204	1454	1404	0	0	0	0	3421	1507	428	3421	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		207	207						207			
Link Speed (mph)		30		30			30			30		
Link Distance (ft)		312		526			394			391		
Travel Time (s)		7.1		12.0			9.0			8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	924	0	467	0	0	0	0	674	207	155	621	0
Shared Lane Traffic (%)		50%										
Lane Group Flow (vph)	924	234	233	0	0	0	0	674	207	155	621	0
Turn Type	Perm	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2	2	6	
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5					22.5	22.5	9.5	22.5	
Total Split (s)	42.0	42.0	42.0					33.0	33.0	15.0	48.0	
Total Split (%)	46.7%	46.7%	46.7%					36.7%	36.7%	16.7%	53.3%	
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effect Green (s)	35.5	35.5	35.5					33.0	33.0	46.5	46.5	
Actuated g/C Ratio	0.39	0.39	0.39					0.37	0.37	0.52	0.52	
v/c Ratio	0.73	0.34	0.34					0.54	0.30	0.44	0.35	
Control Delay	26.8	4.9	5.0					25.5	4.7	14.1	11.0	
Queue Delay	0.0	0.0	0.0					0.2	0.0	0.0	0.0	
Total Delay	26.8	4.9	5.0					25.7	4.7	14.1	11.0	
LOS	C	A	A					C	A	B	B	
Approach Delay		19.5						20.8			11.7	
Approach LOS		B						C			B	

2025 Background Alt. 21D

Weekday AM Peak

105: Main Avenue & Ramp SE/Route 15N On-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	213	9	9					166	0	56	122	
Queue Length 95th (ft)	281	54	54					227	47	106	177	
Internal Link Dist (ft)		232			446			314			311	
Turn Bay Length (ft)	180		180								100	
Base Capacity (vph)	1352	733	712					1255	683	370	1768	
Starvation Cap Reductn	0	0	0					126	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.68	0.32	0.33					0.60	0.30	0.42	0.35	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 17.9

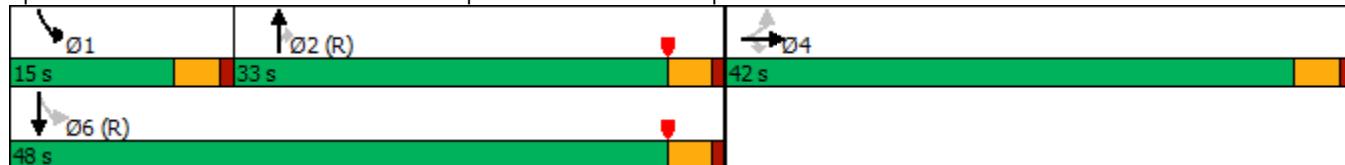
Intersection LOS: B

Intersection Capacity Utilization 59.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 105: Main Avenue & Ramp SE/Route 15N On-Ramp



APPENDIX G2
CAPACITY ANALYSES

2025 Background Conditions
Weekday Morning Peak Hour
Alternative 26

2025 Background Alt. 26

Weekday AM Peak

101: U.S. Route 7 & Glover Avenue & Grist Mill Road

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑	↑↑	↑↑	↑↑	↑	↑↑	↑↑↑	↑
Traffic Volume (vph)	260	10	880	160	0	63	480	1650	333	101	1180	100
Future Volume (vph)	260	10	880	160	0	63	480	1650	333	101	1180	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	215		215	600		250	150		250
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	100			200			150			175		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)	30			30			40			30		
Link Distance (ft)	403			884			981			1040		
Travel Time (s)	9.2			20.1			16.7			23.6		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	11	957	174	0	68	522	1793	362	110	1283	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	283	11	957	174	0	68	522	1793	362	110	1283	109
Turn Type	Prot	NA	Free	Prot		pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases			Free			8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	9.0		5.0	9.0	5.0	5.0	15.0	5.0	5.0	15.0	5.0
Minimum Split (s)	9.0	13.5		9.0	13.5	9.0	9.0	20.5	9.0	9.0	20.5	9.0
Total Split (s)	16.0	14.6		15.0	13.6	13.0	28.0	77.4	15.0	13.0	62.4	16.0
Total Split (%)	13.3%	12.2%		12.5%	11.3%	10.8%	23.3%	64.5%	12.5%	10.8%	52.0%	13.3%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	1.5		1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	C-Min	None	None	C-Min	None	
Act Effct Green (s)	15.6	9.0	120.0	12.9		12.2	22.6	78.7	97.1	12.2	68.3	89.4
Actuated g/C Ratio	0.13	0.08	1.00	0.11		0.10	0.19	0.66	0.81	0.10	0.57	0.74
v/c Ratio	0.63	0.08	0.60	0.47		0.42	0.81	0.77	0.28	0.61	0.64	0.09
Control Delay	55.7	53.1	1.7	55.2		59.0	57.0	18.2	4.0	62.3	21.0	5.9
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	53.1	1.7	55.2		59.0	57.0	18.2	4.0	62.3	21.0	5.9
LOS	E	D	A	E		E	E	B	A	E	C	A
Approach Delay		14.4			56.3			23.9			22.9	
Approach LOS		B			E			C			C	
Queue Length 50th (ft)	108	8	0	64		49	200	498	52	78	356	26
Queue Length 95th (ft)	141	28	0	105		101	257	675	123	#175	534	49

2025 Background Alt. 26

Weekday AM Peak

101: U.S. Route 7 & Glover Avenue & Grist Mill Road



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		323			804			901			960	
Turn Bay Length (ft)	250		250	215		215	600		250	150		250
Base Capacity (vph)	448	156	1583	368		161	700	2321	1280	179	2015	1181
Starvation Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.07	0.60	0.47		0.42	0.75	0.77	0.28	0.61	0.64	0.09

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 7 (6%), Referenced to phase 2:NET and 6:SWT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 22.9

Intersection LOS: C

Intersection Capacity Utilization 77.0%

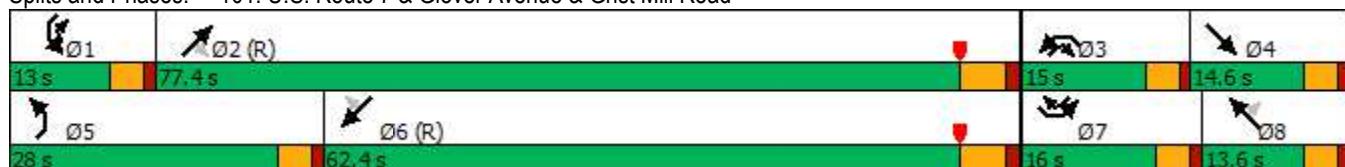
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 101: U.S. Route 7 & Glover Avenue & Grist Mill Road



2025 Background Alt. 26

Weekday AM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway

	→	→	→	←	←	↑	↑	↑	↓	↓	↓	↓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↑↑		↑↑		↑↑	↑↑		↑	↑↑	↑↑
Traffic Volume (vph)	1463	0	510	0	10	10	50	410	0	10	420	1321
Future Volume (vph)	1463	0	510	0	10	10	50	410	0	10	420	1321
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370		0	0		0	200		0	100		225
Storage Lanes	1		1	0		0	2		0	1		2
Taper Length (ft)	300			25		300			25			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95	0.97	0.95	0.95	1.00	0.95	0.88
Frt			0.850		0.925							0.850
Flt Protected	0.950					0.950			0.950			
Satd. Flow (prot)	3433	1863	1583	0	3274	0	3433	3539	0	1770	3539	2787
Flt Permitted	0.950					0.950			0.494			
Satd. Flow (perm)	3433	1863	1583	0	3274	0	3433	3539	0	920	3539	2787
Right Turn on Red		Yes				Yes			Yes			Yes
Satd. Flow (RTOR)		32			11							1087
Link Speed (mph)		30			30			35				35
Link Distance (ft)		1040			351			1293				1418
Travel Time (s)		23.6			8.0			25.2				27.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1590	0	554	0	11	11	54	446	0	11	457	1436
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1590	0	554	0	22	0	54	446	0	11	457	1436
Turn Type	Prot		pm+ov		NA		Prot	NA		Perm	NA	pm+ov
Protected Phases	7	4	1		8		1	6			2	7
Permitted Phases			4	8						2		2
Detector Phase	7	4	1	8	8		1	6		2	2	7
Switch Phase												
Minimum Initial (s)	9.0	9.0	5.0	7.0	7.0		5.0	9.0		15.0	15.0	9.0
Minimum Split (s)	15.0	15.0	8.0	12.0	12.0		8.0	21.0		21.0	21.0	15.0
Total Split (s)	68.0	80.0	13.0	12.0	12.0		13.0	40.0		27.0	27.0	68.0
Total Split (%)	56.7%	66.7%	10.8%	10.0%	10.0%		10.8%	33.3%		22.5%	22.5%	56.7%
Yellow Time (s)	4.0	4.0	3.0	3.0	3.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0		0.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	3.0		5.0		3.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lead	Lag	Lag		Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Min		C-Min	C-Min	None
Act Effct Green (s)	63.5		84.6		7.0		7.9	37.3		26.4	26.4	95.9
Actuated g/C Ratio	0.53		0.70		0.06		0.07	0.31		0.22	0.22	0.80
v/c Ratio	0.88		0.49		0.11		0.24	0.41		0.05	0.59	0.59
Control Delay	29.5		7.1		36.2		55.3	35.2		42.5	47.1	2.2
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	29.5		7.1		36.2		55.3	35.2		42.5	47.1	2.2
LOS	C		A		D		E	D		D	D	A
Approach Delay		23.7			36.2			37.3			13.2	
Approach LOS		C			D			D			B	
Queue Length 50th (ft)	378		107		4		21	155		7	180	35
Queue Length 95th (ft)	582		181		18		41	199		25	238	61

2025 Background Alt. 26

Weekday AM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		960			271			1213			1338	
Turn Bay Length (ft)	370						200			100		225
Base Capacity (vph)	1829		1152		201		286	1127		204	785	2452
Starvation Cap Reductn	0		0		0		0	0		0	0	0
Spillback Cap Reductn	0		0		0		0	0		0	0	0
Storage Cap Reductn	0		0		0		0	0		0	0	0
Reduced v/c Ratio	0.87		0.48		0.11		0.19	0.40		0.05	0.58	0.59

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 30 (25%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 20.9

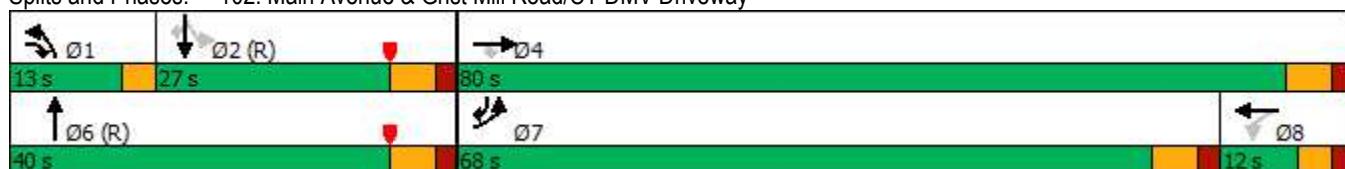
Intersection LOS: C

Intersection Capacity Utilization 79.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 102: Main Avenue & Grist Mill Road/CT DMV Driveway



2025 Background Alt. 26

Weekday AM Peak

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive

	↗	→	↘	↙	←	↖	↑	↗	↘	↓	↙	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	20	224	450	221	470	300	1020	0	20	250	50
Future Volume (vph)	30	20	224	450	221	470	300	1020	0	20	250	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	10	11	10	10	11	11	11	11	11
Storage Length (ft)	0		260	0		100	0		0	70		0
Storage Lanes	0		2	2		1	1		0	1		0
Taper Length (ft)	25			50			25			20		
Lane Util. Factor	1.00	1.00	0.88	0.97	0.95	0.95	1.00	0.95	0.95	0.91	0.91	0.91
Ped Bike Factor				1.00							1.00	
Fr _t			0.850		0.936	0.850					0.976	
Flt Protected		0.971		0.950			0.950				0.997	
Satd. Flow (prot)	0	1731	2576	3268	1633	1432	1636	3388	0	0	4603	0
Flt Permitted		0.971		0.950			0.468				0.838	
Satd. Flow (perm)	0	1731	2576	3263	1633	1432	806	3388	0	0	3869	0
Right Turn on Red			No		No			Yes				Yes
Satd. Flow (RTOR)											41	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		594			351			232			399	
Travel Time (s)		13.5			8.0			5.3			9.1	
Confl. Peds. (#/hr)			1	1					1	1		
Peak Hour Factor	0.84	0.84	0.84	0.87	0.87	0.87	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	6%	6%	6%
Adj. Flow (vph)	36	24	267	517	254	540	333	1133	0	22	278	56
Shared Lane Traffic (%)					35%							
Lane Group Flow (vph)	0	60	267	517	443	351	333	1133	0	0	356	0
Turn Type	Split	NA	pt+ov	Split	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	3	3	3 1	4	4		1	1 2			2	
Permitted Phases						4	1 2				2	
Detector Phase	3	3	3 1	4	4	4	1	1 2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	4.0			17.0	17.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	7.1			25.0	25.0	
Total Split (s)	12.0	12.0		32.0	32.0	32.0	19.0			27.0	27.0	
Total Split (%)	13.3%	13.3%		35.6%	35.6%	35.6%	21.1%			30.0%	30.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	0.1			4.0	4.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	0.9				-4.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	4.0				3.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None		None	None	None	Max			C-Min	C-Min	
Act Effct Green (s)		8.0	24.7	26.9	26.9	26.9	39.1	43.1			23.4	
Actuated g/C Ratio		0.09	0.27	0.30	0.30	0.30	0.43	0.48			0.26	
v/c Ratio		0.39	0.38	0.53	0.91	0.82	0.66	0.70			0.34	
Control Delay		46.8	15.4	28.3	54.8	46.5	23.5	21.5			24.7	
Queue Delay		0.0	0.0	0.0	23.2	2.5	0.3	2.3			0.0	
Total Delay		46.8	15.4	28.3	78.1	49.0	23.8	23.8			24.7	
LOS		D	B	C	E	D	C	C			C	

2025 Background Alt. 26

Weekday AM Peak

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		21.1			50.7			23.8			24.7	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	33	35	123	248	190	122	261				52	
Queue Length 95th (ft)	67	50	164	#405	#316	193	338				79	
Internal Link Dist (ft)	514			271				152			319	
Turn Bay Length (ft)		260			100							
Base Capacity (vph)	153	707	1016	508	445	504	1646				1061	
Starvation Cap Reductn	0	0	0	75	33	18	366				0	
Spillback Cap Reductn	0	0	0	0	0	0	0				0	
Storage Cap Reductn	0	0	0	0	0	0	0				0	
Reduced v/c Ratio	0.39	0.38	0.51	1.02	0.85	0.69	0.89				0.34	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 33.8

Intersection LOS: C

Intersection Capacity Utilization 80.1%

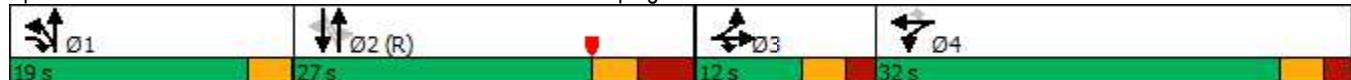
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



2025 Background Alt. 26
104: Main Avenue & Ramp D

Weekday AM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	150	1320	714	210
Future Volume (vph)	0	0	150	1320	714	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	11	11	10
Storage Length (ft)	0	0	150		0	
Storage Lanes	0	0	2		1	
Taper Length (ft)	25		160			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.95	1.00
Fr _t					0.850	
Flt Protected				0.950		
Satd. Flow (prot)	0	0	1652	4916	3421	1478
Flt Permitted				0.340		
Satd. Flow (perm)	0	0	591	4916	3421	1478
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)					228	
Link Speed (mph)	30			30	30	
Link Distance (ft)	596			391	232	
Travel Time (s)	13.5			8.9	5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	163	1435	776	228
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	163	1435	776	228
Turn Type		pm+pt		NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases			2		6	
Detector Phase		5	2	6	6	
Switch Phase						
Minimum Initial (s)		5.0	5.0	5.0	5.0	
Minimum Split (s)		9.5	22.5	22.5	22.5	
Total Split (s)		27.0	90.0	63.0	63.0	
Total Split (%)		30.0%	100.0%	70.0%	70.0%	
Yellow Time (s)		3.0	3.0	3.0	3.0	
All-Red Time (s)		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	
Lead/Lag		Lead		Lag	Lag	
Lead-Lag Optimize?		Yes		Yes	Yes	
Recall Mode		None	C-Max	C-Max	C-Max	
Act Effct Green (s)		86.0	90.0	76.5	76.5	
Actuated g/C Ratio		0.96	1.00	0.85	0.85	
v/c Ratio		0.26	0.29	0.27	0.18	
Control Delay		1.1	0.2	0.6	0.3	
Queue Delay		0.0	0.0	0.2	0.4	
Total Delay		1.1	0.2	0.8	0.7	
LOS		A	A	A	A	
Approach Delay			0.3	0.8		
Approach LOS			A	A		
Queue Length 50th (ft)		0	0	5	0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (ft)			0	0	7	0
Internal Link Dist (ft)	516			311	152	
Turn Bay Length (ft)			150			
Base Capacity (vph)		835	4916	2907	1290	
Starvation Cap Reductn		0	0	1258	675	
Spillback Cap Reductn		0	912	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.20	0.36	0.47	0.37	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.29

Intersection Signal Delay: 0.5

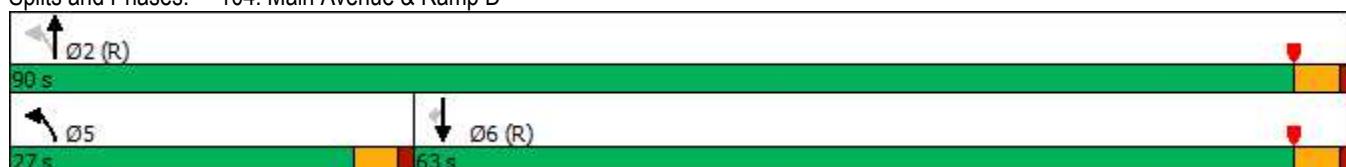
Intersection LOS: A

Intersection Capacity Utilization 59.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 104: Main Avenue & Ramp D



2025 Background Alt. 26

Weekday AM Peak

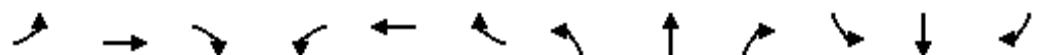
105: Main Avenue & Ramp SE/Route 15N On-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↓	↑					↑↑	↑	↑	↑↑	
Traffic Volume (vph)	850	110	430	0	0	0	0	620	190	143	571	0
Future Volume (vph)	850	110	430	0	0	0	0	620	190	143	571	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	12	12	11	11	10	10	11	11
Storage Length (ft)	180		0	0		0	0		0	100		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	80			25			25			90		
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr _t				0.910	0.850					0.850		
Flt Protected		0.950									0.950	
Satd. Flow (prot)	3204	1557	1404	0	0	0	0	3421	1507	1652	3421	0
Flt Permitted		0.950									0.240	
Satd. Flow (perm)	3204	1557	1404	0	0	0	0	3421	1507	417	3421	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		114	215						207			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		312			526			394			391	
Travel Time (s)		7.1			12.0			9.0			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	924	120	467	0	0	0	0	674	207	155	621	0
Shared Lane Traffic (%)			39%									
Lane Group Flow (vph)	924	302	285	0	0	0	0	674	207	155	621	0
Turn Type	Perm	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2	2	6	
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5					22.5	22.5	9.5	22.5	
Total Split (s)	36.0	36.0	36.0					30.0	30.0	14.0	44.0	
Total Split (%)	45.0%	45.0%	45.0%					37.5%	37.5%	17.5%	55.0%	
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effect Green (s)	30.8	30.8	30.8					28.4	28.4	41.2	41.2	
Actuated g/C Ratio	0.38	0.38	0.38					0.36	0.36	0.52	0.52	
v/c Ratio	0.75	0.45	0.42					0.56	0.31	0.44	0.35	
Control Delay	25.6	13.1	6.9					18.9	6.9	15.1	12.5	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	25.6	13.1	6.9					18.9	6.9	15.1	12.5	
LOS	C	B	A					B	A	B	B	
Approach Delay		19.6						16.1			13.0	
Approach LOS		B						B			B	

2025 Background Alt. 26

Weekday AM Peak

105: Main Avenue & Ramp SE/Route 15N On-Ramp

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	195	65	23					165	10	40	94	
Queue Length 95th (ft)	263	134	78					221	90	74	131	
Internal Link Dist (ft)		232			446			314			311	
Turn Bay Length (ft)	180										100	
Base Capacity (vph)	1281	691	690					1212	668	369	1763	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.72	0.44	0.41					0.56	0.31	0.42	0.35	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0.5 (1%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 17.0

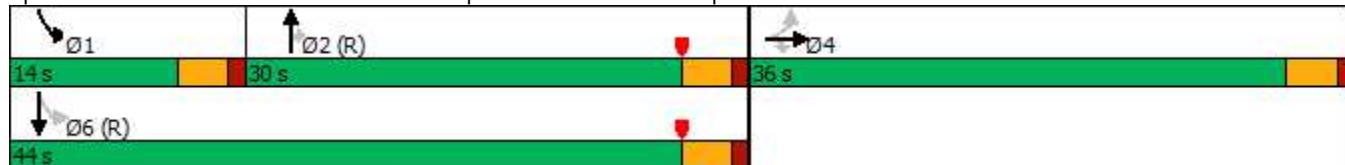
Intersection LOS: B

Intersection Capacity Utilization 59.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 105: Main Avenue & Ramp SE/Route 15N On-Ramp



2025 Background Alt. 26
106: U.S. Route 7 & Ramp D

Weekday AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑	↑↑			↑↑↑	↑		↑↑↑	↑
Traffic Volume (vph)	0	0	0	390	290	70	0	2393	730	0	1587	633
Future Volume (vph)	0	0	0	390	290	70	0	2393	730	0	1587	633
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		700	0		760
Storage Lanes	0		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Frt					0.971				0.850			0.850
Flt Protected					0.950							
Satd. Flow (prot)	0	0	0	1770	3437	0	0	5085	1583	0	5085	1583
Flt Permitted					0.950							
Satd. Flow (perm)	0	0	0	1770	3437	0	0	5085	1583	0	5085	1583
Right Turn on Red				Yes		Yes			Yes			Yes
Satd. Flow (RTOR)						1			793			264
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			274			973			1101	
Travel Time (s)		4.0			6.2			22.1			25.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	424	315	76	0	2601	793	0	1725	688
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	424	391	0	0	2601	793	0	1725	688
Turn Type				Perm	NA			NA	Perm		NA	Perm
Protected Phases					8			2			6	
Permitted Phases					8				2			6
Detector Phase					8	8		2	2		6	6
Switch Phase												
Minimum Initial (s)				5.0	5.0			5.0	5.0		5.0	5.0
Minimum Split (s)				25.0	25.0			25.0	25.0		25.0	25.0
Total Split (s)				33.0	33.0			57.0	57.0		57.0	57.0
Total Split (%)				36.7%	36.7%			63.3%	63.3%		63.3%	63.3%
Yellow Time (s)				4.0	4.0			4.0	4.0		4.0	4.0
All-Red Time (s)				3.0	3.0			3.0	3.0		3.0	3.0
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)				7.0	7.0			7.0	7.0		7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		None	None				C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		24.7	24.7				51.3	51.3		51.3	51.3	
Actuated g/C Ratio		0.27	0.27				0.57	0.57		0.57	0.57	
v/c Ratio		0.87	0.41				0.90	0.64		0.60	0.68	
Control Delay		50.0	27.0				20.4	4.7		14.0	12.2	
Queue Delay		0.0	0.0				0.0	0.0		0.0	0.0	
Total Delay		50.0	27.0				20.4	4.7		14.0	12.2	
LOS		D	C				C	A		B	B	
Approach Delay				39.0			16.7			13.5		
Approach LOS					D			B			B	
Queue Length 50th (ft)				221	94		347	77		225	158	
Queue Length 95th (ft)				#380	134		m329	m67		271	289	

2025 Background Alt. 26
106: U.S. Route 7 & Ramp D

Weekday AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)	96			194			893			1021		
Turn Bay Length (ft)								700				760
Base Capacity (vph)				511	993			2896	1242		2896	1015
Starvation Cap Reductn				0	0			0	0		0	0
Spillback Cap Reductn				0	0			0	0		0	0
Storage Cap Reductn				0	0			0	0		0	0
Reduced v/c Ratio				0.83	0.39			0.90	0.64		0.60	0.68

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 18.3

Intersection LOS: B

Intersection Capacity Utilization 79.5%

ICU Level of Service D

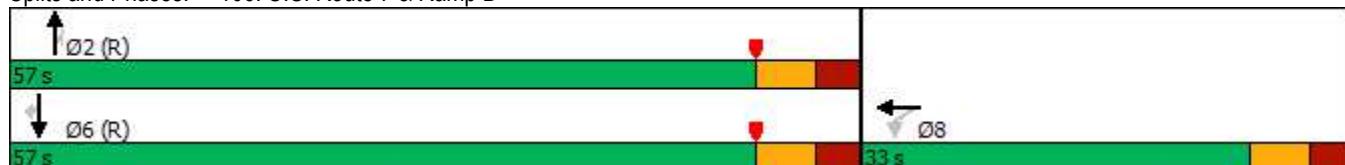
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 106: U.S. Route 7 & Ramp D



2025 Background Alt. 26

Weekday AM Peak

107: U.S. Route 7 & Route 15N Off-Ramp/Ramp SE

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Configurations								↑↑↑	↑	↑↑↑	↑↑↑	
Traffic Volume (vph)	571	0	770	0	0	0	0	2552	260	130	1847	0
Future Volume (vph)	571	0	770	0	0	0	0	2552	260	130	1847	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		390	0		0	0		925	200		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			230		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt				0.850					0.850			
Flt Protected	0.950	0.950								0.950		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	5085	1583	1770	5085	0
Flt Permitted	0.950	0.950								0.950		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	5085	1583	1770	5085	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			296						283			
Link Speed (mph)	30			30			30			30		
Link Distance (ft)	1066			558			1341			973		
Travel Time (s)	24.2			12.7			30.5			22.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	621	0	837	0	0	0	0	2774	283	141	2008	0
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	310	311	837	0	0	0	0	2774	283	141	2008	0
Turn Type	Perm	NA	Free					NA	Perm	Prot	NA	
Protected Phases			4					2		1	6	
Permitted Phases	4		Free						2			
Detector Phase	4	4						2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	5.0	5.0	5.0		
Minimum Split (s)	25.0	25.0					25.0	25.0	12.0	25.0		
Total Split (s)	25.0	25.0					52.0	52.0	13.0	65.0		
Total Split (%)	27.8%	27.8%					57.8%	57.8%	14.4%	72.2%		
Yellow Time (s)	4.0	4.0					4.0	4.0	4.0	4.0		
All-Red Time (s)	3.0	3.0					3.0	3.0	3.0	3.0		
Lost Time Adjust (s)	0.0	0.0					0.0	0.0	0.0	0.0		
Total Lost Time (s)	7.0	7.0					7.0	7.0	7.0	7.0		
Lead/Lag							Lag	Lag	Lead			
Lead-Lag Optimize?							Yes	Yes	Yes			
Recall Mode	None	None					C-Max	C-Max	None	C-Max		
Act Effct Green (s)	17.9	17.9	90.0				45.0	45.0	6.1	58.1		
Actuated g/C Ratio	0.20	0.20	1.00				0.50	0.50	0.07	0.65		
v/c Ratio	0.93	0.93	0.53				1.09	0.30	1.18	0.61		
Control Delay	71.1	71.7	1.3				72.0	2.5	170.6	6.2		
Queue Delay	0.0	0.0	0.0				0.0	0.0	0.0	0.0		
Total Delay	71.1	71.7	1.3				72.0	2.5	170.6	6.2		
LOS	E	E	A				E	A	F	A		
Approach Delay			31.1				65.5			17.0		
Approach LOS			C				E			B		
Queue Length 50th (ft)	183	184	0				~657	0	~99	115		
Queue Length 95th (ft)	#347	#348	0				#752	38	m#202	126		

2025 Background Alt. 26

Weekday AM Peak

107: U.S. Route 7 & Route 15N Off-Ramp/Ramp SE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		986			478			1261				893
Turn Bay Length (ft)				390					925	200		
Base Capacity (vph)	336	336	1583					2542	933	119	3281	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.92	0.93	0.53					1.09	0.30	1.18	0.61	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 42.4

Intersection LOS: D

Intersection Capacity Utilization 89.8%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 107: U.S. Route 7 & Route 15N Off-Ramp/Ramp SE



APPENDIX G3
CAPACITY ANALYSES

2025 Background Conditions
Weekday Afternoon Peak Hour
Alternative 21-D

2025 Background Alt. 21D

Weekday PM Peak

101: U.S. Route 7 & Glover Avenue & Grist Mill Road

	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Group Configurations	↑↑	↑	↑	↑↑	↑	↑	↑↑	↑↑	↑	↑	↑↑	↑
Traffic Volume (vph)	90	10	800	295	60	111	540	1460	148	52	1070	210
Future Volume (vph)	90	10	800	295	60	111	540	1460	148	52	1070	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	215		215	600		250	150		250
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	100			200			150			175		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		397			870			981			1039	
Travel Time (s)		9.0			19.8			16.7			23.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	11	870	321	65	121	587	1587	161	57	1163	228
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	11	870	321	65	121	587	1587	161	57	1163	228
Turn Type	Prot	NA	Free	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases			Free			8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	9.0		5.0	9.0	5.0	5.0	15.0	5.0	5.0	15.0	5.0
Minimum Split (s)	9.0	13.5		9.0	13.5	9.0	9.0	20.5	9.0	9.0	20.5	9.0
Total Split (s)	16.0	14.6		15.0	13.6	13.0	28.0	77.4	15.0	13.0	62.4	16.0
Total Split (%)	13.3%	12.2%		12.5%	11.3%	10.8%	23.3%	64.5%	12.5%	10.8%	52.0%	13.3%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	1.5		1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	C-Min	None	C-Min	None	
Act Effct Green (s)	11.0	9.2	120.0	19.6	9.7	20.5	24.5	75.0	100.1	9.0	59.6	76.1
Actuated g/C Ratio	0.09	0.08	1.00	0.16	0.08	0.17	0.20	0.62	0.83	0.08	0.50	0.63
v/c Ratio	0.31	0.08	0.55	0.57	0.43	0.45	0.84	0.72	0.12	0.43	0.66	0.23
Control Delay	54.6	52.6	1.4	51.3	61.9	48.8	57.5	18.2	2.7	58.6	30.0	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	52.6	1.4	51.3	61.9	48.8	57.5	18.2	2.7	58.6	30.0	11.4
LOS	D	D	A	D	E	D	E	B	A	E	C	B
Approach Delay				7.3		52.1			27.0		28.2	
Approach LOS				A		D			C		C	
Queue Length 50th (ft)	38	8	0	115	49	83	223	413	14	43	420	88
Queue Length 95th (ft)	64	27	0	#229	96	142	#317	534	52	m81	465	107



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		317			790			901			959	
Turn Bay Length (ft)	250		250	215		215	600		250	150		250
Base Capacity (vph)	374	156	1583	559	150	274	721	2219	1319	137	1779	1031
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.07	0.55	0.57	0.43	0.44	0.81	0.72	0.12	0.42	0.65	0.22

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 7 (6%), Referenced to phase 2:NET and 6:SWT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 26.1

Intersection LOS: C

Intersection Capacity Utilization 71.7%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 101: U.S. Route 7 & Glover Avenue & Grist Mill Road



2025 Background Alt. 21D

Weekday PM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway

	↑	→	↓	↗	↖	↙	↖	↗	↑	↗	↖	↓	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	
Traffic Volume (vph)	1511	0	150	0	10	10	120	600	10	10	240	1202	
Future Volume (vph)	1511	0	150	0	10	10	120	600	10	10	240	1202	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	370		0	0		0	200		0	100		225	
Storage Lanes	1		1	0		0	2		0	1		2	
Taper Length (ft)	300			25			300			25			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95	0.97	0.95	0.95	1.00	0.95	0.88	
Frt			0.850		0.925			0.998				0.850	
Flt Protected	0.950						0.950			0.950			
Satd. Flow (prot)	3433	1863	1583	0	3274	0	3433	3532	0	1770	3539	2787	
Flt Permitted	0.950						0.950			0.333			
Satd. Flow (perm)	3433	1863	1583	0	3274	0	3433	3532	0	620	3539	2787	
Right Turn on Red		Yes				Yes			Yes			Yes	
Satd. Flow (RTOR)		109			11				1			719	
Link Speed (mph)		30			30			35				35	
Link Distance (ft)		1039			351			1293				1421	
Travel Time (s)		23.6			8.0			25.2				27.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1642	0	163	0	11	11	130	652	11	11	261	1307	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	1642	0	163	0	22	0	130	663	0	11	261	1307	
Turn Type	Prot		pm+ov		NA		Prot	NA		Perm	NA	pm+ov	
Protected Phases	7	4	1		8		1	6			2	7	
Permitted Phases			4	8						2		2	
Detector Phase	7	4	1	8	8		1	6		2	2	7	
Switch Phase													
Minimum Initial (s)	9.0	9.0	5.0	7.0	7.0		5.0	9.0		15.0	15.0	9.0	
Minimum Split (s)	15.0	15.0	8.0	12.0	12.0		8.0	21.0		21.0	21.0	15.0	
Total Split (s)	72.0	84.0	12.0	12.0	12.0		12.0	36.0		24.0	24.0	72.0	
Total Split (%)	60.0%	70.0%	10.0%	10.0%	10.0%		10.0%	30.0%		20.0%	20.0%	60.0%	
Yellow Time (s)	4.0	4.0	3.0	3.0	3.0		3.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0		0.0	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	3.0		5.0		3.0	6.0		6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lag		Lead			Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes			Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Min		C-Min	C-Min	None	
Act Effct Green (s)	66.4		88.2		7.0		8.6	34.4		22.8	22.8	95.2	
Actuated g/C Ratio	0.55		0.74		0.06		0.07	0.29		0.19	0.19	0.79	
v/c Ratio	0.87		0.14		0.11		0.53	0.65		0.09	0.39	0.55	
Control Delay	37.7		2.7		36.2		61.9	42.7		47.8	46.6	3.0	
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0	
Total Delay	37.7		2.7		36.2		61.9	42.7		47.8	46.6	3.0	
LOS	D		A		D		E	D		D	D	A	
Approach Delay		34.5			36.2			45.8			10.5		
Approach LOS		C			D			D			B		
Queue Length 50th (ft)	592		5		4		51	258		8	102	73	
Queue Length 95th (ft)	762		m49		18		84	320		26	143	115	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		959			271			1213			1341	
Turn Bay Length (ft)	370						200			100		225
Base Capacity (vph)	1922		1197		201		257	1046		123	705	2374
Starvation Cap Reductn	0		0		0		0	0		0	0	0
Spillback Cap Reductn	0		0		0		0	0		0	0	0
Storage Cap Reductn	0		0		0		0	0		0	0	0
Reduced v/c Ratio	0.85		0.14		0.11		0.51	0.63		0.09	0.37	0.55

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 27.6

Intersection LOS: C

Intersection Capacity Utilization 94.2%

ICU Level of Service F

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Main Avenue & Grist Mill Road/CT DMV Driveway

2025 Background Alt. 21D

Weekday PM Peak

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive

	↗	→	↘	↙	←	↖	↑	↗	↘	↓	↙	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	70	492	330	62	70	141	330	130	60	1420	60
Future Volume (vph)	20	70	492	330	62	70	141	330	130	60	1420	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	10	11	10	10	11	11	11	11	11
Storage Length (ft)	0		260	0		100	0		0	70		0
Storage Lanes	0		2	2		1	1		0	1		0
Taper Length (ft)	25			50			25			20		
Lane Util. Factor	1.00	1.00	0.88	0.97	0.95	0.95	1.00	0.95	0.95	0.91	0.91	0.91
Ped Bike Factor							1.00				1.00	
Fr _t			0.850		0.957	0.850		0.958			0.994	
Flt Protected		0.989		0.950			0.950				0.998	
Satd. Flow (prot)	0	1781	2601	3236	1653	1418	1668	3310	0	0	4871	0
Flt Permitted		0.989		0.950			0.117				0.887	
Satd. Flow (perm)	0	1781	2601	3236	1653	1418	205	3310	0	0	4329	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)							108				8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		594			351			232			399	
Travel Time (s)		13.5			8.0			5.3			9.1	
Confl. Peds. (#/hr)							10				10	
Peak Hour Factor	0.80	0.80	0.80	0.88	0.88	0.88	0.84	0.84	0.84	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	25	88	615	375	70	80	168	393	155	65	1543	65
Shared Lane Traffic (%)					35%							
Lane Group Flow (vph)	0	113	615	375	98	52	168	548	0	0	1673	0
Turn Type	Split	NA	pt+ov	Split	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	3	3	3 1	4	4		1	1 2			2	
Permitted Phases						4	1 2				2	
Detector Phase	3	3	3 1	4	4	4	1	1 2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	4.0			17.0	17.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	7.1			25.0	25.0	
Total Split (s)	19.0	19.0		16.0	16.0	16.0	13.0			42.0	42.0	
Total Split (%)	21.1%	21.1%		17.8%	17.8%	17.8%	14.4%			46.7%	46.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	0.1			4.0	4.0	
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	0.9				-4.0		
Total Lost Time (s)		4.0		4.0	4.0	4.0	4.0				3.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None		None	None	None	Max			C-Min	C-Min	
Act Effct Green (s)	15.0	24.0		12.0	12.0	12.0	47.0	51.0			39.0	
Actuated g/C Ratio	0.17	0.27		0.13	0.13	0.13	0.52	0.57			0.43	
v/c Ratio	0.38	0.89		0.87	0.45	0.28	0.66	0.29			0.89	
Control Delay	37.7	36.3		60.1	43.1	39.4	39.4	8.1			31.5	
Queue Delay		0.0		1.6	16.7	0.0	0.0	0.6			0.0	
Total Delay	37.7	37.9		76.8	43.1	39.4	39.4	8.7			31.5	
LOS	D	D	E	D	D	D	A			C		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		37.9			66.8			15.9			31.5	
Approach LOS		D			E			B			C	
Queue Length 50th (ft)	58	127	109	54	28	56	45				367	
Queue Length 95th (ft)	95	#152	#179	104	64	#129	75				#410	
Internal Link Dist (ft)	514			271				152			319	
Turn Bay Length (ft)		260			100							
Base Capacity (vph)	296	693	431	220	189	253	1922				1880	
Starvation Cap Reductn	0	0	0	0	0	0	946				0	
Spillback Cap Reductn	0	20	54	0	0	0	0				0	
Storage Cap Reductn	0	0	0	0	0	0	0				0	
Reduced v/c Ratio	0.38	0.91	0.99	0.45	0.28	0.66	0.56				0.89	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 34.8

Intersection LOS: C

Intersection Capacity Utilization 69.4%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



2025 Background Alt. 21D
104: Main Avenue & Ramp D

Weekday PM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			↑	↑↑↑	↑↑	↑
Traffic Volume (vph)	0	0	280	601	1402	840
Future Volume (vph)	0	0	280	601	1402	840
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	11	11	10
Storage Length (ft)	0	0	150			0
Storage Lanes	0	0	2			1
Taper Length (ft)	25		160			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.95	1.00
Fr _t						0.850
Flt Protected				0.950		
Satd. Flow (prot)	0	0	1652	4916	3421	1478
Flt Permitted				0.134		
Satd. Flow (perm)	0	0	233	4916	3421	1478
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						288
Link Speed (mph)	30			30	30	
Link Distance (ft)	648			391	232	
Travel Time (s)	14.7			8.9	5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	304	653	1524	913
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	304	653	1524	913
Turn Type		pm+pt		NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases			2			6
Detector Phase		5	2	6	6	
Switch Phase						
Minimum Initial (s)		5.0	5.0	5.0	5.0	
Minimum Split (s)		9.5	22.5	22.5	22.5	
Total Split (s)		21.0	90.0	69.0	69.0	
Total Split (%)		23.3%	100.0%	76.7%	76.7%	
Yellow Time (s)		3.0	3.0	3.0	3.0	
All-Red Time (s)		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	
Lead/Lag		Lead		Lag	Lag	
Lead-Lag Optimize?		Yes		Yes	Yes	
Recall Mode		None	C-Max	C-Max	C-Max	
Act Effct Green (s)		86.0	90.0	70.8	70.8	
Actuated g/C Ratio		0.96	1.00	0.79	0.79	
v/c Ratio		0.76	0.13	0.57	0.75	
Control Delay		25.3	0.1	3.6	5.4	
Queue Delay		1.5	0.0	2.3	4.1	
Total Delay		26.8	0.1	5.9	9.5	
LOS		C	A	A	A	
Approach Delay			8.6	7.3		
Approach LOS			A	A		
Queue Length 50th (ft)		80	0	88	38	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (ft)			175	0	m185	m194
Internal Link Dist (ft)	568			311	152	
Turn Bay Length (ft)			150			
Base Capacity (vph)		490	4916	2690	1223	
Starvation Cap Reductn		70	0	987	230	
Spillback Cap Reductn		0	0	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.72	0.13	0.89	0.92	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0.5 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 7.6

Intersection LOS: A

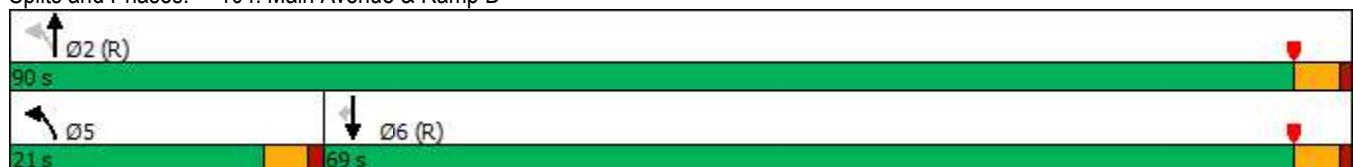
Intersection Capacity Utilization 74.2%

ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 104: Main Avenue & Ramp D



2025 Background Alt. 21D

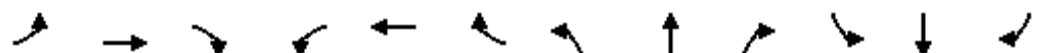
Weekday PM Peak

105: Main Avenue & Ramp SE/Route 15N On-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↓	↑↑					↑↑	↑↑	↓	↑↑	
Traffic Volume (vph)	210	0	450	0	0	0	0	671	450	392	1010	0
Future Volume (vph)	210	0	450	0	0	0	0	671	450	392	1010	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	12	12	11	11	10	10	11	11
Storage Length (ft)	180		180	0		0	0		0	100		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	80			25			25			90		
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr _t		0.850	0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3204	1454	1404	0	0	0	0	3421	1507	1652	3421	0
Flt Permitted	0.950									0.283		
Satd. Flow (perm)	3204	1454	1404	0	0	0	0	3421	1507	492	3421	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129	129						489			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		312			528			394			391	
Travel Time (s)		7.1			12.0			9.0			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	228	0	489	0	0	0	0	729	489	426	1098	0
Shared Lane Traffic (%)		50%										
Lane Group Flow (vph)	228	245	244	0	0	0	0	729	489	426	1098	0
Turn Type	Perm	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2	2	6	
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5					22.5	22.5	9.5	22.5	
Total Split (s)	25.0	25.0	25.0					35.0	35.0	30.0	65.0	
Total Split (%)	27.8%	27.8%	27.8%					38.9%	38.9%	33.3%	72.2%	
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effect Green (s)	15.4	15.4	15.4					45.4	45.4	66.6	66.6	
Actuated g/C Ratio	0.17	0.17	0.17					0.50	0.50	0.74	0.74	
v/c Ratio	0.42	0.69	0.70					0.42	0.49	0.73	0.43	
Control Delay	34.4	26.1	27.1					10.8	2.1	14.2	3.7	
Queue Delay	0.0	0.1	0.1					0.3	0.6	0.0	0.1	
Total Delay	34.4	26.2	27.2					11.0	2.7	14.2	3.8	
LOS	C	C	C					B	A	B	A	
Approach Delay		29.2						7.7			6.7	
Approach LOS		C						A			A	

105: Main Avenue & Ramp SE/Route 15N On-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	59	62	62					52	5	68	56	
Queue Length 95th (ft)	87	138	140					m179	m25	97	59	
Internal Link Dist (ft)		232			448			314			311	
Turn Bay Length (ft)	180		180								100	
Base Capacity (vph)	747	438	426					1724	1002	699	2531	
Starvation Cap Reductn	0	0	0					395	207	0	404	
Spillback Cap Reductn	0	7	7					0	0	0	196	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.31	0.57	0.58					0.55	0.62	0.61	0.52	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0.5 (1%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 11.7

Intersection LOS: B

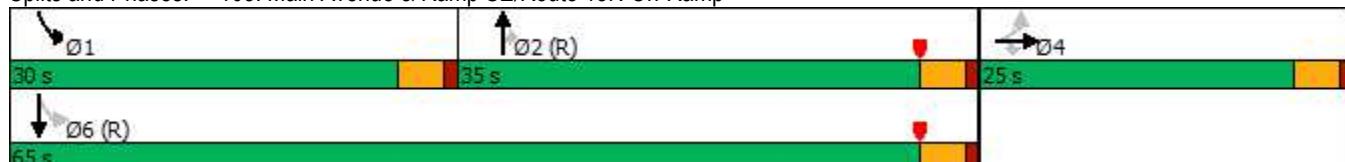
Intersection Capacity Utilization 74.2%

ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 105: Main Avenue & Ramp SE/Route 15N On-Ramp



APPENDIX G4
CAPACITY ANALYSES

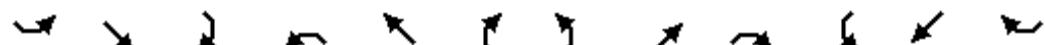
2025 Background Conditions
Weekday Afternoon Peak Hour
Alternative 26

	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑	↑↑	↑↑	↑	↑	↑↑	↑
Traffic Volume (vph)	90	10	800	295	60	111	540	1460	148	52	1070	210
Future Volume (vph)	90	10	800	295	60	111	540	1460	148	52	1070	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	215		215	600		250	150		250
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	100			200			150			175		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		396			877			981			1033	
Travel Time (s)		9.0			19.9			16.7			23.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	11	870	321	65	121	587	1587	161	57	1163	228
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	11	870	321	65	121	587	1587	161	57	1163	228
Turn Type	Prot	NA	Free	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases			Free			8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	9.0		5.0	9.0	5.0	5.0	15.0	5.0	5.0	15.0	5.0
Minimum Split (s)	9.0	13.5		9.0	13.5	9.0	9.0	20.5	9.0	9.0	20.5	9.0
Total Split (s)	16.0	14.6		15.0	13.6	13.0	28.0	77.4	15.0	13.0	62.4	16.0
Total Split (%)	13.3%	12.2%		12.5%	11.3%	10.8%	23.3%	64.5%	12.5%	10.8%	52.0%	13.3%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	1.5		1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	11.0	9.2	120.0	19.6	9.7	20.5	24.5	75.0	100.1	9.0	59.6	76.1
Actuated g/C Ratio	0.09	0.08	1.00	0.16	0.08	0.17	0.20	0.62	0.83	0.08	0.50	0.63
v/c Ratio	0.31	0.08	0.55	0.57	0.43	0.45	0.84	0.72	0.12	0.43	0.66	0.23
Control Delay	54.6	52.6	1.4	51.3	61.9	48.8	57.5	18.2	2.7	58.6	30.0	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	52.6	1.4	51.3	61.9	48.8	57.5	18.2	2.7	58.6	30.0	11.4
LOS	D	D	A	D	E	D	E	B	A	E	C	B
Approach Delay				7.3		52.1			27.0		28.2	
Approach LOS				A		D			C		C	
Queue Length 50th (ft)	38	8	0	115	49	83	223	413	14	43	418	87
Queue Length 95th (ft)	64	27	0	#229	96	142	#317	534	52	m81	464	107

2025 Background Alt. 26

Weekday PM Peak

101: U.S. Route 7 & Glover Avenue & Grist Mill Road



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		316			797			901			953	
Turn Bay Length (ft)	250		250	215		215	600		250	150		250
Base Capacity (vph)	374	156	1583	559	150	274	721	2219	1319	137	1779	1031
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.07	0.55	0.57	0.43	0.44	0.81	0.72	0.12	0.42	0.65	0.22

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 7 (6%), Referenced to phase 2:NET and 6:SWT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 26.1

Intersection LOS: C

Intersection Capacity Utilization 71.7%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 101: U.S. Route 7 & Glover Avenue & Grist Mill Road



2025 Background Alt. 26

Weekday PM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway

	↑	→	↓	↗	↖	↙	↖	↗	↑	↗	↖	↓	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑	↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	
Traffic Volume (vph)	1511	0	150	0	10	10	120	600	10	10	240	1202	
Future Volume (vph)	1511	0	150	0	10	10	120	600	10	10	240	1202	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	370		0	0		0	200		0	100		225	
Storage Lanes	1		1	0		0	2		0	1		2	
Taper Length (ft)	300			25		300			25				
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95	0.97	0.95	0.95	1.00	0.95	0.88	
Frt			0.850		0.925			0.998				0.850	
Flt Protected	0.950					0.950			0.950				
Satd. Flow (prot)	3433	1863	1583	0	3274	0	3433	3532	0	1770	3539	2787	
Flt Permitted	0.950					0.950			0.950			0.333	
Satd. Flow (perm)	3433	1863	1583	0	3274	0	3433	3532	0	620	3539	2787	
Right Turn on Red		Yes				Yes			Yes			Yes	
Satd. Flow (RTOR)		109			11				1			719	
Link Speed (mph)		30			30			35				35	
Link Distance (ft)		1033			351			1293				1421	
Travel Time (s)		23.5			8.0			25.2				27.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1642	0	163	0	11	11	130	652	11	11	261	1307	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	1642	0	163	0	22	0	130	663	0	11	261	1307	
Turn Type	Prot		pm+ov		NA		Prot	NA		Perm	NA	pm+ov	
Protected Phases	7	4	1		8		1	6			2	7	
Permitted Phases			4	8						2		2	
Detector Phase	7	4	1	8	8		1	6		2	2	7	
Switch Phase													
Minimum Initial (s)	9.0	9.0	5.0	7.0	7.0		5.0	9.0		15.0	15.0	9.0	
Minimum Split (s)	15.0	15.0	8.0	12.0	12.0		8.0	21.0		21.0	21.0	15.0	
Total Split (s)	72.0	84.0	12.0	12.0	12.0		12.0	36.0		24.0	24.0	72.0	
Total Split (%)	60.0%	70.0%	10.0%	10.0%	10.0%		10.0%	30.0%		20.0%	20.0%	60.0%	
Yellow Time (s)	4.0	4.0	3.0	3.0	3.0		3.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0		0.0	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	3.0		5.0		3.0	6.0		6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lag		Lead			Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes			Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Min		C-Min	C-Min	None	
Act Effct Green (s)	66.4		88.2		7.0		8.6	34.4		22.8	22.8	95.2	
Actuated g/C Ratio	0.55		0.74		0.06		0.07	0.29		0.19	0.19	0.79	
v/c Ratio	0.87		0.14		0.11		0.53	0.65		0.09	0.39	0.55	
Control Delay	37.7		2.7		36.2		61.9	42.7		47.8	46.6	3.0	
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0	
Total Delay	37.7		2.7		36.2		61.9	42.7		47.8	46.6	3.0	
LOS	D		A		D		E	D		D	D	A	
Approach Delay		34.5			36.2			45.8			10.5		
Approach LOS		C			D			D			B		
Queue Length 50th (ft)	591		5		4		51	258		8	102	73	
Queue Length 95th (ft)	763		m49		18		84	320		26	143	115	

2025 Background Alt. 26

Weekday PM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		953			271			1213			1341	
Turn Bay Length (ft)	370						200			100		225
Base Capacity (vph)	1922		1197		201		257	1046		123	705	2374
Starvation Cap Reductn	0		0		0		0	0		0	0	0
Spillback Cap Reductn	0		0		0		0	0		0	0	0
Storage Cap Reductn	0		0		0		0	0		0	0	0
Reduced v/c Ratio	0.85		0.14		0.11		0.51	0.63		0.09	0.37	0.55

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 27.6

Intersection LOS: C

Intersection Capacity Utilization 94.2%

ICU Level of Service F

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Main Avenue & Grist Mill Road/CT DMV Driveway



2025 Background Alt. 26

Weekday PM Peak

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive

	↗	→	↘	↙	←	↖	↑	↗	↘	↓	↙	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	70	492	330	62	70	141	330	130	60	1420	60
Future Volume (vph)	20	70	492	330	62	70	141	330	130	60	1420	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	10	11	10	10	11	11	11	11	11
Storage Length (ft)	0		260	0		100	0		0	70		0
Storage Lanes	0		2	2		1	1		0	1		0
Taper Length (ft)	25			50			25			20		
Lane Util. Factor	1.00	1.00	0.88	0.97	0.95	0.95	1.00	0.95	0.95	0.91	0.91	0.91
Ped Bike Factor							1.00				1.00	
Fr _t			0.850		0.957	0.850		0.958			0.994	
Flt Protected		0.989		0.950			0.950				0.998	
Satd. Flow (prot)	0	1781	2601	3236	1653	1418	1668	3310	0	0	4871	0
Flt Permitted		0.989		0.950			0.117				0.887	
Satd. Flow (perm)	0	1781	2601	3236	1653	1418	205	3310	0	0	4329	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)							108				8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		594			351			232			399	
Travel Time (s)		13.5			8.0			5.3			9.1	
Confl. Peds. (#/hr)							10				10	
Peak Hour Factor	0.80	0.80	0.80	0.88	0.88	0.88	0.84	0.84	0.84	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	25	88	615	375	70	80	168	393	155	65	1543	65
Shared Lane Traffic (%)					35%							
Lane Group Flow (vph)	0	113	615	375	98	52	168	548	0	0	1673	0
Turn Type	Split	NA	pt+ov	Split	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	3	3	3 1	4	4		1	1 2			2	
Permitted Phases						4	1 2				2	
Detector Phase	3	3	3 1	4	4	4	1	1 2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	4.0			17.0	17.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	7.1			25.0	25.0	
Total Split (s)	19.0	19.0		16.0	16.0	16.0	13.0			42.0	42.0	
Total Split (%)	21.1%	21.1%		17.8%	17.8%	17.8%	14.4%			46.7%	46.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	0.1			4.0	4.0	
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	0.9				-4.0		
Total Lost Time (s)		4.0		4.0	4.0	4.0	4.0				3.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None		None	None	None	Max			C-Min	C-Min	
Act Effct Green (s)	15.0	24.0		12.0	12.0	12.0	47.0	51.0			39.0	
Actuated g/C Ratio	0.17	0.27		0.13	0.13	0.13	0.52	0.57			0.43	
v/c Ratio	0.38	0.89		0.87	0.45	0.28	0.66	0.29			0.89	
Control Delay	37.7	36.3		60.1	43.1	39.4	41.9	7.9			31.5	
Queue Delay		0.0		1.6	16.7	0.0	0.0	0.6			0.0	
Total Delay	37.7	37.9		76.8	43.1	39.4	41.9	8.5			31.5	
LOS	D	D	E	D	D	D	A			C		

2025 Background Alt. 26

Weekday PM Peak

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		37.9			66.8			16.3			31.5	
Approach LOS		D			E			B			C	
Queue Length 50th (ft)	58	127	109	54	28	72	43				367	
Queue Length 95th (ft)	95	#152	#179	104	64	#129	74				#410	
Internal Link Dist (ft)	514			271				152			319	
Turn Bay Length (ft)		260			100							
Base Capacity (vph)	296	693	431	220	189	253	1922				1880	
Starvation Cap Reductn	0	0	0	0	0	0	946				0	
Spillback Cap Reductn	0	20	54	0	0	0	0	0			0	
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	
Reduced v/c Ratio	0.38	0.91	0.99	0.45	0.28	0.66	0.56				0.89	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 34.9

Intersection LOS: C

Intersection Capacity Utilization 69.4%

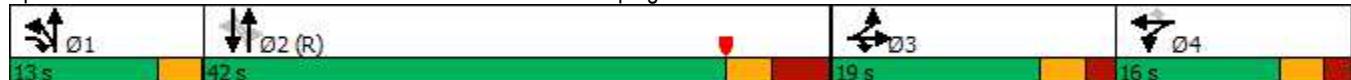
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



2025 Background Alt. 26
104: Main Avenue & Ramp D

Weekday PM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			↑	↑↑↑	↑↑	↑
Traffic Volume (vph)	0	0	280	601	1402	840
Future Volume (vph)	0	0	280	601	1402	840
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	11	11	10
Storage Length (ft)	0	0	150			0
Storage Lanes	0	0	2			1
Taper Length (ft)	25		160			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.95	1.00
Fr _t						0.850
Flt Protected				0.950		
Satd. Flow (prot)	0	0	1652	4916	3421	1478
Flt Permitted				0.134		
Satd. Flow (perm)	0	0	233	4916	3421	1478
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						288
Link Speed (mph)	30			30	30	
Link Distance (ft)	596			391	232	
Travel Time (s)	13.5			8.9	5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	304	653	1524	913
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	304	653	1524	913
Turn Type		pm+pt		NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases			2			6
Detector Phase			5	2	6	6
Switch Phase						
Minimum Initial (s)		5.0	5.0	5.0	5.0	
Minimum Split (s)		9.5	22.5	22.5	22.5	
Total Split (s)		21.0	90.0	69.0	69.0	
Total Split (%)		23.3%	100.0%	76.7%	76.7%	
Yellow Time (s)		3.0	3.0	3.0	3.0	
All-Red Time (s)		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	
Lead/Lag		Lead		Lag	Lag	
Lead-Lag Optimize?		Yes		Yes	Yes	
Recall Mode		None	C-Max	C-Max	C-Max	
Act Effct Green (s)		86.0	90.0	70.8	70.8	
Actuated g/C Ratio		0.96	1.00	0.79	0.79	
v/c Ratio		0.76	0.13	0.57	0.75	
Control Delay		25.3	0.0	3.6	5.4	
Queue Delay		1.6	0.0	2.3	4.1	
Total Delay		26.9	0.0	5.9	9.5	
LOS		C	A	A	A	
Approach Delay			8.6	7.3		
Approach LOS			A	A		
Queue Length 50th (ft)		101	0	88	38	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (ft)			175	0	m185	m194
Internal Link Dist (ft)	516			311	152	
Turn Bay Length (ft)			150			
Base Capacity (vph)		490	4916	2690	1223	
Starvation Cap Reductn		74	0	987	230	
Spillback Cap Reductn		0	0	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.73	0.13	0.89	0.92	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0.5 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 7.7

Intersection LOS: A

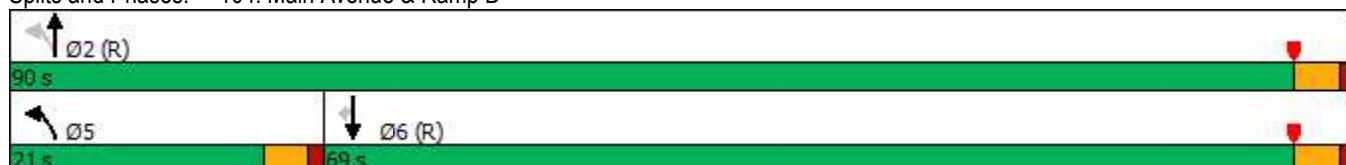
Intersection Capacity Utilization 79.8%

ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 104: Main Avenue & Ramp D



2025 Background Alt. 26

Weekday PM Peak

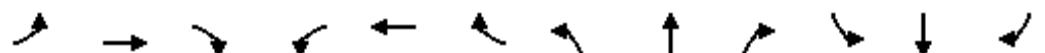
105: Main Avenue & Ramp SE/Route 15N On-Ramp

	↗	→	↘	↖	←	↙	↑	↗	↘	↓	↖	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↑					↑↑	↑	↑	↑↑	
Traffic Volume (vph)	210	210	450	0	0	0	0	671	450	392	1010	0
Future Volume (vph)	210	210	450	0	0	0	0	671	450	392	1010	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	12	12	11	11	10	10	11	11
Storage Length (ft)	180		0	0		0	0		0	100		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	80			25			25			90		
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr _t		0.941	0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3204	1610	1404	0	0	0	0	3421	1507	1652	3421	0
Flt Permitted	0.950									0.241		
Satd. Flow (perm)	3204	1610	1404	0	0	0	0	3421	1507	419	3421	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36	110						301			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		312			528			394			391	
Travel Time (s)		7.1			12.0			9.0			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	228	228	489	0	0	0	0	729	489	426	1098	0
Shared Lane Traffic (%)			30%									
Lane Group Flow (vph)	228	375	342	0	0	0	0	729	489	426	1098	0
Turn Type	Perm	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2	2	6	
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5					22.5	22.5	9.5	22.5	
Total Split (s)	29.0	29.0	29.0					35.0	35.0	26.0	61.0	
Total Split (%)	32.2%	32.2%	32.2%					38.9%	38.9%	28.9%	67.8%	
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effect Green (s)	23.3	23.3	23.3					36.6	36.6	58.7	58.7	
Actuated g/C Ratio	0.26	0.26	0.26					0.41	0.41	0.65	0.65	
v/c Ratio	0.28	0.85	0.77					0.52	0.62	0.82	0.49	
Control Delay	26.7	46.7	32.8					14.9	5.9	25.1	6.5	
Queue Delay	0.0	0.0	0.1					0.3	0.6	0.0	0.2	
Total Delay	26.7	46.7	32.9					15.2	6.5	25.1	6.6	
LOS	C	D	C					B	A	C	A	
Approach Delay		36.9						11.7			11.8	
Approach LOS		D						B			B	

2025 Background Alt. 26

Weekday PM Peak

105: Main Avenue & Ramp SE/Route 15N On-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	54	195	133					144	47	144	144	
Queue Length 95th (ft)	m82	m#322	m229					m179	m41	#164	59	
Internal Link Dist (ft)		232			448			314			311	
Turn Bay Length (ft)	180										100	
Base Capacity (vph)	890	473	469					1392	791	574	2231	
Starvation Cap Reductn	0	0	0					208	84	0	327	
Spillback Cap Reductn	0	1	3					0	0	0	96	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.26	0.79	0.73					0.62	0.69	0.74	0.58	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0.5 (1%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 18.2

Intersection LOS: B

Intersection Capacity Utilization 79.8%

ICU Level of Service D

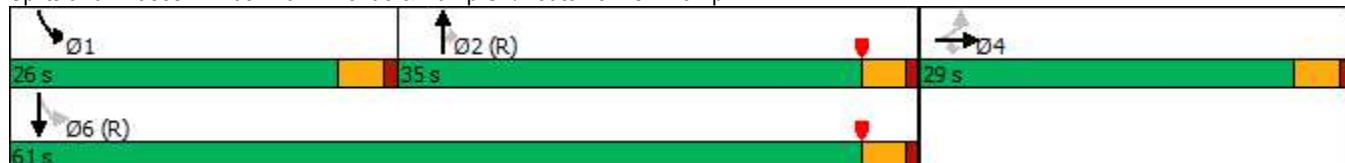
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 105: Main Avenue & Ramp SE/Route 15N On-Ramp



2025 Background Alt. 26
106: U.S. Route 7 & Ramp D

Weekday PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑	↑↑			↑↑↑	↑		↑↑↑	↑
Traffic Volume (vph)	0	0	0	350	960	50	0	2098	830	0	1583	582
Future Volume (vph)	0	0	0	350	960	50	0	2098	830	0	1583	582
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		700	0		400
Storage Lanes	0		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Frt					0.993				0.850			0.850
Flt Protected					0.950							
Satd. Flow (prot)	0	0	0	1770	3514	0	0	5085	1583	0	5085	1583
Flt Permitted					0.950							
Satd. Flow (perm)	0	0	0	1770	3514	0	0	5085	1583	0	5085	1583
Right Turn on Red				Yes		Yes			Yes			Yes
Satd. Flow (RTOR)					2				902			48
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			274			973			1102	
Travel Time (s)		4.0			6.2			22.1			25.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	380	1043	54	0	2280	902	0	1721	633
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	380	1097	0	0	2280	902	0	1721	633
Turn Type				Perm	NA			NA	Perm		NA	Perm
Protected Phases					8			2			6	
Permitted Phases					8				2			6
Detector Phase				8	8			2	2		6	6
Switch Phase												
Minimum Initial (s)				5.0	5.0			5.0	5.0		5.0	5.0
Minimum Split (s)				25.0	25.0			25.0	25.0		25.0	25.0
Total Split (s)				38.0	38.0			52.0	52.0		52.0	52.0
Total Split (%)				42.2%	42.2%			57.8%	57.8%		57.8%	57.8%
Yellow Time (s)				4.0	4.0			4.0	4.0		4.0	4.0
All-Red Time (s)				3.0	3.0			3.0	3.0		3.0	3.0
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)				7.0	7.0			7.0	7.0		7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None			C-Min	C-Min		C-Min	C-Min
Act Effct Green (s)				31.0	31.0			45.0	45.0		45.0	45.0
Actuated g/C Ratio				0.34	0.34			0.50	0.50		0.50	0.50
v/c Ratio				0.62	0.91			0.90	0.73		0.68	0.78
Control Delay				27.2	35.9			23.6	6.8		18.7	25.0
Queue Delay				0.0	0.0			0.0	0.0		0.0	0.0
Total Delay				27.2	35.9			23.6	6.8		18.7	25.0
LOS				C	D			C	A		B	C
Approach Delay					33.6			18.8			20.4	
Approach LOS						C			B		C	
Queue Length 50th (ft)				153	282			304	89		258	261
Queue Length 95th (ft)				m262	#434			m302	m91		310	414

2025 Background Alt. 26
106: U.S. Route 7 & Ramp D

Weekday PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)	96			194			893			1022		
Turn Bay Length (ft)								700			400	
Base Capacity (vph)		609		1211			2542	1242		2542	815	
Starvation Cap Reductn			0	0			0	0		0	0	
Spillback Cap Reductn			0	0			0	0		0	0	
Storage Cap Reductn			0	0			0	0		0	0	
Reduced v/c Ratio			0.62	0.91			0.90	0.73		0.68	0.78	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 22.5 Intersection LOS: C

Intersection Capacity Utilization 80.3% ICU Level of Service D

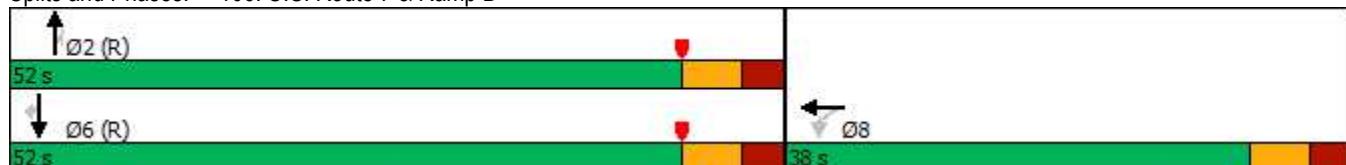
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 106: U.S. Route 7 & Ramp D



2025 Background Alt. 26

Weekday PM Peak

107: U.S. Route 7 & Route 15N Off-Ramp/Ramp SE

	→	→	→	←	←	↑	↑	↓	↓	←		
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑					↑↑↑	↑	↑	↑↑↑	
Traffic Volume (vph)	523	0	810	0	0	0	0	2405	280	110	1823	0
Future Volume (vph)	523	0	810	0	0	0	0	2405	280	110	1823	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		390	0		0	0		925	200		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			230		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt			0.850					0.850				
Flt Protected	0.950	0.950								0.950		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	5085	1583	1770	5085	0
Flt Permitted	0.950	0.950								0.950		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	5085	1583	1770	5085	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			297						304			
Link Speed (mph)	30			30			30			30		
Link Distance (ft)	1062			573			1341			973		
Travel Time (s)	24.1			13.0			30.5			22.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	568	0	880	0	0	0	0	2614	304	120	1982	0
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	284	284	880	0	0	0	0	2614	304	120	1982	0
Turn Type	Perm	NA	Free					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		Free						2			
Detector Phase	4	4						2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	5.0	5.0	5.0		
Minimum Split (s)	25.0	25.0					25.0	25.0	12.0	25.0		
Total Split (s)	25.0	25.0					52.0	52.0	13.0	65.0		
Total Split (%)	27.8%	27.8%					57.8%	57.8%	14.4%	72.2%		
Yellow Time (s)	4.0	4.0					4.0	4.0	4.0	4.0		
All-Red Time (s)	3.0	3.0					3.0	3.0	3.0	3.0		
Lost Time Adjust (s)	0.0	0.0					0.0	0.0	0.0	0.0		
Total Lost Time (s)	7.0	7.0					7.0	7.0	7.0	7.0		
Lead/Lag							Lag	Lag	Lead			
Lead-Lag Optimize?							Yes	Yes	Yes			
Recall Mode	None	None					C-Max	C-Max	None	C-Max		
Act Effct Green (s)	17.3	17.3	90.0				45.0	45.0	6.7	58.7		
Actuated g/C Ratio	0.19	0.19	1.00				0.50	0.50	0.07	0.65		
v/c Ratio	0.88	0.88	0.56				1.03	0.32	0.92	0.60		
Control Delay	63.4	63.4	1.4				49.1	2.5	93.9	7.6		
Queue Delay	0.0	0.0	0.0				0.0	0.0	0.0	0.0		
Total Delay	63.4	63.4	1.4				49.1	2.5	93.9	7.6		
LOS	E	E	A				D	A	F	A		
Approach Delay		25.7					44.2			12.5		
Approach LOS		C					D			B		
Queue Length 50th (ft)	165	165	0				~587	0	~72	117		
Queue Length 95th (ft)	#308	#308	0				#682	39	m#148	192		

2025 Background Alt. 26

Weekday PM Peak

107: U.S. Route 7 & Route 15N Off-Ramp/Ramp SE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		982			493			1261				893
Turn Bay Length (ft)			390						925	200		
Base Capacity (vph)	336	336	1583					2542	943	131	3314	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.85	0.85	0.56					1.03	0.32	0.92	0.60	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 29.8 Intersection LOS: C

Intersection Capacity Utilization 84.5% ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 107: U.S. Route 7 & Route 15N Off-Ramp/Ramp SE



APPENDIX H1
CAPACITY ANALYSES

2025 Combined Conditions
Weekday Morning Peak Hour
Alternative 21-D

2025 Combined Alt. 21D

Weekday AM Peak

101: U.S. Route 7 & Glover Avenue & Grist Mill Road

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR		
Lane Configurations	2	1	2	1	2	1	2	1	2	1	2	1	2	1
Traffic Volume (vph)	260	10	880	312	0	101	480	1650	387	114	1180	100		
Future Volume (vph)	260	10	880	312	0	101	480	1650	387	114	1180	100		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	250		250	215		215	600		250	150		250		
Storage Lanes	2		1	2		1	2		1	1		1		
Taper Length (ft)	100			200			150			175				
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00		
Frt			0.850			0.850			0.850			0.850		
Flt Protected	0.950			0.950			0.950			0.950				
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583		
Flt Permitted	0.950			0.950			0.950			0.950				
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583		
Right Turn on Red			No			No			No			No		
Satd. Flow (RTOR)														
Link Speed (mph)		30			30			40			30			
Link Distance (ft)		404			896			981			1034			
Travel Time (s)		9.2			20.4			16.7			23.5			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	283	11	957	339	0	110	522	1793	421	124	1283	109		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	283	11	957	339	0	110	522	1793	421	124	1283	109		
Turn Type	Prot	NA	Free	Prot		pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov		
Protected Phases	7	4		3	8	1	5	2	3	1	6	7		
Permitted Phases			Free			8			2			6		
Detector Phase	7	4		3	8	1	5	2	3	1	6	7		
Switch Phase														
Minimum Initial (s)	5.0	9.0		5.0	9.0	5.0	5.0	15.0	5.0	5.0	15.0	5.0		
Minimum Split (s)	9.0	13.5		9.0	13.5	9.0	9.0	20.5	9.0	9.0	20.5	9.0		
Total Split (s)	16.0	14.6		15.0	13.6	13.0	28.0	77.4	15.0	13.0	62.4	16.0		
Total Split (%)	13.3%	12.2%		12.5%	11.3%	10.8%	23.3%	64.5%	12.5%	10.8%	52.0%	13.3%		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0		
All-Red Time (s)	1.0	1.5		1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5	1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0		
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead		
Lead-Lag Optimize?														
Recall Mode	None	None		None	None	None	None	C-Min	None	None	C-Min	None		
Act Effct Green (s)	20.1	9.0	120.0	17.4		13.8	22.6	72.6	95.5	13.8	63.8	89.4		
Actuated g/C Ratio	0.17	0.08	1.00	0.14		0.12	0.19	0.60	0.80	0.12	0.53	0.74		
v/c Ratio	0.49	0.08	0.60	0.68		0.60	0.81	0.84	0.33	0.61	0.68	0.09		
Control Delay	48.5	53.1	1.7	57.1		65.3	57.0	23.7	4.7	60.1	23.8	5.9		
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	48.5	53.1	1.7	57.1		65.3	57.0	23.7	4.7	60.1	23.8	5.9		
LOS	D	D	A	E		E	E	C	A	E	C	A		
Approach Delay			12.7			59.1			27.1			25.5		
Approach LOS			B			E			C			C		
Queue Length 50th (ft)	106	8	0	128		81	200	550	71	86	371	24		
Queue Length 95th (ft)	141	28	0	#247		#189	257	675	148	#205	534	49		



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		324			816			901			954	
Turn Bay Length (ft)	250		250	215		215	600		250	150		250
Base Capacity (vph)	574	156	1583	497		182	700	2140	1259	203	1882	1180
Starvation Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.07	0.60	0.68		0.60	0.75	0.84	0.33	0.61	0.68	0.09

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 7 (6%), Referenced to phase 2:NET and 6:SWT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 26.1

Intersection LOS: C

Intersection Capacity Utilization 79.2%

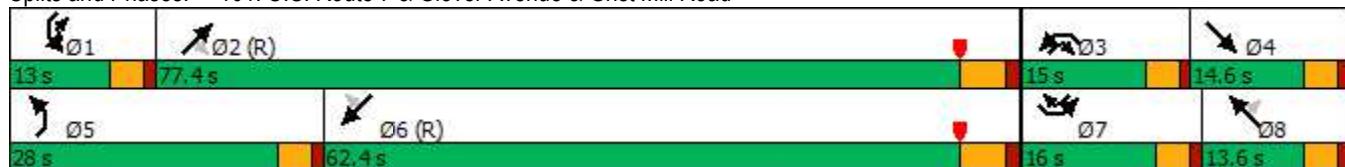
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 101: U.S. Route 7 & Glover Avenue & Grist Mill Road



2025 Combined Alt. 21D

Weekday AM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway

	↑	→	↓	↗	↖	↙	↖	↗	↑	↗	↖	↓	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑	↑	↑	↑↑	↑↑	↑↑	↑↑	↑↑	0	↑	↑↑	↑↑	
Traffic Volume (vph)	1501	0	510	0	10	10	50	410	0	10	420	1334	
Future Volume (vph)	1501	0	510	0	10	10	50	410	0	10	420	1334	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	370		0	0		0	200		0	100		225	
Storage Lanes	1		1	0		0	2		0	1		2	
Taper Length (ft)	300			25		300			25				
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95	0.97	0.95	0.95	1.00	0.95	0.88	
Frt			0.850		0.925							0.850	
Flt Protected	0.950					0.950			0.950				
Satd. Flow (prot)	3433	1863	1583	0	3274	0	3433	3539	0	1770	3539	2787	
Flt Permitted	0.950					0.950			0.494				
Satd. Flow (perm)	3433	1863	1583	0	3274	0	3433	3539	0	920	3539	2787	
Right Turn on Red		Yes				Yes			Yes			Yes	
Satd. Flow (RTOR)		32			11							1087	
Link Speed (mph)		30			30			35				35	
Link Distance (ft)		1034			351			1291				1418	
Travel Time (s)		23.5			8.0			25.1				27.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1632	0	554	0	11	11	54	446	0	11	457	1450	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	1632	0	554	0	22	0	54	446	0	11	457	1450	
Turn Type	Prot		pm+ov		NA		Prot	NA		Perm	NA	pm+ov	
Protected Phases	7	4	1		8		1	6			2	7	
Permitted Phases			4	8						2		2	
Detector Phase	7	4	1	8	8		1	6		2	2	7	
Switch Phase													
Minimum Initial (s)	9.0	9.0	5.0	7.0	7.0		5.0	9.0		15.0	15.0	9.0	
Minimum Split (s)	15.0	15.0	8.0	12.0	12.0		8.0	21.0		21.0	21.0	15.0	
Total Split (s)	68.0	80.0	13.0	12.0	12.0		13.0	40.0		27.0	27.0	68.0	
Total Split (%)	56.7%	66.7%	10.8%	10.0%	10.0%		10.8%	33.3%		22.5%	22.5%	56.7%	
Yellow Time (s)	4.0	4.0	3.0	3.0	3.0		3.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0		0.0	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	3.0		5.0		3.0	6.0		6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lag		Lead			Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes			Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Min		C-Min	C-Min	None	
Act Effct Green (s)	64.0		85.1		7.0		7.9	36.8		25.9	25.9	95.9	
Actuated g/C Ratio	0.53		0.71		0.06		0.07	0.31		0.22	0.22	0.80	
v/c Ratio	0.89		0.49		0.11		0.24	0.41		0.06	0.60	0.59	
Control Delay	30.7		6.9		36.2		55.3	35.5		42.6	47.7	2.2	
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0	
Total Delay	30.7		6.9		36.2		55.3	35.5		42.6	47.7	2.2	
LOS	C		A		D		E	D		D	D	A	
Approach Delay		24.7			36.2			37.6			13.3		
Approach LOS		C			D			D			B		
Queue Length 50th (ft)	442		95		4		21	155		7	180	36	
Queue Length 95th (ft)	#638		m162		18		41	199		25	238	64	

2025 Combined Alt. 21D

Weekday AM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		954			271			1211			1338	
Turn Bay Length (ft)	370						200			100		225
Base Capacity (vph)	1834		1159		201		286	1112		200	770	2448
Starvation Cap Reductn	0		0		0		0	0		0	0	0
Spillback Cap Reductn	0		0		0		0	0		0	0	0
Storage Cap Reductn	0		0		0		0	0		0	0	0
Reduced v/c Ratio	0.89		0.48		0.11		0.19	0.40		0.06	0.59	0.59

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 30 (25%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 21.4

Intersection LOS: C

Intersection Capacity Utilization 80.9%

ICU Level of Service D

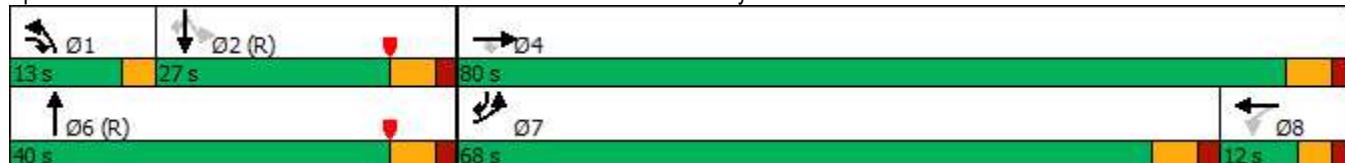
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Main Avenue & Grist Mill Road/CT DMV Driveway



2025 Combined Alt. 21D

Weekday AM Peak

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive

	↗	→	↘	↖	←	↙	↑	↗	↘	↓	↖	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	20	288	450	239	470	305	1020	0	20	250	50
Future Volume (vph)	30	20	288	450	239	470	305	1020	0	20	250	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	10	11	10	10	11	11	11	11	11
Storage Length (ft)	0		260	0		100	0		0	70		0
Storage Lanes	0		2	2		1	1		0	1		0
Taper Length (ft)	25			50			25			20		
Lane Util. Factor	1.00	1.00	0.88	0.97	0.95	0.95	1.00	0.95	0.95	0.91	0.91	0.91
Ped Bike Factor				1.00							1.00	
Fr _t			0.850		0.939	0.850					0.976	
Flt Protected		0.971		0.950			0.950				0.997	
Satd. Flow (prot)	0	1731	2576	3268	1638	1432	1636	3388	0	0	4603	0
Flt Permitted		0.971		0.950			0.468				0.838	
Satd. Flow (perm)	0	1731	2576	3263	1638	1432	806	3388	0	0	3869	0
Right Turn on Red			No		No			Yes				Yes
Satd. Flow (RTOR)											41	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		594			351			232			399	
Travel Time (s)		13.5			8.0			5.3			9.1	
Confl. Peds. (#/hr)			1	1					1	1		
Peak Hour Factor	0.84	0.84	0.84	0.87	0.87	0.87	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	6%	6%	6%
Adj. Flow (vph)	36	24	343	517	275	540	339	1133	0	22	278	56
Shared Lane Traffic (%)					35%							
Lane Group Flow (vph)	0	60	343	517	464	351	339	1133	0	0	356	0
Turn Type	Split	NA	pt+ov	Split	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	3	3	3 1	4	4		1	1 2			2	
Permitted Phases						4	1 2				2	
Detector Phase	3	3	3 1	4	4	4	1	1 2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	4.0			17.0	17.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	7.1			25.0	25.0	
Total Split (s)	12.0	12.0		32.0	32.0	32.0	19.0			27.0	27.0	
Total Split (%)	13.3%	13.3%		35.6%	35.6%	35.6%	21.1%			30.0%	30.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	0.1			4.0	4.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	0.9				-4.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	4.0				3.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None		None	None	None	Max			C-Min	C-Min	
Act Effct Green (s)		8.0	24.4	27.2	27.2	27.2	38.8	42.8			23.4	
Actuated g/C Ratio		0.09	0.27	0.30	0.30	0.30	0.43	0.48			0.26	
v/c Ratio		0.39	0.49	0.52	0.94	0.81	0.68	0.70			0.34	
Control Delay		46.8	16.9	28.1	59.4	45.2	25.0	22.0			24.7	
Queue Delay		0.0	0.0	0.0	35.6	2.5	0.4	2.6			0.0	
Total Delay		46.8	16.9	28.1	95.1	47.7	25.4	24.7			24.7	
LOS		D	B	C	F	D	C	C			C	

2025 Combined Alt. 21D

Weekday AM Peak

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		21.3			56.6			24.8			24.7	
Approach LOS		C			E			C			C	
Queue Length 50th (ft)	33	47	123	265	190	133	235				52	
Queue Length 95th (ft)	67	64	164	#432	#316	202	297				79	
Internal Link Dist (ft)	514			271				152			319	
Turn Bay Length (ft)		260			100							
Base Capacity (vph)	153	697	1016	509	445	497	1632				1061	
Starvation Cap Reductn	0	0	0	75	33	18	366				0	
Spillback Cap Reductn	0	0	0	0	0	0	0				0	
Storage Cap Reductn	0	0	0	0	0	0	0				0	
Reduced v/c Ratio	0.39	0.49	0.51	1.07	0.85	0.71	0.89				0.34	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 36.3

Intersection LOS: D

Intersection Capacity Utilization 80.1%

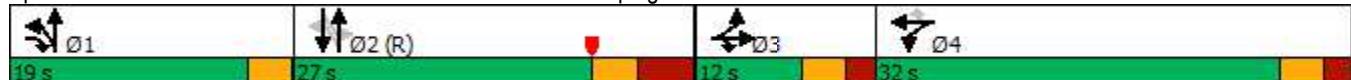
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



2025 Combined Alt. 21D
104: Main Avenue & Ramp D

Weekday AM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			↑	↑↑↑	↑↑	↑
Traffic Volume (vph)	0	0	150	1325	778	210
Future Volume (vph)	0	0	150	1325	778	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	11	11	10
Storage Length (ft)	0	0	150		0	
Storage Lanes	0	0	2		1	
Taper Length (ft)	25		160			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.95	1.00
Fr _t					0.850	
Flt Protected				0.950		
Satd. Flow (prot)	0	0	1652	4916	3421	1478
Flt Permitted				0.315		
Satd. Flow (perm)	0	0	548	4916	3421	1478
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)					228	
Link Speed (mph)	30			30	30	
Link Distance (ft)	648			391	232	
Travel Time (s)	14.7			8.9	5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	163	1440	846	228
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	163	1440	846	228
Turn Type		pm+pt		NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases			2		6	
Detector Phase		5	2	6	6	
Switch Phase						
Minimum Initial (s)		5.0	5.0	5.0	5.0	
Minimum Split (s)		9.5	22.5	22.5	22.5	
Total Split (s)		27.0	90.0	63.0	63.0	
Total Split (%)		30.0%	100.0%	70.0%	70.0%	
Yellow Time (s)		3.0	3.0	3.0	3.0	
All-Red Time (s)		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	
Lead/Lag		Lead		Lag	Lag	
Lead-Lag Optimize?		Yes		Yes	Yes	
Recall Mode		None	C-Max	C-Max	C-Max	
Act Effct Green (s)		86.0	90.0	76.5	76.5	
Actuated g/C Ratio		0.96	1.00	0.85	0.85	
v/c Ratio		0.28	0.29	0.29	0.18	
Control Delay		1.0	0.1	0.6	0.3	
Queue Delay		0.0	0.0	0.2	0.4	
Total Delay		1.0	0.2	0.8	0.7	
LOS		A	A	A	A	
Approach Delay			0.2	0.8		
Approach LOS			A	A		
Queue Length 50th (ft)		0	0	6	0	

2025 Combined Alt. 21D
104: Main Avenue & Ramp D

Weekday AM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (ft)			m0	0	7	0
Internal Link Dist (ft)	568			311	152	
Turn Bay Length (ft)			150			
Base Capacity (vph)		805	4916	2907	1290	
Starvation Cap Reductn		0	0	1181	681	
Spillback Cap Reductn		0	1084	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.20	0.38	0.49	0.37	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.29

Intersection Signal Delay: 0.5

Intersection LOS: A

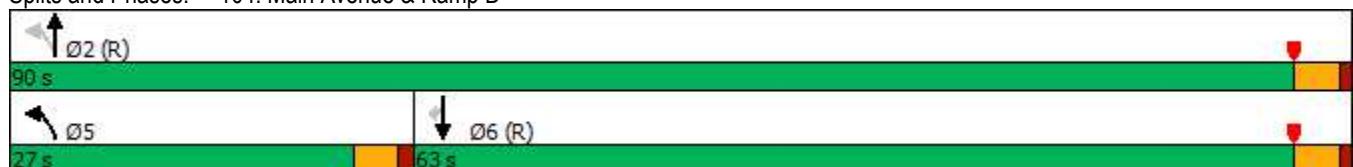
Intersection Capacity Utilization 62.3%

ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 104: Main Avenue & Ramp D



2025 Combined Alt. 21D

Weekday AM Peak

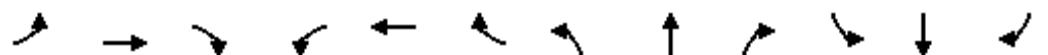
105: Main Avenue & Ramp SE/Route 15N On-Ramp

	↑	→	↓	↗	↖	↙	↖	↑	↗	↓	↙	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↑					↑↑	↑	↑	↑↑	
Traffic Volume (vph)	850	0	430	0	0	0	0	625	190	194	584	0
Future Volume (vph)	850	0	430	0	0	0	0	625	190	194	584	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	12	12	11	11	10	10	11	11
Storage Length (ft)	180		180	0		0	0		0	100		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	80			25			25			90		
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr _t		0.850	0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3204	1454	1404	0	0	0	0	3421	1507	1652	3421	0
Flt Permitted	0.950									0.239		
Satd. Flow (perm)	3204	1454	1404	0	0	0	0	3421	1507	416	3421	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		199	199						207			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		312			526			394			391	
Travel Time (s)		7.1			12.0			9.0			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	924	0	467	0	0	0	0	679	207	211	635	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	924	234	233	0	0	0	0	679	207	211	635	0
Turn Type	Perm	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2	2	6	
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5					22.5	22.5	9.5	22.5	
Total Split (s)	42.0	42.0	42.0					33.0	33.0	15.0	48.0	
Total Split (%)	46.7%	46.7%	46.7%					36.7%	36.7%	16.7%	53.3%	
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effect Green (s)	35.5	35.5	35.5					32.4	32.4	46.5	46.5	
Actuated g/C Ratio	0.39	0.39	0.39					0.36	0.36	0.52	0.52	
v/c Ratio	0.73	0.34	0.35					0.55	0.31	0.60	0.36	
Control Delay	26.8	5.3	5.4					26.1	4.7	19.2	11.0	
Queue Delay	0.0	0.0	0.0					0.2	0.0	0.0	0.0	
Total Delay	26.8	5.3	5.4					26.3	4.7	19.2	11.0	
LOS	C	A	A					C	A	B	B	
Approach Delay		19.6						21.3			13.0	
Approach LOS		B						C			B	

2025 Combined Alt. 21D

Weekday AM Peak

105: Main Avenue & Ramp SE/Route 15N On-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	213	12	11					170	0	82	123	
Queue Length 95th (ft)	281	58	57					229	47	142	176	
Internal Link Dist (ft)		232			446			314			311	
Turn Bay Length (ft)	180		180								100	
Base Capacity (vph)	1352	728	707					1230	674	366	1768	
Starvation Cap Reductn	0	0	0					110	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.68	0.32	0.33					0.61	0.31	0.58	0.36	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 18.3

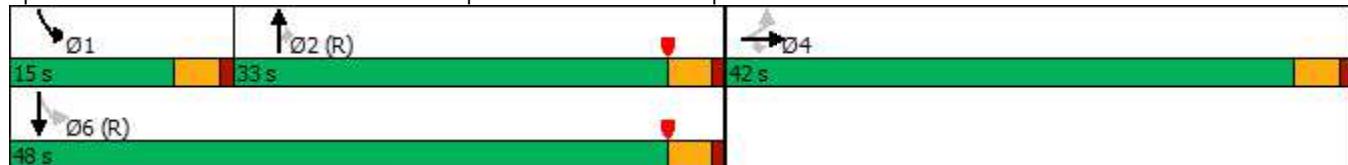
Intersection LOS: B

Intersection Capacity Utilization 62.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 105: Main Avenue & Ramp SE/Route 15N On-Ramp



APPENDIX H2
CAPACITY ANALYSES

2025 Combined Conditions
Weekday Morning Peak Hour
Alternative 26

2025 Combined Alt. 26

Weekday AM Peak

101: U.S. Route 7 & Glover Avenue & Grist Mill Road

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR		
Lane Configurations	2	1	2	1	2	1	2	1	2	1	2	1	2	1
Traffic Volume (vph)	260	10	880	312	0	101	480	1650	387	114	1180	100		
Future Volume (vph)	260	10	880	312	0	101	480	1650	387	114	1180	100		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	250		250	215		215	600		250	150		250		
Storage Lanes	2		1	2		1	2		1	1		1		
Taper Length (ft)	100			200			150			175				
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00		
Frt			0.850			0.850			0.850			0.850		
Flt Protected	0.950			0.950			0.950			0.950				
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583		
Flt Permitted	0.950			0.950			0.950			0.950				
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583		
Right Turn on Red			No			No			No			No		
Satd. Flow (RTOR)														
Link Speed (mph)		30			30			40			30			
Link Distance (ft)		403			884			981			1040			
Travel Time (s)		9.2			20.1			16.7			23.6			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	283	11	957	339	0	110	522	1793	421	124	1283	109		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	283	11	957	339	0	110	522	1793	421	124	1283	109		
Turn Type	Prot	NA	Free	Prot		pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov		
Protected Phases	7	4		3	8	1	5	2	3	1	6	7		
Permitted Phases			Free			8			2			6		
Detector Phase	7	4		3	8	1	5	2	3	1	6	7		
Switch Phase														
Minimum Initial (s)	5.0	9.0		5.0	9.0	5.0	5.0	15.0	5.0	5.0	15.0	5.0		
Minimum Split (s)	9.0	13.5		9.0	13.5	9.0	9.0	20.5	9.0	9.0	20.5	9.0		
Total Split (s)	16.0	14.6		15.0	13.6	13.0	28.0	77.4	15.0	13.0	62.4	16.0		
Total Split (%)	13.3%	12.2%		12.5%	11.3%	10.8%	23.3%	64.5%	12.5%	10.8%	52.0%	13.3%		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0		
All-Red Time (s)	1.0	1.5		1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5	1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0		
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead		
Lead-Lag Optimize?														
Recall Mode	None	None		None	None	None	C-Min	None	None	C-Min	None			
Act Effct Green (s)	18.8	9.0	120.0	16.1		13.7	22.6	73.9	95.6	13.7	65.1	89.4		
Actuated g/C Ratio	0.16	0.08	1.00	0.13		0.11	0.19	0.62	0.80	0.11	0.54	0.74		
v/c Ratio	0.53	0.08	0.60	0.74		0.61	0.81	0.82	0.33	0.61	0.67	0.09		
Control Delay	50.5	53.1	1.7	61.1		65.6	57.0	22.1	4.7	60.3	23.0	5.8		
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	50.5	53.1	1.7	61.1		65.6	57.0	22.1	4.7	60.3	23.0	5.8		
LOS	D	D	A	E		E	E	C	A	E	C	A		
Approach Delay		13.2			62.2			26.1			24.8			
Approach LOS		B			E			C			C			
Queue Length 50th (ft)	106	8	0	129		81	200	539	71	86	366	24		
Queue Length 95th (ft)	141	28	0	#247		#189	257	675	148	#204	534	49		

2025 Combined Alt. 26

Weekday AM Peak

101: U.S. Route 7 & Glover Avenue & Grist Mill Road



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		323			804			901			960	
Turn Bay Length (ft)	250		250	215		215	600		250	150		250
Base Capacity (vph)	538	156	1583	461		181	700	2180	1260	202	1920	1180
Starvation Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.07	0.60	0.74		0.61	0.75	0.82	0.33	0.61	0.67	0.09

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 7 (6%), Referenced to phase 2:NET and 6:SWT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 25.8

Intersection LOS: C

Intersection Capacity Utilization 79.2%

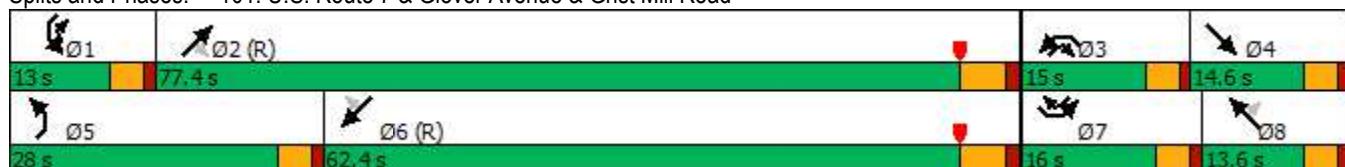
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 101: U.S. Route 7 & Glover Avenue & Grist Mill Road



2025 Combined Alt. 26

Weekday AM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway

	↑	→	↓	↗	↖	↙	↖	↗	↑	↗	↖	↓	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑	↑	↑		↑↑		↑↑	↑↑		↑	↑↑	↑↑	
Traffic Volume (vph)	1501	0	510	0	10	10	50	410	0	10	420	1334	
Future Volume (vph)	1501	0	510	0	10	10	50	410	0	10	420	1334	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	370		0	0		0	200		0	100		225	
Storage Lanes	1		1	0		0	2		0	1		2	
Taper Length (ft)	300			25		300			25				
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95	0.97	0.95	0.95	1.00	0.95	0.88	
Frt			0.850		0.925							0.850	
Flt Protected	0.950					0.950			0.950				
Satd. Flow (prot)	3433	1863	1583	0	3274	0	3433	3539	0	1770	3539	2787	
Flt Permitted	0.950					0.950			0.494				
Satd. Flow (perm)	3433	1863	1583	0	3274	0	3433	3539	0	920	3539	2787	
Right Turn on Red		Yes				Yes			Yes			Yes	
Satd. Flow (RTOR)		32			11							1087	
Link Speed (mph)		30			30			35				35	
Link Distance (ft)		1040			351			1293				1418	
Travel Time (s)		23.6			8.0			25.2				27.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1632	0	554	0	11	11	54	446	0	11	457	1450	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	1632	0	554	0	22	0	54	446	0	11	457	1450	
Turn Type	Prot		pm+ov		NA		Prot	NA		Perm	NA	pm+ov	
Protected Phases	7	4	1		8		1	6			2	7	
Permitted Phases			4	8						2		2	
Detector Phase	7	4	1	8	8		1	6		2	2	7	
Switch Phase													
Minimum Initial (s)	9.0	9.0	5.0	7.0	7.0		5.0	9.0		15.0	15.0	9.0	
Minimum Split (s)	15.0	15.0	8.0	12.0	12.0		8.0	21.0		21.0	21.0	15.0	
Total Split (s)	68.0	80.0	13.0	12.0	12.0		13.0	40.0		27.0	27.0	68.0	
Total Split (%)	56.7%	66.7%	10.8%	10.0%	10.0%		10.8%	33.3%		22.5%	22.5%	56.7%	
Yellow Time (s)	4.0	4.0	3.0	3.0	3.0		3.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0		0.0	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	3.0		5.0		3.0	6.0		6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lag		Lead			Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes			Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Min		C-Min	C-Min	None	
Act Effct Green (s)	64.0		85.1		7.0		7.9	36.8		25.9	25.9	95.9	
Actuated g/C Ratio	0.53		0.71		0.06		0.07	0.31		0.22	0.22	0.80	
v/c Ratio	0.89		0.49		0.11		0.24	0.41		0.06	0.60	0.59	
Control Delay	31.4		6.8		36.2		55.3	35.5		42.6	47.7	2.2	
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0	
Total Delay	31.4		6.8		36.2		55.3	35.5		42.6	47.7	2.2	
LOS	C		A		D		E	D		D	D	A	
Approach Delay		25.2			36.2			37.6			13.3		
Approach LOS		C			D			D			B		
Queue Length 50th (ft)	442		90		4		21	155		7	180	36	
Queue Length 95th (ft)	#638		m168		18		41	199		25	238	64	

2025 Combined Alt. 26

Weekday AM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		960			271			1213			1338	
Turn Bay Length (ft)	370						200			100		225
Base Capacity (vph)	1834		1159		201		286	1112		200	770	2448
Starvation Cap Reductn	0		0		0		0	0		0	0	0
Spillback Cap Reductn	0		0		0		0	0		0	0	0
Storage Cap Reductn	0		0		0		0	0		0	0	0
Reduced v/c Ratio	0.89		0.48		0.11		0.19	0.40		0.06	0.59	0.59

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 30 (25%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 21.6

Intersection LOS: C

Intersection Capacity Utilization 80.9%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Main Avenue & Grist Mill Road/CT DMV Driveway

2025 Combined Alt. 26

Weekday AM Peak

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive

	↗	→	↘	↖	←	↙	↑	↗	↘	↓	↖	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	20	288	450	239	470	305	1020	0	20	250	50
Future Volume (vph)	30	20	288	450	239	470	305	1020	0	20	250	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	10	11	10	10	11	11	11	11	11
Storage Length (ft)	0		260	0		100	0		0	70		0
Storage Lanes	0		2	2		1	1		0	1		0
Taper Length (ft)	25			50			25			20		
Lane Util. Factor	1.00	1.00	0.88	0.97	0.95	0.95	1.00	0.95	0.95	0.91	0.91	0.91
Ped Bike Factor				1.00							1.00	
Fr _t			0.850		0.939	0.850					0.976	
Flt Protected		0.971		0.950			0.950				0.997	
Satd. Flow (prot)	0	1731	2576	3268	1638	1432	1636	3388	0	0	4603	0
Flt Permitted		0.971		0.950			0.468				0.838	
Satd. Flow (perm)	0	1731	2576	3263	1638	1432	806	3388	0	0	3869	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)											41	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		594			351			232			399	
Travel Time (s)		13.5			8.0			5.3			9.1	
Confl. Peds. (#/hr)			1	1					1	1		
Peak Hour Factor	0.84	0.84	0.84	0.87	0.87	0.87	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	3%	3%	3%	6%	6%	6%
Adj. Flow (vph)	36	24	343	517	275	540	339	1133	0	22	278	56
Shared Lane Traffic (%)					35%							
Lane Group Flow (vph)	0	60	343	517	464	351	339	1133	0	0	356	0
Turn Type	Split	NA	pt+ov	Split	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	3	3	3 1	4	4		1	1 2			2	
Permitted Phases						4	1 2				2	
Detector Phase	3	3	3 1	4	4	4	1	1 2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	4.0			17.0	17.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	7.1			25.0	25.0	
Total Split (s)	12.0	12.0		32.0	32.0	32.0	19.0			27.0	27.0	
Total Split (%)	13.3%	13.3%		35.6%	35.6%	35.6%	21.1%			30.0%	30.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	0.1			4.0	4.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0	0.9				-4.0	
Total Lost Time (s)		4.0		4.0	4.0	4.0	4.0				3.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None		None	None	None	Max			C-Min	C-Min	
Act Effct Green (s)		8.0	24.4	27.2	27.2	27.2	38.8	42.8			23.4	
Actuated g/C Ratio		0.09	0.27	0.30	0.30	0.30	0.43	0.48			0.26	
v/c Ratio		0.39	0.49	0.52	0.94	0.81	0.68	0.70			0.34	
Control Delay		46.8	16.9	28.1	59.4	45.2	24.5	21.8			24.7	
Queue Delay		0.0	0.0	0.0	35.6	2.5	0.4	2.6			0.0	
Total Delay		46.8	16.9	28.1	95.1	47.7	24.9	24.4			24.7	
LOS		D	B	C	F	D	C	C			C	

2025 Combined Alt. 26

Weekday AM Peak

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		21.3			56.6			24.5			24.7	
Approach LOS		C			E			C			C	
Queue Length 50th (ft)	33	47	123	265	190	125	261				52	
Queue Length 95th (ft)	67	64	164	#432	#316	197	338				79	
Internal Link Dist (ft)	514			271				152			319	
Turn Bay Length (ft)		260			100							
Base Capacity (vph)	153	697	1016	509	445	497	1632				1061	
Starvation Cap Reductn	0	0	0	75	33	18	366				0	
Spillback Cap Reductn	0	0	0	0	0	0	0				0	
Storage Cap Reductn	0	0	0	0	0	0	0				0	
Reduced v/c Ratio	0.39	0.49	0.51	1.07	0.85	0.71	0.89				0.34	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 36.2

Intersection LOS: D

Intersection Capacity Utilization 80.1%

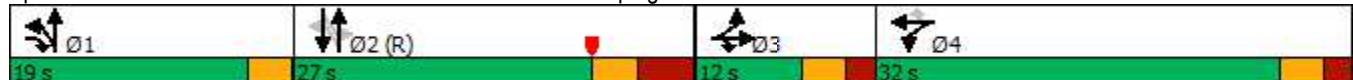
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



2025 Combined Alt. 26
104: Main Avenue & Ramp D

Weekday AM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			↑	↑↑↑	↑↑	↑
Traffic Volume (vph)	0	0	150	1325	778	210
Future Volume (vph)	0	0	150	1325	778	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	11	11	10
Storage Length (ft)	0	0	150		0	
Storage Lanes	0	0	2		1	
Taper Length (ft)	25		160			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.95	1.00
Fr _t					0.850	
Flt Protected				0.950		
Satd. Flow (prot)	0	0	1652	4916	3421	1478
Flt Permitted				0.315		
Satd. Flow (perm)	0	0	548	4916	3421	1478
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)					228	
Link Speed (mph)	30			30	30	
Link Distance (ft)	596			391	232	
Travel Time (s)	13.5			8.9	5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	163	1440	846	228
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	163	1440	846	228
Turn Type		pm+pt		NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases			2		6	
Detector Phase		5	2	6	6	
Switch Phase						
Minimum Initial (s)		5.0	5.0	5.0	5.0	
Minimum Split (s)		9.5	22.5	22.5	22.5	
Total Split (s)		27.0	90.0	63.0	63.0	
Total Split (%)		30.0%	100.0%	70.0%	70.0%	
Yellow Time (s)		3.0	3.0	3.0	3.0	
All-Red Time (s)		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	
Lead/Lag		Lead		Lag	Lag	
Lead-Lag Optimize?		Yes		Yes	Yes	
Recall Mode		None	C-Max	C-Max	C-Max	
Act Effct Green (s)		86.0	90.0	76.5	76.5	
Actuated g/C Ratio		0.96	1.00	0.85	0.85	
v/c Ratio		0.28	0.29	0.29	0.18	
Control Delay		1.3	0.2	0.6	0.3	
Queue Delay		0.0	0.0	0.2	0.4	
Total Delay		1.3	0.2	0.8	0.7	
LOS		A	A	A	A	
Approach Delay			0.3	0.8		
Approach LOS			A	A		
Queue Length 50th (ft)		0	0	6	0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (ft)			0	0	7	0
Internal Link Dist (ft)	516			311	152	
Turn Bay Length (ft)			150			
Base Capacity (vph)		805	4916	2907	1290	
Starvation Cap Reductn		0	0	1181	681	
Spillback Cap Reductn		0	912	0	0	
Storage Cap Reductn		0	0	0	0	
Reduced v/c Ratio		0.20	0.36	0.49	0.37	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.29

Intersection Signal Delay: 0.5

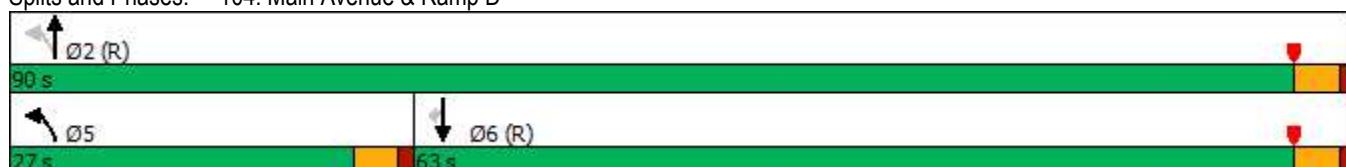
Intersection LOS: A

Intersection Capacity Utilization 62.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 104: Main Avenue & Ramp D



2025 Combined Alt. 26

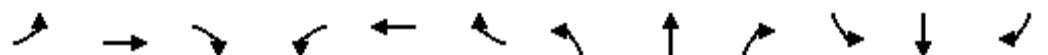
Weekday AM Peak

105: Main Avenue & Ramp SE/Route 15N On-Ramp

	↗	→	↘	↖	←	↙	↑	↗	↘	↓	↖	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↑					↑↑	↑	↑	↑↑	
Traffic Volume (vph)	850	110	430	0	0	0	0	625	190	194	584	0
Future Volume (vph)	850	110	430	0	0	0	0	625	190	194	584	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	12	12	11	11	10	10	11	11
Storage Length (ft)	180		0	0		0	0		0	100		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	80			25			25			90		
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr _t		0.910	0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3204	1557	1404	0	0	0	0	3421	1507	1652	3421	0
Flt Permitted	0.950									0.233		
Satd. Flow (perm)	3204	1557	1404	0	0	0	0	3421	1507	405	3421	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		114	207						207			
Link Speed (mph)		30		30			30			30		
Link Distance (ft)		312		526			394			391		
Travel Time (s)		7.1		12.0			9.0			8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	924	120	467	0	0	0	0	679	207	211	635	0
Shared Lane Traffic (%)			39%									
Lane Group Flow (vph)	924	302	285	0	0	0	0	679	207	211	635	0
Turn Type	Perm	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2	2	6	
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5					22.5	22.5	9.5	22.5	
Total Split (s)	36.0	36.0	36.0					30.0	30.0	14.0	44.0	
Total Split (%)	45.0%	45.0%	45.0%					37.5%	37.5%	17.5%	55.0%	
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effect Green (s)	30.8	30.8	30.8					27.8	27.8	41.2	41.2	
Actuated g/C Ratio	0.38	0.38	0.38					0.35	0.35	0.52	0.52	
v/c Ratio	0.75	0.45	0.43					0.57	0.31	0.59	0.36	
Control Delay	25.6	13.1	7.4					19.5	7.0	18.7	12.6	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	25.6	13.1	7.4					19.5	7.0	18.7	12.6	
LOS	C	B	A					B	A	B	B	
Approach Delay		19.7						16.6			14.1	
Approach LOS		B						B			B	

2025 Combined Alt. 26

Weekday AM Peak

105: Main Avenue & Ramp SE/Route 15N On-Ramp

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	195	65	25					168	10	57	96	
Queue Length 95th (ft)	263	134	82					223	90	99	134	
Internal Link Dist (ft)		232			446			314			311	
Turn Bay Length (ft)	180										100	
Base Capacity (vph)	1281	691	685					1190	659	364	1763	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.72	0.44	0.42					0.57	0.31	0.58	0.36	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0.5 (1%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 17.4

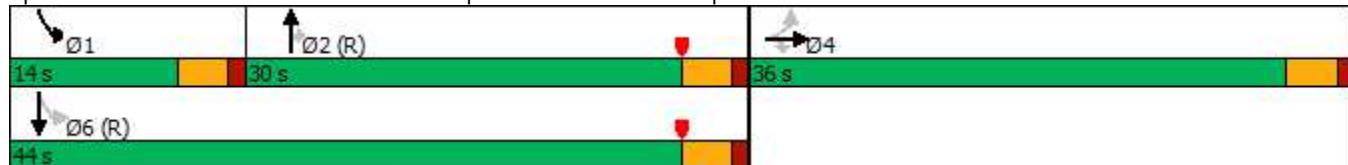
Intersection LOS: B

Intersection Capacity Utilization 62.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 105: Main Avenue & Ramp SE/Route 15N On-Ramp



2025 Combined Alt. 26
106: U.S. Route 7 & Ramp D

Weekday AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑	↑↑			↑↑↑	↑		↑↑↑	↑
Traffic Volume (vph)	0	0	0	390	290	70	0	2447	730	0	1688	684
Future Volume (vph)	0	0	0	390	290	70	0	2447	730	0	1688	684
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		700	0		760
Storage Lanes	0		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Frt					0.971				0.850			0.850
Flt Protected					0.950							
Satd. Flow (prot)	0	0	0	1770	3437	0	0	5085	1583	0	5085	1583
Flt Permitted					0.950							
Satd. Flow (perm)	0	0	0	1770	3437	0	0	5085	1583	0	5085	1583
Right Turn on Red				Yes		Yes			Yes			Yes
Satd. Flow (RTOR)						1			793			264
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			274			973			1101	
Travel Time (s)		4.0			6.2			22.1			25.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	424	315	76	0	2660	793	0	1835	743
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	424	391	0	0	2660	793	0	1835	743
Turn Type				Perm	NA			NA	Perm		NA	Perm
Protected Phases					8			2			6	
Permitted Phases					8				2			6
Detector Phase				8	8			2	2		6	6
Switch Phase												
Minimum Initial (s)				5.0	5.0			5.0	5.0		5.0	5.0
Minimum Split (s)				25.0	25.0			25.0	25.0		25.0	25.0
Total Split (s)				33.0	33.0			57.0	57.0		57.0	57.0
Total Split (%)				36.7%	36.7%			63.3%	63.3%		63.3%	63.3%
Yellow Time (s)				4.0	4.0			4.0	4.0		4.0	4.0
All-Red Time (s)				3.0	3.0			3.0	3.0		3.0	3.0
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)				7.0	7.0			7.0	7.0		7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode		None	None				C-Max	C-Max		C-Max	C-Max	
Act Effct Green (s)		24.7	24.7				51.3	51.3		51.3	51.3	
Actuated g/C Ratio		0.27	0.27				0.57	0.57		0.57	0.57	
v/c Ratio		0.87	0.41				0.92	0.64		0.63	0.73	
Control Delay		50.0	27.0				21.0	4.7		14.6	14.3	
Queue Delay		0.0	0.0				0.0	0.0		0.0	0.0	
Total Delay		50.0	27.0				21.0	4.7		14.6	14.3	
LOS		D	C				C	A		B	B	
Approach Delay				38.9			17.2			14.5		
Approach LOS					D			B			B	
Queue Length 50th (ft)				221	93		356	77		248	193	
Queue Length 95th (ft)				#381	134		m332	m62		297	349	

2025 Combined Alt. 26
106: U.S. Route 7 & Ramp D

Weekday AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)	96			194			893			1021		
Turn Bay Length (ft)								700				760
Base Capacity (vph)				511	993			2896	1242		2896	1015
Starvation Cap Reductn				0	0			0	0		0	0
Spillback Cap Reductn				0	0			0	0		0	0
Storage Cap Reductn				0	0			0	0		0	0
Reduced v/c Ratio				0.83	0.39			0.92	0.64		0.63	0.73

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 18.8

Intersection LOS: B

Intersection Capacity Utilization 80.6%

ICU Level of Service D

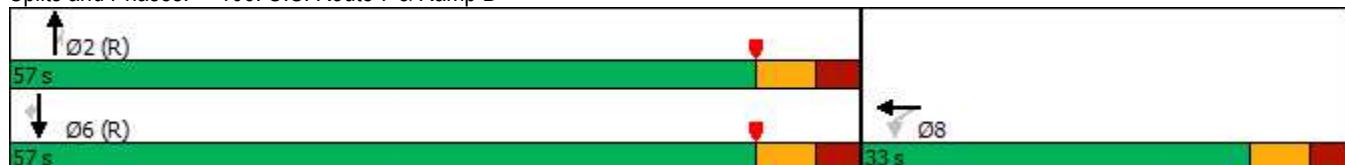
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 106: U.S. Route 7 & Ramp D



2025 Combined Alt. 26

Weekday AM Peak

107: U.S. Route 7 & Route 15N Off-Ramp/Ramp SE

	→	→	→	←	←	↑	↑	↓	↓	←		
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑					↑↑↑	↑	↑	↑↑↑	
Traffic Volume (vph)	589	0	770	0	0	0	0	2588	260	130	1948	0
Future Volume (vph)	589	0	770	0	0	0	0	2588	260	130	1948	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		390	0		0	0		925	200		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			230		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt			0.850						0.850			
Flt Protected	0.950	0.950								0.950		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	5085	1583	1770	5085	0
Flt Permitted	0.950	0.950								0.950		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	5085	1583	1770	5085	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			294						283			
Link Speed (mph)	30			30			30			30		
Link Distance (ft)	1066			558			1341			973		
Travel Time (s)	24.2			12.7			30.5			22.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	640	0	837	0	0	0	0	2813	283	141	2117	0
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	320	320	837	0	0	0	0	2813	283	141	2117	0
Turn Type	Perm	NA	Free					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		Free						2			
Detector Phase	4	4						2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	5.0	5.0	5.0		
Minimum Split (s)	25.0	25.0					25.0	25.0	12.0	25.0		
Total Split (s)	25.0	25.0					52.0	52.0	13.0	65.0		
Total Split (%)	27.8%	27.8%					57.8%	57.8%	14.4%	72.2%		
Yellow Time (s)	4.0	4.0					4.0	4.0	4.0	4.0		
All-Red Time (s)	3.0	3.0					3.0	3.0	3.0	3.0		
Lost Time Adjust (s)	0.0	0.0					0.0	0.0	0.0	0.0		
Total Lost Time (s)	7.0	7.0					7.0	7.0	7.0	7.0		
Lead/Lag							Lag	Lag	Lead			
Lead-Lag Optimize?							Yes	Yes	Yes			
Recall Mode	None	None					C-Max	C-Max	None	C-Max		
Act Effct Green (s)	18.0	18.0	90.0				45.0	45.0	6.0	58.0		
Actuated g/C Ratio	0.20	0.20	1.00				0.50	0.50	0.07	0.64		
v/c Ratio	0.95	0.95	0.53				1.11	0.30	1.19	0.65		
Control Delay	76.1	76.1	1.3				78.2	2.5	173.9	6.7		
Queue Delay	0.0	0.0	0.0				0.0	0.0	0.0	0.0		
Total Delay	76.1	76.1	1.3				78.2	2.5	173.9	6.7		
LOS	E	E	A				E	A	F	A		
Approach Delay		33.7					71.3			17.1		
Approach LOS		C					E			B		
Queue Length 50th (ft)	190	190	0				~675	0	~100	124		
Queue Length 95th (ft)	#361	#361	0				#769	38	m#189	154		

2025 Combined Alt. 26

Weekday AM Peak

107: U.S. Route 7 & Route 15N Off-Ramp/Ramp SE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		986			478			1261				893
Turn Bay Length (ft)			390						925	200		
Base Capacity (vph)	336	336	1583					2542	933	118	3277	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.95	0.95	0.53					1.11	0.30	1.19	0.65	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.19

Intersection Signal Delay: 45.3

Intersection LOS: D

Intersection Capacity Utilization 91.0%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

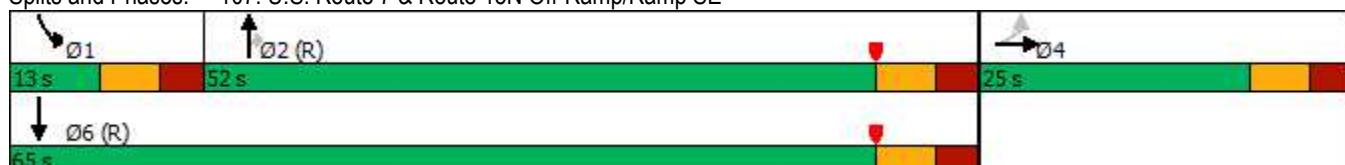
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 107: U.S. Route 7 & Route 15N Off-Ramp/Ramp SE



APPENDIX H3
CAPACITY ANALYSES

2025 Combined Conditions
Weekday Afternoon Peak Hour
Alternative 21-D

2025 Combined Alt. 21D

Weekday PM Peak

101: U.S. Route 7 & Glover Avenue & Grist Mill Road

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR		
Lane Configurations	2/1	1/1	1/1	2/1	1/1	1/1	2/1	1/1	1/1	2/1	1/1	1/1		
Traffic Volume (vph)	90	10	800	409	60	140	540	1460	310	92	1070	210		
Future Volume (vph)	90	10	800	409	60	140	540	1460	310	92	1070	210		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	250		250	215		215	600		250	150		250		
Storage Lanes	2		1	2		1	2		1	1		1		
Taper Length (ft)	100			200			150			175				
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00		
Frt			0.850			0.850			0.850			0.850		
Flt Protected	0.950			0.950			0.950			0.950				
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583		
Flt Permitted	0.950			0.950			0.950			0.950				
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583		
Right Turn on Red			No			No			No			No		
Satd. Flow (RTOR)														
Link Speed (mph)		30			30			40			30			
Link Distance (ft)		397			870			981			1039			
Travel Time (s)		9.0			19.8			16.7			23.6			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	98	11	870	445	65	152	587	1587	337	100	1163	228		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	98	11	870	445	65	152	587	1587	337	100	1163	228		
Turn Type	Prot	NA	Free	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov		
Protected Phases	7	4		3	8	1	5	2	3	1	6	7		
Permitted Phases			Free			8			2			6		
Detector Phase	7	4		3	8	1	5	2	3	1	6	7		
Switch Phase														
Minimum Initial (s)	5.0	9.0		5.0	9.0	5.0	5.0	15.0	5.0	5.0	15.0	5.0		
Minimum Split (s)	9.0	13.5		9.0	13.5	9.0	9.0	20.5	9.0	9.0	20.5	9.0		
Total Split (s)	16.0	14.6		15.0	13.6	13.0	28.0	77.4	15.0	13.0	62.4	16.0		
Total Split (%)	13.3%	12.2%		12.5%	11.3%	10.8%	23.3%	64.5%	12.5%	10.8%	52.0%	13.3%		
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0		
All-Red Time (s)	1.0	1.5		1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5	1.0		
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0		
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead		
Lead-Lag Optimize?														
Recall Mode	None	None		None	None	None	None	C-Min	None	None	C-Min	None		
Act Effct Green (s)	14.2	9.2	120.0	23.9	10.8	23.5	24.1	68.8	98.2	10.9	55.6	75.2		
Actuated g/C Ratio	0.12	0.08	1.00	0.20	0.09	0.20	0.20	0.57	0.82	0.09	0.46	0.63		
v/c Ratio	0.24	0.08	0.55	0.65	0.39	0.49	0.85	0.78	0.26	0.62	0.71	0.23		
Control Delay	52.8	52.6	1.4	50.6	58.9	48.0	58.8	22.9	3.6	65.5	32.2	11.5		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	52.8	52.6	1.4	50.6	58.9	48.0	58.8	22.9	3.6	65.5	32.2	11.5		
LOS	D	D	A	D	E	D	E	C	A	E	C	B		
Approach Delay				7.1			50.8			28.7		31.3		
Approach LOS				A			D			C		C		
Queue Length 50th (ft)	38	8	0	167	49	102	223	451	43	76	380	83		
Queue Length 95th (ft)	64	27	0	#344	96	176	#317	534	113	#170	468	112		

2025 Combined Alt. 21D

Weekday PM Peak

101: U.S. Route 7 & Glover Avenue & Grist Mill Road



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		317			790			901			959	
Turn Bay Length (ft)	250		250	215		215	600		250	150		250
Base Capacity (vph)	465	156	1583	683	168	309	712	2120	1295	160	1683	1020
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.07	0.55	0.65	0.39	0.49	0.82	0.75	0.26	0.63	0.69	0.22

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 7 (6%), Referenced to phase 2:NET and 6:SWT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 28.2

Intersection LOS: C

Intersection Capacity Utilization 75.5%

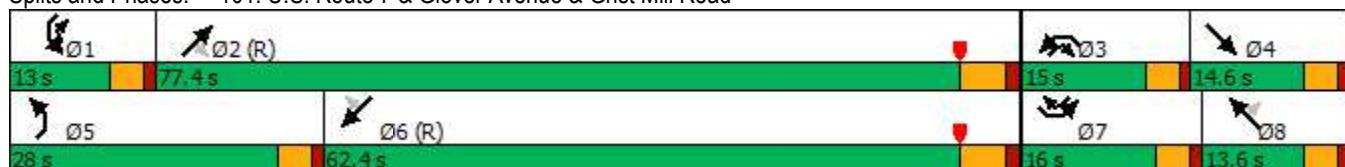
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 101: U.S. Route 7 & Glover Avenue & Grist Mill Road



2025 Combined Alt. 21D

Weekday PM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↑↑	↓↓	↑↑	↑↑	↑↑	↑↑	↑↑	↑	↑↑	↑↑
Traffic Volume (vph)	1540	0	150	0	10	10	120	600	10	10	240	1242
Future Volume (vph)	1540	0	150	0	10	10	120	600	10	10	240	1242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370		0	0		0	200		0	100		225
Storage Lanes	1		1	0		0	2		0	1		2
Taper Length (ft)	300			25			300			25		
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95	0.97	0.95	0.95	1.00	0.95	0.88
Frt			0.850		0.925			0.998				0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	0	3274	0	3433	3532	0	1770	3539	2787
Flt Permitted	0.950						0.950			0.327		
Satd. Flow (perm)	3433	1863	1583	0	3274	0	3433	3532	0	609	3539	2787
Right Turn on Red		Yes				Yes			Yes		Yes	
Satd. Flow (RTOR)		109			11			1				719
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1039			351			1293			1421	
Travel Time (s)		23.6			8.0			25.2			27.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1674	0	163	0	11	11	130	652	11	11	261	1350
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1674	0	163	0	22	0	130	663	0	11	261	1350
Turn Type	Prot		pm+ov		NA		Prot	NA		Perm	NA	pm+ov
Protected Phases	7	4	1		8		1	6			2	7
Permitted Phases			4	8						2		2
Detector Phase	7	4	1	8	8		1	6		2	2	7
Switch Phase												
Minimum Initial (s)	9.0	9.0	5.0	7.0	7.0		5.0	9.0		15.0	15.0	9.0
Minimum Split (s)	15.0	15.0	8.0	12.0	12.0		8.0	21.0		21.0	21.0	15.0
Total Split (s)	72.0	84.0	12.0	12.0	12.0		12.0	36.0		24.0	24.0	72.0
Total Split (%)	60.0%	70.0%	10.0%	10.0%	10.0%		10.0%	30.0%		20.0%	20.0%	60.0%
Yellow Time (s)	4.0	4.0	3.0	3.0	3.0		3.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0		0.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	3.0		5.0		3.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead		Lead	Lag	Lag		Lead			Lag	Lag	Lead
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes			Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Min		C-Min	C-Min	None
Act Effct Green (s)	67.1		88.9		7.0		8.6	33.7		22.1	22.1	95.2
Actuated g/C Ratio	0.56		0.74		0.06		0.07	0.28		0.18	0.18	0.79
v/c Ratio	0.87		0.14		0.11		0.53	0.67		0.10	0.40	0.57
Control Delay	44.9		4.0		36.2		61.9	43.5		48.0	47.2	3.2
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	44.9		4.0		36.2		61.9	43.5		48.0	47.2	3.2
LOS	D		A		D		E	D		D	D	A
Approach Delay		41.3			36.2			46.5			10.6	
Approach LOS		D			D			D			B	
Queue Length 50th (ft)	686		17		4		51	258		8	102	83
Queue Length 95th (ft)	767		m44		18		84	320		26	143	127

2025 Combined Alt. 21D

Weekday PM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		959			271			1213			1341	
Turn Bay Length (ft)	370						200			100		225
Base Capacity (vph)	1936		1206		201		257	1024		117	683	2369
Starvation Cap Reductn	0		0		0		0	0		0	0	0
Spillback Cap Reductn	0		0		0		0	0		0	0	0
Storage Cap Reductn	0		0		0		0	0		0	0	0
Reduced v/c Ratio	0.86		0.14		0.11		0.51	0.65		0.09	0.38	0.57

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 30.6

Intersection LOS: C

Intersection Capacity Utilization 95.0%

ICU Level of Service F

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Main Avenue & Grist Mill Road/CT DMV Driveway



2025 Combined Alt. 21D

Weekday PM Peak

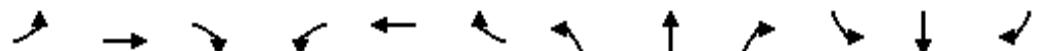
103: Main Avenue & Glover Avenue/Creeping Hemlock Drive

	↗	→	↘	↖	←	↙	↑	↗	↘	↓	↖	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	70	539	330	116	70	155	330	130	60	1420	60
Future Volume (vph)	20	70	539	330	116	70	155	330	130	60	1420	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	10	11	10	10	11	11	11	11	11
Storage Length (ft)	0		260	0		100	0		0	70		0
Storage Lanes	0		2	2		1	1		0	1		0
Taper Length (ft)	25			50			25			20		
Lane Util. Factor	1.00	1.00	0.88	0.97	0.95	0.95	1.00	0.95	0.95	0.91	0.91	0.91
Ped Bike Factor							1.00				1.00	
Fr _t			0.850		0.974	0.850		0.958			0.994	
Flt Protected		0.989		0.950			0.950				0.998	
Satd. Flow (prot)	0	1781	2601	3236	1683	1418	1668	3310	0	0	4871	0
Flt Permitted		0.989		0.950			0.117				0.887	
Satd. Flow (perm)	0	1781	2601	3236	1683	1418	205	3310	0	0	4329	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)							108				8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		594			351			232			399	
Travel Time (s)		13.5			8.0			5.3			9.1	
Confl. Peds. (#/hr)							10				10	
Peak Hour Factor	0.80	0.80	0.80	0.88	0.88	0.88	0.84	0.84	0.84	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	25	88	674	375	132	80	185	393	155	65	1543	65
Shared Lane Traffic (%)					35%							
Lane Group Flow (vph)	0	113	674	375	160	52	185	548	0	0	1673	0
Turn Type	Split	NA	pt+ov	Split	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	3	3	3 1	4	4		1	1 2			2	
Permitted Phases						4	1 2				2	
Detector Phase	3	3	3 1	4	4	4	1	1 2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	4.0			17.0	17.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	7.1			25.0	25.0	
Total Split (s)	19.0	19.0		16.0	16.0	16.0	13.0			42.0	42.0	
Total Split (%)	21.1%	21.1%		17.8%	17.8%	17.8%	14.4%			46.7%	46.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	0.1			4.0	4.0	
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	0.9				-4.0		
Total Lost Time (s)		4.0		4.0	4.0	4.0	4.0				3.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None		None	None	None	Max			C-Min	C-Min	
Act Effct Green (s)	15.0	24.0		12.0	12.0	12.0	47.0	51.0			39.0	
Actuated g/C Ratio	0.17	0.27		0.13	0.13	0.13	0.52	0.57			0.43	
v/c Ratio	0.38	0.97		0.87	0.71	0.28	0.73	0.29			0.89	
Control Delay	37.7	50.6		60.1	56.5	39.4	46.1	8.2			31.5	
Queue Delay		0.0		8.4	16.7	0.0	0.0	0.6			0.0	
Total Delay	37.7	59.0		76.8	56.5	39.4	46.1	8.7			31.5	
LOS	D	E	E	E	D	D	A			C		

2025 Combined Alt. 21D

Weekday PM Peak

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		55.9			68.0			18.2			31.5	
Approach LOS		E			E			B			C	
Queue Length 50th (ft)	58	143	109	92	28	72	45				367	
Queue Length 95th (ft)	95	#184	#179	#182	64	#153	76				#410	
Internal Link Dist (ft)	514			271				152			319	
Turn Bay Length (ft)		260			100							
Base Capacity (vph)	296	693	431	224	189	253	1922				1880	
Starvation Cap Reductn	0	0	0	0	0	0	946				0	
Spillback Cap Reductn	0	26	54	0	0	0	0	0			0	
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	
Reduced v/c Ratio	0.38	1.01	0.99	0.71	0.28	0.73	0.56				0.89	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 39.7

Intersection LOS: D

Intersection Capacity Utilization 71.9%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



2025 Combined Alt. 21D
104: Main Avenue & Ramp D

Weekday PM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			↑	↑↑↑	↑↑	↑
Traffic Volume (vph)	0	0	280	615	1449	840
Future Volume (vph)	0	0	280	615	1449	840
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	11	11	10
Storage Length (ft)	0	0	150		0	
Storage Lanes	0	0	2		1	
Taper Length (ft)	25		160			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.95	1.00
Fr _t					0.850	
Flt Protected				0.950		
Satd. Flow (prot)	0	0	1652	4916	3421	1478
Flt Permitted				0.125		
Satd. Flow (perm)	0	0	217	4916	3421	1478
Right Turn on Red		Yes			Yes	
Satd. Flow (RTOR)					278	
Link Speed (mph)	30			30	30	
Link Distance (ft)	648			391	232	
Travel Time (s)	14.7			8.9	5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	304	668	1575	913
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	304	668	1575	913
Turn Type		pm+pt		NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases			2		6	
Detector Phase		5	2	6	6	
Switch Phase						
Minimum Initial (s)		5.0	5.0	5.0	5.0	
Minimum Split (s)		9.5	22.5	22.5	22.5	
Total Split (s)		21.0	90.0	69.0	69.0	
Total Split (%)		23.3%	100.0%	76.7%	76.7%	
Yellow Time (s)		3.0	3.0	3.0	3.0	
All-Red Time (s)		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	
Lead/Lag		Lead		Lag	Lag	
Lead-Lag Optimize?		Yes		Yes	Yes	
Recall Mode		None	C-Max	C-Max	C-Max	
Act Effct Green (s)		86.0	90.0	70.8	70.8	
Actuated g/C Ratio		0.96	1.00	0.79	0.79	
v/c Ratio		0.79	0.14	0.59	0.75	
Control Delay		28.1	0.1	3.7	5.2	
Queue Delay		1.9	0.0	3.0	4.9	
Total Delay		30.0	0.1	6.7	10.1	
LOS		C	A	A	B	
Approach Delay			9.4	8.0		
Approach LOS			A	A		
Queue Length 50th (ft)		91	0	89	38	

2025 Combined Alt. 21D
104: Main Avenue & Ramp D

Weekday PM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (ft)			183	0	m196	m193
Internal Link Dist (ft)	568			311	152	
Turn Bay Length (ft)			150			
Base Capacity (vph)			478	4916	2690	1221
Starvation Cap Reductn			72	0	976	241
Spillback Cap Reductn			0	98	0	0
Storage Cap Reductn			0	0	0	0
Reduced v/c Ratio			0.75	0.14	0.92	0.93

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0.5 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 8.4

Intersection LOS: A

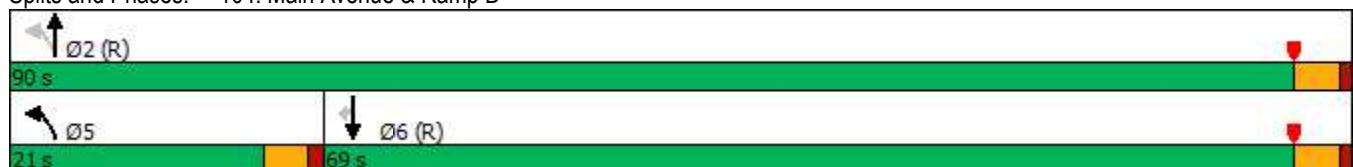
Intersection Capacity Utilization 74.2%

ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 104: Main Avenue & Ramp D



2025 Combined Alt. 21D

Weekday PM Peak

105: Main Avenue & Ramp SE/Route 15N On-Ramp

	↗	→	↘	↖	←	↙	↑	↗	↘	↓	↖	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↑					↑↑	↑	↑	↑↑	
Traffic Volume (vph)	210	0	450	0	0	0	0	685	450	430	1019	0
Future Volume (vph)	210	0	450	0	0	0	0	685	450	430	1019	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	12	12	12	11	11	10	10	11	11
Storage Length (ft)	180		180	0		0	0		0	100		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	80			25			25			90		
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Fr _t		0.850	0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3204	1454	1404	0	0	0	0	3421	1507	1652	3421	0
Flt Permitted	0.950									0.266		
Satd. Flow (perm)	3204	1454	1404	0	0	0	0	3421	1507	462	3421	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		126	126						489			
Link Speed (mph)		30		30			30			30		
Link Distance (ft)		312		528			394			391		
Travel Time (s)		7.1		12.0			9.0			8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	2%	2%	2%
Adj. Flow (vph)	228	0	489	0	0	0	0	745	489	467	1108	0
Shared Lane Traffic (%)		50%										
Lane Group Flow (vph)	228	245	244	0	0	0	0	745	489	467	1108	0
Turn Type	Perm	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2	2	6	
Detector Phase	4	4	4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5					22.5	22.5	9.5	22.5	
Total Split (s)	25.0	25.0	25.0					35.0	35.0	30.0	65.0	
Total Split (%)	27.8%	27.8%	27.8%					38.9%	38.9%	33.3%	72.2%	
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effect Green (s)	15.5	15.5	15.5					43.0	43.0	66.5	66.5	
Actuated g/C Ratio	0.17	0.17	0.17					0.48	0.48	0.74	0.74	
v/c Ratio	0.41	0.69	0.71					0.46	0.50	0.78	0.44	
Control Delay	34.3	26.6	27.6					12.0	2.4	17.6	3.7	
Queue Delay	0.0	0.1	0.1					0.3	0.6	0.0	0.1	
Total Delay	34.3	26.7	27.7					12.2	3.0	17.6	3.8	
LOS	C	C	C					B	A	B	A	
Approach Delay		29.5						8.6		7.9		
Approach LOS		C						A		A		

105: Main Avenue & Ramp SE/Route 15N On-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	59	64	64					72	5	83	55	
Queue Length 95th (ft)	87	141	142					m186	m25	113	58	
Internal Link Dist (ft)		232			448			314			311	
Turn Bay Length (ft)	180		180								100	
Base Capacity (vph)	747	435	424					1636	975	686	2528	
Starvation Cap Reductn	0	0	0					332	193	0	427	
Spillback Cap Reductn	0	6	6					0	0	0	185	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.31	0.57	0.58					0.57	0.63	0.68	0.53	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0.5 (1%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 12.5

Intersection LOS: B

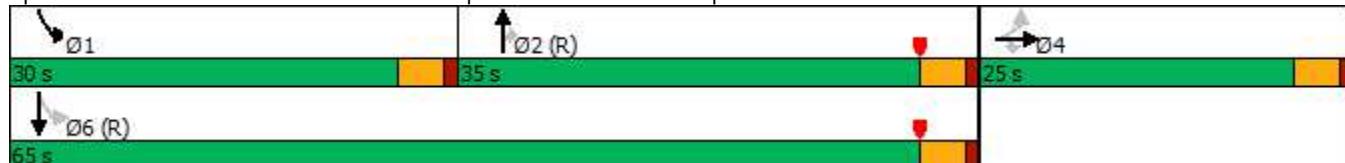
Intersection Capacity Utilization 74.2%

ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 105: Main Avenue & Ramp SE/Route 15N On-Ramp



APPENDIX H4
CAPACITY ANALYSES

2025 Combined Conditions
Weekday Afternoon Peak Hour
Alternative 26

2025 Combined Alt. 26

Weekday PM Peak

101: U.S. Route 7 & Glover Avenue & Grist Mill Road

	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑	↑↑	↑↑	↑	↑	↑↑	↑
Traffic Volume (vph)	90	10	800	409	60	140	540	1460	310	92	1070	210
Future Volume (vph)	90	10	800	409	60	140	540	1460	310	92	1070	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	215		215	600		250	150		250
Storage Lanes	2		1	2		1	2		1	1		1
Taper Length (ft)	100			200			150			175		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	3433	1863	1583	3433	3539	1583	1770	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			40			30	
Link Distance (ft)		396			877			981			1033	
Travel Time (s)		9.0			19.9			16.7			23.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	11	870	445	65	152	587	1587	337	100	1163	228
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	11	870	445	65	152	587	1587	337	100	1163	228
Turn Type	Prot	NA	Free	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases			Free			8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	9.0		5.0	9.0	5.0	5.0	15.0	5.0	5.0	15.0	5.0
Minimum Split (s)	9.0	13.5		9.0	13.5	9.0	9.0	20.5	9.0	9.0	20.5	9.0
Total Split (s)	16.0	14.6		15.0	13.6	13.0	28.0	77.4	15.0	13.0	62.4	16.0
Total Split (%)	13.3%	12.2%		12.5%	11.3%	10.8%	23.3%	64.5%	12.5%	10.8%	52.0%	13.3%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	1.0	1.5		1.0	1.5	1.0	1.0	1.5	1.0	1.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	5.5	4.0	4.0	5.5	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	14.2	9.2	120.0	23.9	10.8	23.5	24.1	68.8	98.2	10.9	55.6	75.2
Actuated g/C Ratio	0.12	0.08	1.00	0.20	0.09	0.20	0.20	0.57	0.82	0.09	0.46	0.63
v/c Ratio	0.24	0.08	0.55	0.65	0.39	0.49	0.85	0.78	0.26	0.62	0.71	0.23
Control Delay	52.8	52.6	1.4	50.6	58.9	48.0	58.8	22.9	3.6	65.5	32.2	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.8	52.6	1.4	50.6	58.9	48.0	58.8	22.9	3.6	65.5	32.2	11.5
LOS	D	D	A	D	E	D	E	C	A	E	C	B
Approach Delay				7.1		50.8			28.7		31.3	
Approach LOS				A		D		C		C		
Queue Length 50th (ft)	38	8	0	167	49	102	223	451	43	76	379	83
Queue Length 95th (ft)	64	27	0	#344	96	176	#317	534	113	#170	468	112

2025 Combined Alt. 26

Weekday PM Peak

101: U.S. Route 7 & Glover Avenue & Grist Mill Road



Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Internal Link Dist (ft)		316			797			901			953	
Turn Bay Length (ft)	250		250	215		215	600		250	150		250
Base Capacity (vph)	465	156	1583	683	168	309	712	2120	1295	160	1683	1020
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.07	0.55	0.65	0.39	0.49	0.82	0.75	0.26	0.63	0.69	0.22

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 7 (6%), Referenced to phase 2:NET and 6:SWT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 28.2

Intersection LOS: C

Intersection Capacity Utilization 75.5%

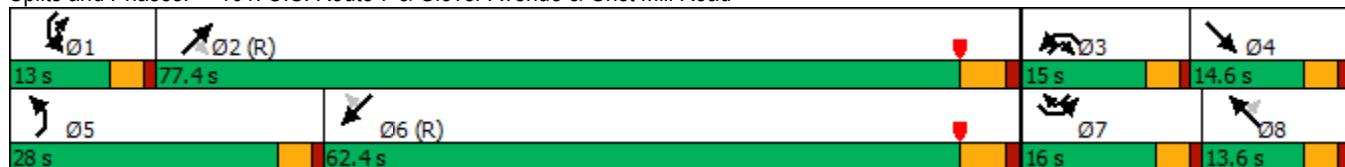
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 101: U.S. Route 7 & Glover Avenue & Grist Mill Road



2025 Combined Alt. 26

Weekday PM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway

	↑	→	↓	↗	↖	↙	↖	↗	↑	↗	↖	↓	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑	↑	↑↑		↑↑		↑↑	↑↑		↑↑	↑↑	↑↑	
Traffic Volume (vph)	1540	0	150	0	10	10	120	600	10	10	240	1242	
Future Volume (vph)	1540	0	150	0	10	10	120	600	10	10	240	1242	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	370		0	0		0	200		0	100		225	
Storage Lanes	1		1	0		0	2		0	1		2	
Taper Length (ft)	300			25		300			25				
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95	0.97	0.95	0.95	1.00	0.95	0.88	
Frt			0.850		0.925			0.998				0.850	
Flt Protected	0.950					0.950			0.950				
Satd. Flow (prot)	3433	1863	1583	0	3274	0	3433	3532	0	1770	3539	2787	
Flt Permitted	0.950					0.950			0.950			0.327	
Satd. Flow (perm)	3433	1863	1583	0	3274	0	3433	3532	0	609	3539	2787	
Right Turn on Red		Yes				Yes			Yes			Yes	
Satd. Flow (RTOR)		109			11				1			719	
Link Speed (mph)		30			30			35				35	
Link Distance (ft)		1033			351			1293				1421	
Travel Time (s)		23.5			8.0			25.2				27.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1674	0	163	0	11	11	130	652	11	11	261	1350	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	1674	0	163	0	22	0	130	663	0	11	261	1350	
Turn Type	Prot		pm+ov		NA		Prot	NA		Perm	NA	pm+ov	
Protected Phases	7	4	1		8		1	6			2	7	
Permitted Phases			4	8						2		2	
Detector Phase	7	4	1	8	8		1	6		2	2	7	
Switch Phase													
Minimum Initial (s)	9.0	9.0	5.0	7.0	7.0		5.0	9.0		15.0	15.0	9.0	
Minimum Split (s)	15.0	15.0	8.0	12.0	12.0		8.0	21.0		21.0	21.0	15.0	
Total Split (s)	72.0	84.0	12.0	12.0	12.0		12.0	36.0		24.0	24.0	72.0	
Total Split (%)	60.0%	70.0%	10.0%	10.0%	10.0%		10.0%	30.0%		20.0%	20.0%	60.0%	
Yellow Time (s)	4.0	4.0	3.0	3.0	3.0		3.0	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0		0.0	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	3.0		5.0		3.0	6.0		6.0	6.0	6.0	
Lead/Lag	Lead		Lead	Lag	Lag		Lead			Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes		Yes			Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Min		C-Min	C-Min	None	
Act Effct Green (s)	67.1		88.9		7.0		8.6	33.7		22.1	22.1	95.2	
Actuated g/C Ratio	0.56		0.74		0.06		0.07	0.28		0.18	0.18	0.79	
v/c Ratio	0.87		0.14		0.11		0.53	0.67		0.10	0.40	0.57	
Control Delay	44.9		4.0		36.2		61.9	43.5		48.0	47.2	3.2	
Queue Delay	0.0		0.0		0.0		0.0	0.0		0.0	0.0	0.0	
Total Delay	44.9		4.0		36.2		61.9	43.5		48.0	47.2	3.2	
LOS	D		A		D		E	D		D	D	A	
Approach Delay		41.3			36.2			46.5			10.6		
Approach LOS		D			D			D			B		
Queue Length 50th (ft)	685		17		4		51	258		8	102	83	
Queue Length 95th (ft)	767		m44		18		84	320		26	143	127	

2025 Combined Alt. 26

Weekday PM Peak

102: Main Avenue & Grist Mill Road/CT DMV Driveway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		953			271			1213			1341	
Turn Bay Length (ft)	370						200			100		225
Base Capacity (vph)	1936		1206		201		257	1024		117	683	2369
Starvation Cap Reductn	0		0		0		0	0		0	0	0
Spillback Cap Reductn	0		0		0		0	0		0	0	0
Storage Cap Reductn	0		0		0		0	0		0	0	0
Reduced v/c Ratio	0.86		0.14		0.11		0.51	0.65		0.09	0.38	0.57

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 30.6

Intersection LOS: C

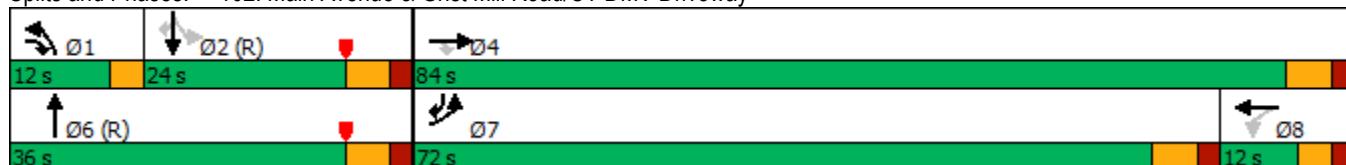
Intersection Capacity Utilization 95.0%

ICU Level of Service F

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Main Avenue & Grist Mill Road/CT DMV Driveway



2025 Combined Alt. 26

Weekday PM Peak

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive

	↗	→	↘	↙	←	↖	↑	↗	↘	↓	↙	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	70	539	330	116	70	155	330	130	60	1420	60
Future Volume (vph)	20	70	539	330	116	70	155	330	130	60	1420	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	10	10	11	10	10	11	11	11	11	11
Storage Length (ft)	0		260	0		100	0		0	70		0
Storage Lanes	0		2	2		1	1		0	1		0
Taper Length (ft)	25			50			25			20		
Lane Util. Factor	1.00	1.00	0.88	0.97	0.95	0.95	1.00	0.95	0.95	0.91	0.91	0.91
Ped Bike Factor							1.00				1.00	
Fr _t			0.850		0.974	0.850		0.958			0.994	
Flt Protected		0.989		0.950			0.950				0.998	
Satd. Flow (prot)	0	1781	2601	3236	1683	1418	1668	3310	0	0	4871	0
Flt Permitted		0.989		0.950			0.117				0.887	
Satd. Flow (perm)	0	1781	2601	3236	1683	1418	205	3310	0	0	4329	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)							108				8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		594			351			232			399	
Travel Time (s)		13.5			8.0			5.3			9.1	
Confl. Peds. (#/hr)							10				10	
Peak Hour Factor	0.80	0.80	0.80	0.88	0.88	0.88	0.84	0.84	0.84	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	25	88	674	375	132	80	185	393	155	65	1543	65
Shared Lane Traffic (%)					35%							
Lane Group Flow (vph)	0	113	674	375	160	52	185	548	0	0	1673	0
Turn Type	Split	NA	pt+ov	Split	NA	Perm	pm+pt	NA		Perm	NA	
Protected Phases	3	3	3 1	4	4		1	1 2			2	
Permitted Phases						4	1 2				2	
Detector Phase	3	3	3 1	4	4	4	1	1 2		2	2	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	4.0			17.0	17.0	
Minimum Split (s)	12.0	12.0		12.0	12.0	12.0	7.1			25.0	25.0	
Total Split (s)	19.0	19.0		16.0	16.0	16.0	13.0			42.0	42.0	
Total Split (%)	21.1%	21.1%		17.8%	17.8%	17.8%	14.4%			46.7%	46.7%	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0			3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	0.1			4.0	4.0	
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	0.9				-4.0		
Total Lost Time (s)		4.0		4.0	4.0	4.0	4.0				3.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Recall Mode	None	None		None	None	None	Max			C-Min	C-Min	
Act Effct Green (s)	15.0	24.0		12.0	12.0	12.0	47.0	51.0			39.0	
Actuated g/C Ratio	0.17	0.27		0.13	0.13	0.13	0.52	0.57			0.43	
v/c Ratio	0.38	0.97		0.87	0.71	0.28	0.73	0.29			0.89	
Control Delay	37.7	50.6		60.1	56.5	39.4	48.0	8.0			31.5	
Queue Delay		0.0		8.4	16.7	0.0	0.0	0.6			0.0	
Total Delay	37.7	59.0		76.8	56.5	39.4	48.0	8.6			31.5	
LOS	D	E	E	E	D	D	A			C		

2025 Combined Alt. 26

Weekday PM Peak

103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		55.9			68.0			18.5			31.5	
Approach LOS		E			E			B			C	
Queue Length 50th (ft)	58	143	109	92	28	84	43				367	
Queue Length 95th (ft)	95	#184	#179	#182	64	#153	75				#410	
Internal Link Dist (ft)	514			271				152			319	
Turn Bay Length (ft)		260			100							
Base Capacity (vph)	296	693	431	224	189	253	1922				1880	
Starvation Cap Reductn	0	0	0	0	0	0	946				0	
Spillback Cap Reductn	0	26	54	0	0	0	0	0			0	
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	
Reduced v/c Ratio	0.38	1.01	0.99	0.71	0.28	0.73	0.56				0.89	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 39.7

Intersection LOS: D

Intersection Capacity Utilization 71.9%

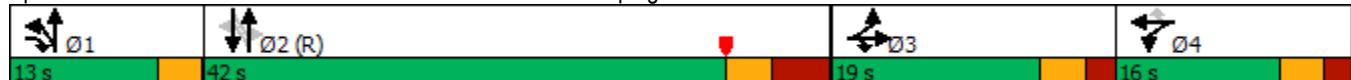
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 103: Main Avenue & Glover Avenue/Creeping Hemlock Drive



2025 Combined Alt. 26
104: Main Avenue & Ramp D

Weekday PM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations			↑	↑↑↑	↑↑	↑
Traffic Volume (vph)	0	0	280	615	1449	840
Future Volume (vph)	0	0	280	615	1449	840
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	10	11	11	10
Storage Length (ft)	0	0	150			0
Storage Lanes	0	0	2			1
Taper Length (ft)	25		160			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.95	1.00
Fr _t						0.850
Flt Protected				0.950		
Satd. Flow (prot)	0	0	1652	4916	3421	1478
Flt Permitted				0.125		
Satd. Flow (perm)	0	0	217	4916	3421	1478
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						278
Link Speed (mph)	30			30	30	
Link Distance (ft)	596			391	232	
Travel Time (s)	13.5			8.9	5.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	304	668	1575	913
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	304	668	1575	913
Turn Type		pm+pt		NA	NA	Perm
Protected Phases			5	2	6	
Permitted Phases			2			6
Detector Phase		5	2	6	6	
Switch Phase						
Minimum Initial (s)		5.0	5.0	5.0	5.0	
Minimum Split (s)		9.5	22.5	22.5	22.5	
Total Split (s)		21.0	90.0	69.0	69.0	
Total Split (%)		23.3%	100.0%	76.7%	76.7%	
Yellow Time (s)		3.0	3.0	3.0	3.0	
All-Red Time (s)		1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0	
Lead/Lag		Lead		Lag	Lag	
Lead-Lag Optimize?		Yes		Yes	Yes	
Recall Mode		None	C-Max	C-Max	C-Max	
Act Effct Green (s)		86.0	90.0	70.8	70.8	
Actuated g/C Ratio		0.96	1.00	0.79	0.79	
v/c Ratio		0.79	0.14	0.59	0.75	
Control Delay		27.4	0.1	3.7	5.2	
Queue Delay		1.9	0.0	3.0	4.9	
Total Delay		29.3	0.1	6.7	10.1	
LOS		C	A	A	B	
Approach Delay			9.2	8.0		
Approach LOS			A	A		
Queue Length 50th (ft)		109	0	89	38	

2025 Combined Alt. 26
104: Main Avenue & Ramp D

Weekday PM Peak



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 95th (ft)			183	0	m196	m193
Internal Link Dist (ft)	516			311	152	
Turn Bay Length (ft)			150			
Base Capacity (vph)			478	4916	2690	1221
Starvation Cap Reductn			73	0	976	241
Spillback Cap Reductn			0	83	18	0
Storage Cap Reductn			0	0	0	0
Reduced v/c Ratio			0.75	0.14	0.92	0.93

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0.5 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 8.3

Intersection LOS: A

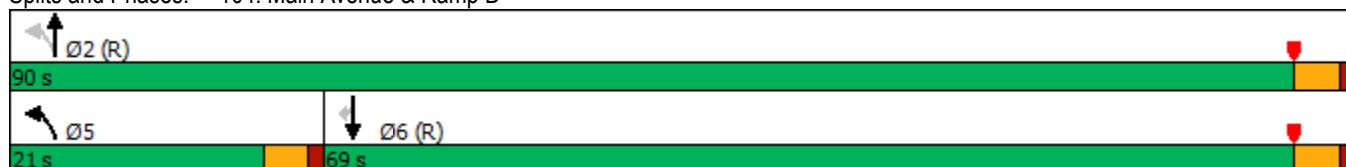
Intersection Capacity Utilization 81.9%

ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 104: Main Avenue & Ramp D



2025 Combined Alt. 26

Weekday PM Peak

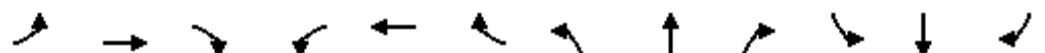
105: Main Avenue & Ramp SE/Route 15N On-Ramp

	↑	→	↓	↗	↖	↙	↖	↗	↑	↗	↖	↓	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑	↑	↑					↑↑	↑	↑	↑	↑↑	
Traffic Volume (vph)	210	210	450	0	0	0	0	685	450	430	1019	0	
Future Volume (vph)	210	210	450	0	0	0	0	685	450	430	1019	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	10	12	12	12	11	11	10	10	11	11	
Storage Length (ft)	180		0	0		0	0		0	100		0	
Storage Lanes	1		1	0		0	0		1	1		0	
Taper Length (ft)	80			25			25			90			
Lane Util. Factor	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Fr _t		0.941	0.850						0.850				
Flt Protected	0.950									0.950			
Satd. Flow (prot)	3204	1610	1404	0	0	0	0	3421	1507	1652	3421	0	
Flt Permitted	0.950									0.223			
Satd. Flow (perm)	3204	1610	1404	0	0	0	0	3421	1507	388	3421	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		36	108						283				
Link Speed (mph)		30		30			30			30			
Link Distance (ft)		312		528			394			391			
Travel Time (s)		7.1		12.0			9.0			8.9			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	0%	2%	2%	2%	
Adj. Flow (vph)	228	228	489	0	0	0	0	745	489	467	1108	0	
Shared Lane Traffic (%)		30%											
Lane Group Flow (vph)	228	375	342	0	0	0	0	745	489	467	1108	0	
Turn Type	Perm	NA	Perm					NA	Perm	pm+pt	NA		
Protected Phases		4						2		1	6		
Permitted Phases	4		4						2	2	6		
Detector Phase	4	4	4					2	2	1	6		
Switch Phase													
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0		
Minimum Split (s)	22.5	22.5	22.5					22.5	22.5	9.5	22.5		
Total Split (s)	29.0	29.0	29.0					35.0	35.0	26.0	61.0		
Total Split (%)	32.2%	32.2%	32.2%					38.9%	38.9%	28.9%	67.8%		
Yellow Time (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0		
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0		
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0		
Lead/Lag								Lag	Lag	Lead			
Lead-Lag Optimize?								Yes	Yes	Yes			
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max		
Act Effect Green (s)	23.3	23.3	23.3					34.9	34.9	58.7	58.7		
Actuated g/C Ratio	0.26	0.26	0.26					0.39	0.39	0.65	0.65		
v/c Ratio	0.28	0.85	0.77					0.56	0.65	0.88	0.50		
Control Delay	26.6	46.6	33.1					16.4	7.3	32.2	6.3		
Queue Delay	0.0	0.0	0.1					0.3	0.6	0.0	0.2		
Total Delay	26.6	46.6	33.1					16.7	7.9	32.2	6.5		
LOS	C	D	C					B	A	C	A		
Approach Delay		36.9						13.2			14.1		
Approach LOS		D						B			B		

2025 Combined Alt. 26

Weekday PM Peak

105: Main Avenue & Ramp SE/Route 15N On-Ramp



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	54	195	134					167	67	176	144	
Queue Length 95th (ft)	m81	m#315	m227					m186	m44	#307	58	
Internal Link Dist (ft)		232			448			314			311	
Turn Bay Length (ft)	180									100		
Base Capacity (vph)	890	473	468					1325	757	562	2231	
Starvation Cap Reductn	0	0	0					162	70	0	347	
Spillback Cap Reductn	0	0	2					0	0	0	92	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.26	0.79	0.73					0.64	0.71	0.83	0.59	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0.5 (1%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 19.6

Intersection LOS: B

Intersection Capacity Utilization 81.9%

ICU Level of Service D

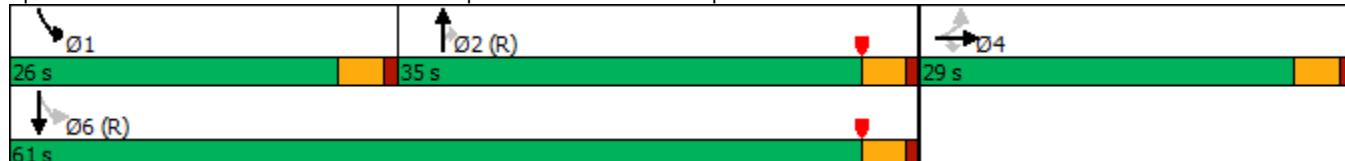
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 105: Main Avenue & Ramp SE/Route 15N On-Ramp



2025 Combined Alt. 26
106: U.S. Route 7 & Ramp D

Weekday PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑	↑↑			↑↑↑	↑		↑↑↑	↑
Traffic Volume (vph)	0	0	0	350	960	50	0	2260	830	0	1659	620
Future Volume (vph)	0	0	0	350	960	50	0	2260	830	0	1659	620
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		700	0		400
Storage Lanes	0		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.91	1.00	1.00	0.91	1.00
Frt					0.993				0.850			0.850
Flt Protected					0.950							
Satd. Flow (prot)	0	0	0	1770	3514	0	0	5085	1583	0	5085	1583
Flt Permitted					0.950							
Satd. Flow (perm)	0	0	0	1770	3514	0	0	5085	1583	0	5085	1583
Right Turn on Red				Yes		Yes			Yes			Yes
Satd. Flow (RTOR)					1				902			48
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			274			973			1102	
Travel Time (s)		4.0			6.2			22.1			25.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	380	1043	54	0	2457	902	0	1803	674
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	380	1097	0	0	2457	902	0	1803	674
Turn Type				Perm	NA			NA	Perm		NA	Perm
Protected Phases					8			2			6	
Permitted Phases					8				2			6
Detector Phase				8	8			2	2		6	6
Switch Phase												
Minimum Initial (s)				5.0	5.0			5.0	5.0		5.0	5.0
Minimum Split (s)				25.0	25.0			25.0	25.0		25.0	25.0
Total Split (s)				38.0	38.0			52.0	52.0		52.0	52.0
Total Split (%)				42.2%	42.2%			57.8%	57.8%		57.8%	57.8%
Yellow Time (s)				4.0	4.0			4.0	4.0		4.0	4.0
All-Red Time (s)				3.0	3.0			3.0	3.0		3.0	3.0
Lost Time Adjust (s)				0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)				7.0	7.0			7.0	7.0		7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode				None	None			C-Min	C-Min		C-Min	C-Min
Act Effct Green (s)				31.0	31.0			45.0	45.0		45.0	45.0
Actuated g/C Ratio				0.34	0.34			0.50	0.50		0.50	0.50
v/c Ratio				0.62	0.91			0.97	0.73		0.71	0.83
Control Delay				27.6	36.3			25.4	6.0		19.4	28.4
Queue Delay				0.0	0.0			0.0	0.0		0.0	0.0
Total Delay				27.6	36.3			25.4	6.0		19.4	28.4
LOS				C	D			C	A		B	C
Approach Delay					34.1			20.2			21.8	
Approach LOS					C			C			C	
Queue Length 50th (ft)				158	285			330	87		277	292
Queue Length 95th (ft)				m262	#435			m315	m77		332	#515

2025 Combined Alt. 26
106: U.S. Route 7 & Ramp D

Weekday PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)	96			194			893			1022		
Turn Bay Length (ft)								700			400	
Base Capacity (vph)		609		1211			2542	1242		2542	815	
Starvation Cap Reductn			0	0			0	0		0	0	
Spillback Cap Reductn			0	0			0	0		0	0	
Storage Cap Reductn			0	0			0	0		0	0	
Reduced v/c Ratio		0.62		0.91			0.97	0.73		0.71	0.83	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 23.6

Intersection LOS: C

Intersection Capacity Utilization 83.5%

ICU Level of Service E

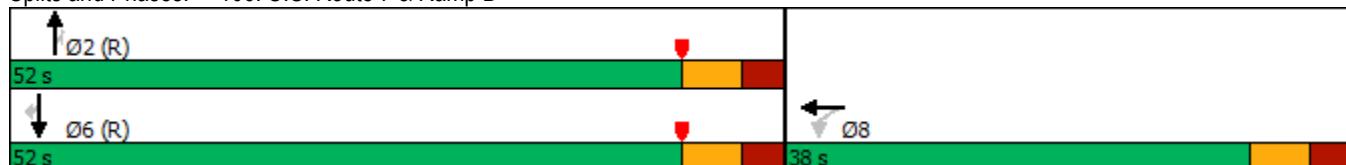
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 106: U.S. Route 7 & Ramp D



2025 Combined Alt. 26

Weekday PM Peak

107: U.S. Route 7 & Route 15N Off-Ramp/Ramp SE

	→	→	→	←	←	↑	↑	↓	↓	←	→	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑					↑↑↑	↑	↑	↑↑↑	
Traffic Volume (vph)	577	0	810	0	0	0	0	2513	280	110	1899	0
Future Volume (vph)	577	0	810	0	0	0	0	2513	280	110	1899	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		390	0		0	0		925	200		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			230		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt			0.850					0.850				
Flt Protected	0.950	0.950								0.950		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	5085	1583	1770	5085	0
Flt Permitted	0.950	0.950								0.950		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	5085	1583	1770	5085	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			295						304			
Link Speed (mph)	30			30			30			30		
Link Distance (ft)	1062			573			1341			973		
Travel Time (s)	24.1			13.0			30.5			22.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	627	0	880	0	0	0	0	2732	304	120	2064	0
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	313	314	880	0	0	0	0	2732	304	120	2064	0
Turn Type	Perm	NA	Free					NA	Perm	Prot	NA	
Protected Phases		4						2		1	6	
Permitted Phases	4		Free						2			
Detector Phase	4	4						2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	5.0	5.0	5.0		
Minimum Split (s)	25.0	25.0					25.0	25.0	12.0	25.0		
Total Split (s)	25.0	25.0					52.0	52.0	13.0	65.0		
Total Split (%)	27.8%	27.8%					57.8%	57.8%	14.4%	72.2%		
Yellow Time (s)	4.0	4.0					4.0	4.0	4.0	4.0		
All-Red Time (s)	3.0	3.0					3.0	3.0	3.0	3.0		
Lost Time Adjust (s)	0.0	0.0					0.0	0.0	0.0	0.0		
Total Lost Time (s)	7.0	7.0					7.0	7.0	7.0	7.0		
Lead/Lag							Lag	Lag	Lead			
Lead-Lag Optimize?							Yes	Yes	Yes			
Recall Mode	None	None					C-Max	C-Max	None	C-Max		
Act Effct Green (s)	18.0	18.0	90.0				45.0	45.0	6.0	58.0		
Actuated g/C Ratio	0.20	0.20	1.00				0.50	0.50	0.07	0.64		
v/c Ratio	0.93	0.93	0.56				1.07	0.32	1.02	0.63		
Control Delay	72.1	72.7	1.4				65.5	2.5	117.9	8.6		
Queue Delay	0.0	0.0	0.0				0.0	0.0	0.0	0.0		
Total Delay	72.1	72.7	1.4				65.5	2.5	117.9	8.6		
LOS	E	E	A				E	A	F	A		
Approach Delay		31.0					59.2			14.6		
Approach LOS		C					E			B		
Queue Length 50th (ft)	185	186	0				~639	0	~72	144		
Queue Length 95th (ft)	#350	#352	0				#734	39	m#141	216		

2025 Combined Alt. 26

Weekday PM Peak

107: U.S. Route 7 & Route 15N Off-Ramp/Ramp SE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		982			493			1261				893
Turn Bay Length (ft)			390						925	200		
Base Capacity (vph)	336	336	1583					2542	943	118	3278	
Starvation Cap Reductn	0	0	0					0	0	0	0	
Spillback Cap Reductn	0	0	0					0	0	0	0	
Storage Cap Reductn	0	0	0					0	0	0	0	
Reduced v/c Ratio	0.93	0.93	0.56					1.07	0.32	1.02	0.63	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 38.4

Intersection LOS: D

Intersection Capacity Utilization 88.1%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

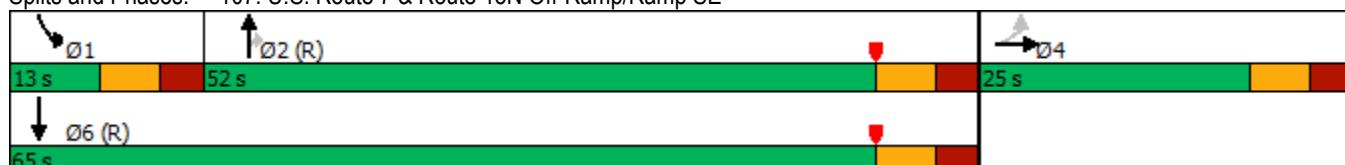
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 107: U.S. Route 7 & Route 15N Off-Ramp/Ramp SE



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