

CAPITOL REGION COUNCIL OF GOVERNMENTS

FINAL REPORT

SILVER LANE (SR 502) CORRIDOR STUDY EAST HARTFORD, CT

February 19, 2020



EXPERIENCE | Transportation



Silver Lane Corridor Study

Final Report

February 19, 2020

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EXECUTIVE SUMMARY

The Capitol Region Council of Governments (CRCOG) and the Town of East Hartford, in cooperation with the Connecticut Department of Transportation (CTDOT), initiated the Silver Lane Corridor Study to evaluate traffic and development issues along Silver Lane in the Town of East Hartford. The purpose of the Study is to develop a comprehensive transportation plan for Silver Lane that will: (1) address safety, congestion, and mobility of the transit system, pedestrians, and bicyclists; and (2) assess travel demand growth and its impacts on area roadways including traffic associated with development within the Study Area. This report summarizes the findings from the existing conditions, future conditions and recommendations phases of the study.

The Study Area includes the corridor along Silver Lane (State Route 502) in East Hartford from the intersection of the Route 15 entrance ramp easterly to the intersection of Forbes Street, a distance of approximately two miles, as shown below. The study team also assessed intersecting side street approaches and access for adjacent land uses. Silver Lane is intersected by highway ramps, residential streets, and contains a 40,000-seat sports venue, and many businesses. There are also many local destinations on or adjacent to Silver Lane, such as schools, restaurants, retail, and grocery stores. Silver Lane is served by frequent bus service and there are multi-use paths for bicyclists and pedestrians adjacent to the Study Area.



Silver Lane Corridor Study Project Limits

The Silver Lane Corridor Study was completed using a collaborative process with stakeholder and community involvement, an advisory committee, and technical reviews. The study included close collaboration with the other ongoing studies in the Silver Lane area, including the Brownfields Area-Wide Revitalization (BAR) Planning Grant Project, the flood control study of Willow Brook, and future development plans at sites along Silver Lane. Additional information about these initiatives can be found via the Town of East Hartford's website: <https://www.easthartfordct.gov/>.

Existing Conditions Assessment

In the summer of 2019, prior to the completion of this report, Silver Lane was reconstructed as part of CTDOT's Vendor-in-Place (VIP) pavement rehabilitation program. With the support of CTDOT and the Town of East Hartford and the study team, several of the near-term recommendations discussed later in this report were implemented. Based upon the timing of the work, this report has been written to describe the existing conditions of Silver Lane prior to the VIP project.

Within the study area, Silver Lane generally consists of three travel lanes (one westbound / two eastbound) west of Roberts Street and four lanes (two in each direction) east of Roberts Street. Several deficiencies in lane width and shoulder width were identified based off CTDOT's geometric design standards for a roadway of Silver Lane's classification (minor arterial). Notably, the intersection sight distance from Gold Street, for both left and right turns, is deficient. A residential building and a large tree restrict the sight distance. The lane width deficiencies were addressed by the VIP pavement rehabilitation project in the summer of 2019.

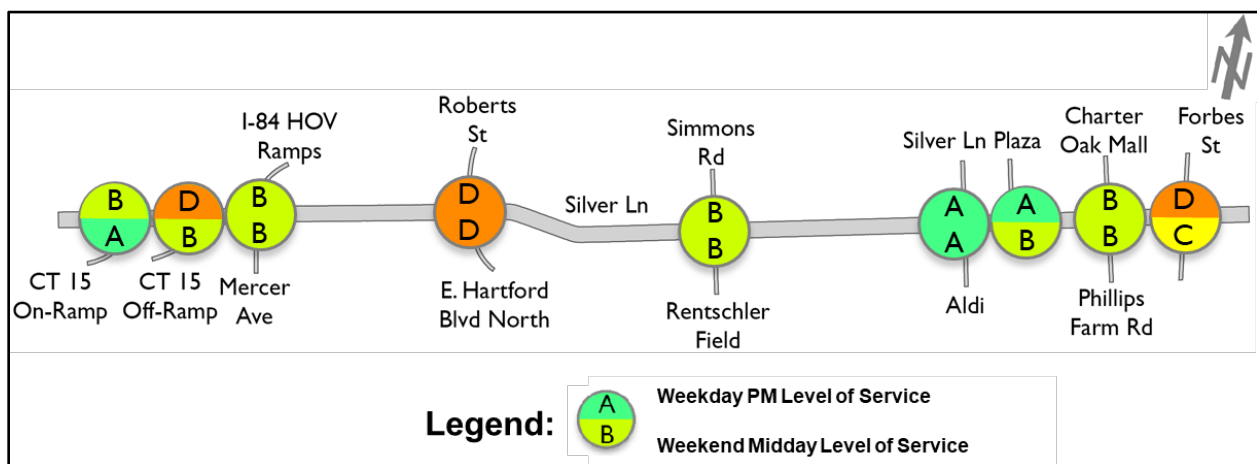


Limited Intersection Sight Distance at Gold Street

Average daily traffic volumes have fluctuated since 2003. Throughout the corridor, volumes are generally less than their historical high in 2006. Stakeholders and members of the public noted that travel speeds during off-peak periods are often well in excess of the posted speed limit, particularly east of Roberts Street. This was confirmed with field research and test travel runs through the corridor.

Intersection capacity analyses were developed for the PM weekday and weekend midday peak periods using Synchro traffic analysis software, turning movement volumes, and the traffic signal timing plans obtained as part of this existing conditions analysis, with the following results:

- Overall, all signalized intersections in the Study Area operate at a Level of Service (LOS) D or better during the peak periods, representing an acceptable degree of congestion.
- A summary of the LOS results is presented for the overall intersections below.



Level of Service (LOS) for Study Intersections on Silver Lane

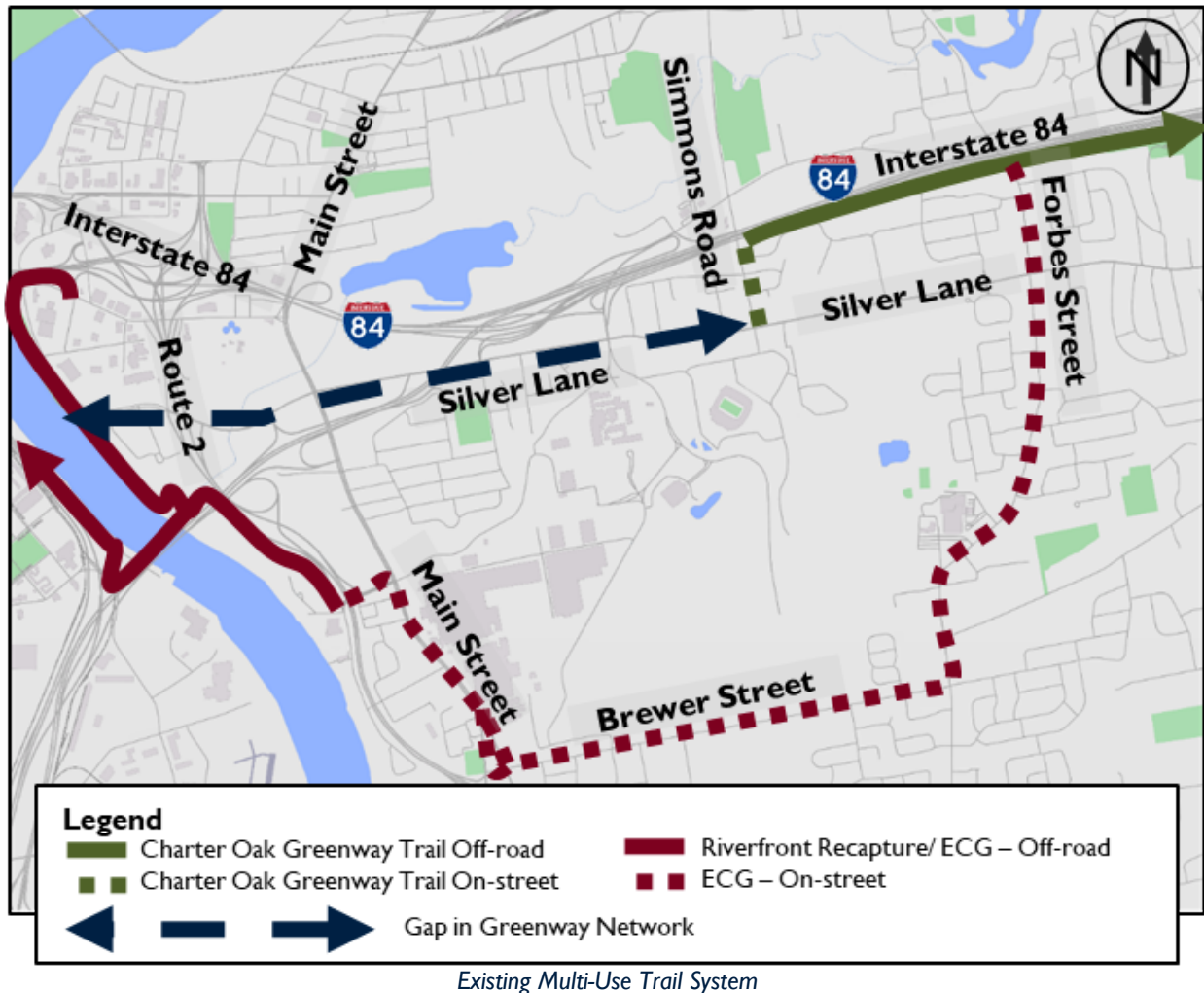
Crash data for Silver Lane was obtained for the three-year period from January 1, 2012 to December 31, 2014. A total of 206 crashes were recorded in the corridor. One crash resulted in a fatality and approximately 30% crashes resulted in an injury. The overall crash trends for the corridor included:

- Nearly one-third of crashes were rear-ends, a common collision type attributed to vehicles following too closely
- Approximately 30 % of crashes involved turning movements, attributed to failure to grant right-of-way and improper turning or passing maneuvers
- Approximately 20% of crashes involved sideswipes, attributed to improper passing maneuvers or improper lane change

There is a sidewalk on the north side of Silver Lane throughout the Study Area. There is sidewalk for much of the south side, although there is a gap from Gold Street to Phillips Farm residential community (except for a short section of sidewalk along the frontage of the Aldi grocery store). Along the corridor, the sidewalk widths vary from three feet to eight feet. At several locations, crosswalks are not provided to connect the sidewalk network across unsignalized side road intersections.

There are no bicycle facilities, such as bicycle lanes, bicycle racks, or bicycle signal detectors, on Silver Lane. Shoulders are generally too narrow to provide bicyclists with a safe riding path, and there is no signing or striping to mark shared roadway facilities. The Charter Oak Greenway Trail lies northeast of the study area. There is a gap within the East Coast Greenway off-road trail network between the terminus of the Charter Oak Trail and the Riverfront Recapture trail system as illustrated on the following page.

In the greater Hartford area, CTtransit operates local bus routes, express routes and CTfastrak, Connecticut's bus rapid transit system. Within the Study Area, operating on Silver Lane between Main Street and Forbes Street are CTtransit Route 83 and CTfastrak Route 121. There are several CTtransit routes adjacent to Silver Lane: Route 91, which travels along Brewer Street and Forbes Street, Route 87 on Main Street, and Route 95 on Main Street. The majority of the stop locations on Silver Lane do not have bus shelters and some locations do not offer sidewalk connections to adjacent land uses that are compliant with the Americans with Disabilities Act (ADA).



Existing Multi-Use Trail System

Future Conditions Assessment

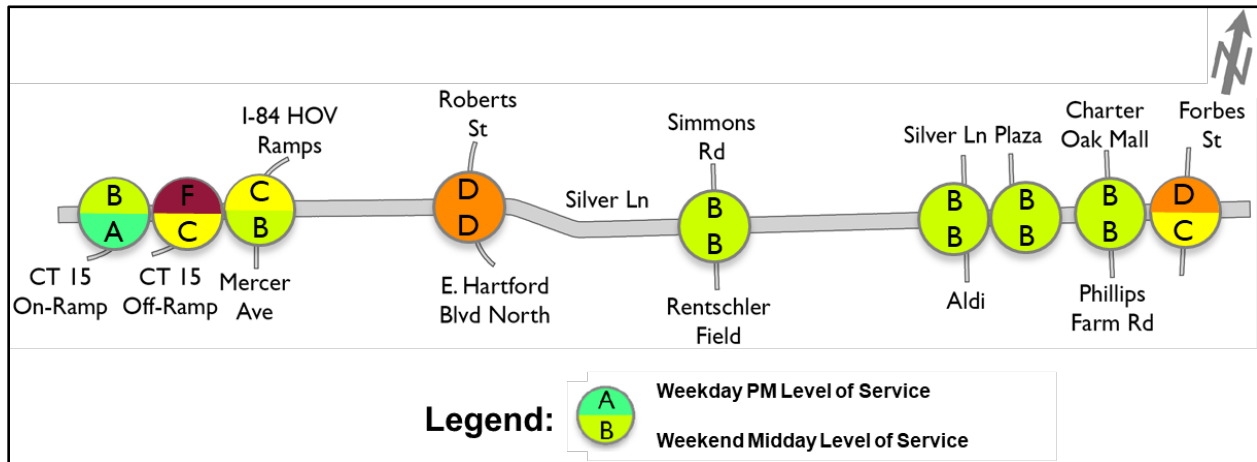
Future economic development within the study corridor was assessed under two scenarios, base and build, as defined below:

Base: Considers ambient growth in traffic from development in and around the study corridor that will occur independently of actions taken as a result of this study. Two base scenarios were tested with the more conservative scenario used in analysis.

Build: Considers additional development concepts identified by the study team as part of the vision for the corridor.

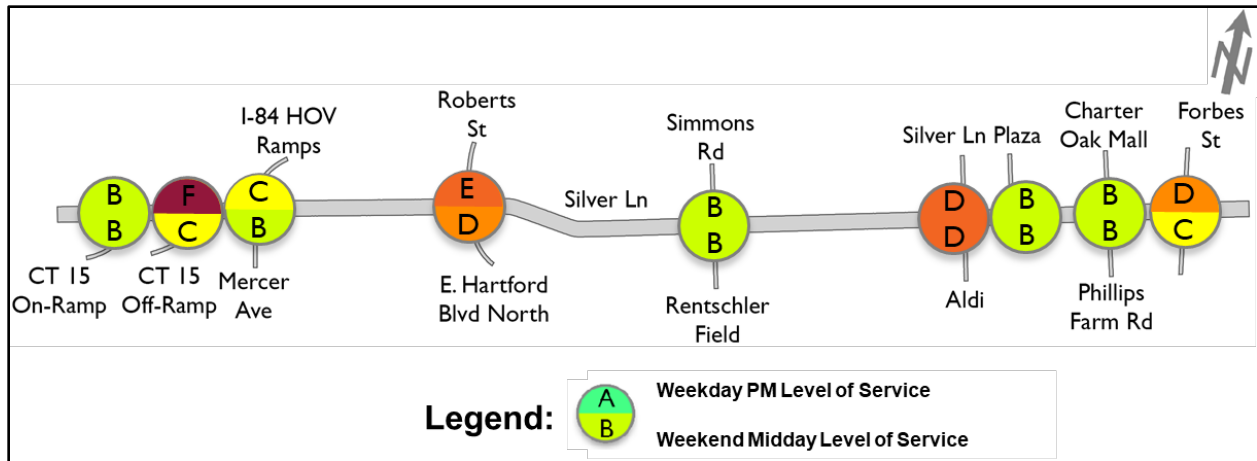
In order to compile expected developments for the base scenario, the study team worked closely with the Silver Lane Advisory Committee and local stakeholders to identify developments planned in and around the study corridor. The study team collaborated with the BAR Grant consultant and the Silver Lane Advisory Committee to identify potential developments as part of the Build Scenario. The Capitol Region Council of Governments (CRCOG) developed the future (2040) traffic forecasts for the Silver Lane study area using their CRCOG-maintained travel demand model. The travel demand model is a complex planning tool used to understand travel behavior and trips. Peak hour traffic volumes are

expected to grow between 18% and 31% by 2040 for the Base scenario. Throughout most of the corridor, there is a steady growth rate of about 20%, which amounts to an additional 250 to 350 vehicles per hour. The additional development in the Build scenario increases the traffic growth rates. Growth is especially high in the eastern end of the corridor where most of the potential development takes place. West of Roberts Street, volumes only increase by about 25%, which amounts to about 300 to 450 vehicles per hour. The intersections with the largest increases in traffic, Silver Lane Plaza and Charter Oak Mall, are access points for the envisioned developments. The results of the traffic operational analysis for the Base and Build scenarios are illustrated below.



Base Future (2040) Traffic Operations

Under the Base scenario, traffic can be expected to flow acceptably through most of the intersections in the Study Area despite the moderate growth in traffic volumes. Route 15 exiting traffic, which is controlled by a stop sign, will experience a LOS F and a 468 foot long queue during the weekday PM peak hour because traffic volumes will be high enough that vehicles exiting the freeway will have difficulty finding gaps in the free-flowing Silver Lane traffic. Preventing these queues from backing up to the freeway is an important safety consideration. Although LOS will be acceptable, the queue length for eastbound Silver Lane at Mercer Street will exceed the available distance, and block the Route 15 off ramp during both peak hours. LOS E or F will be experienced on several lane groups at Roberts Street, and queues will exceed storage capacity in several directions. At Forbes Street, the northbound and southbound approaches will experience LOS E during the weekday PM peak, although queuing will not be excessive.



Build Future (2040) Traffic Operations

Under the Build scenario, the Route 15 Off-Ramp continues to operate at LOS F, with queues approaching 600 feet in length and delays of approximately 3.5 minutes during the weekday PM peak hour. Eastbound queues at Mercer Street will block the Route 15 off ramp, and will extend to the Route 15 entrance ramp during the weekday PM peak hour. Roberts Street will operate at an overall intersection LOS E, with most lane groups at LOS E or F during both peak hours, and many lanes exceeding their storage capacity. Although the dual signals at Silver Lane Plaza will operate reasonably well on Silver Lane, northbound and southbound driveway traffic from Aldi and from the Plaza will experience 3 to 4 minute delays (LOS F) during both peak hours.

The study team also assessed the potential changes in transit demand and service. In order to achieve higher average speeds and reliability, the CTfastrak East Expansion Final Report recommends consolidating stops on Route 121 through the corridor. This would withdraw CTfastrak service from the stops at Clement Road and Forbes Street. These stops would still be served by CTtransit Route 83.

Analysis of Alternatives and Recommendations

Alternatives were developed to address the deficiencies noted in the existing conditions and future conditions assessments. The study team engaged in a collaborative and interactive process with Town of East Hartford officials, community stakeholders and the Capitol Region Council of Governments (CRCOG) to define and select alternatives as part of a comprehensive plan for the corridor. This comprehensive plan provides for improved mobility, accessibility and safety for all users. The recommendations are intended to support the findings of the Silver Lane Revitalization Plan and benefit the overall quality-of-life in East Hartford.

Corridor-wide Recommendations

Several recommendations, particularly those affecting pedestrian, bicyclist and transit mobility, were evaluated within the context of the entire project corridor to ensure consistency throughout the corridor. The primary corridor-wide recommendations are to:

- Reconfigure Silver Lane, utilizing a road diet to more equitably allocate space on the roadway for all users
- Provide 10' sidepaths on both sides of Silver Lane to enhance bicyclist and pedestrian mobility and connect the gap in the East Coast Greenway
- Consolidate and improve transit stop amenities along Silver Lane

- Relocate overhead utilities

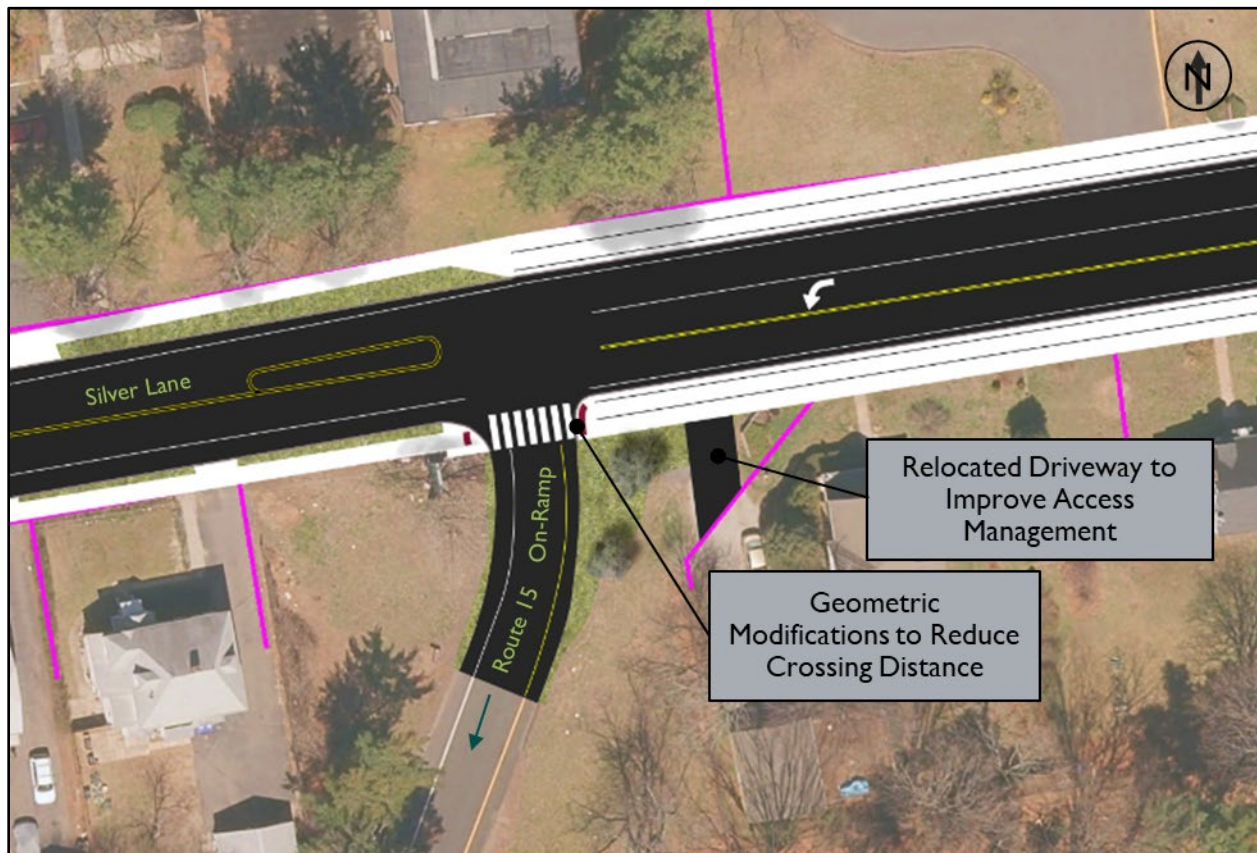
The segment east of Roberts Street will be able to have wider shoulders (5') due to the greater setbacks of existing development and available right-of-way.

Location-based Improvements

In addition to the corridor-wide improvements, many location-based improvements were recommended. Several are described below. Additional improvements are included in Section 4.2 of the body of the report.

Route 15 On-Ramp

The Route 15 On-Ramp operates well under existing conditions, and will do so through the 2040 Build condition. Westbound queues on Silver Lane are less than 100 feet during the peak hours. Minor geometric modifications are recommended at this location to shorten the crossing distance for pedestrians from approximately 85 feet to 45 feet, and to make the intersection less skewed, which will control the speed of left turning traffic. Reducing the radius on the southeast corner will also allow the residential driveway on the corner to be pulled back from the intersection, which will improve the access to the property and reduce the potential turning conflict. Final design efforts would ensure that the curb radii allow the appropriate design vehicles to turn on to the ramp.

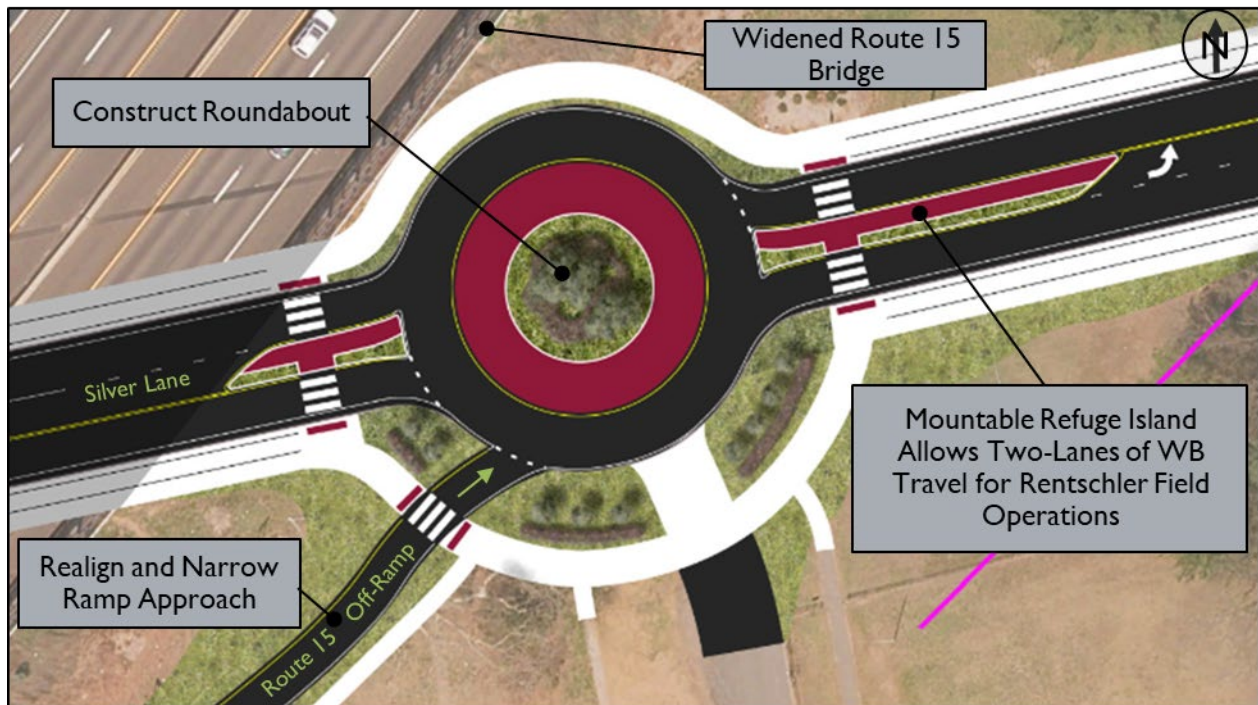


Route 15 On-Ramp Location-based Improvements

Route 15 Off-Ramp

The Route 15 Off-Ramp operates at LOS D under existing conditions in the weekday PM Peak hour, but will deteriorate to LOS F under 2040 Build conditions, because exiting ramp traffic will not be able to find sufficient gaps in the traffic to turn onto Silver Lane.

Construction of a roundabout is recommended as the best solution for this intersection. The off-ramp approach to the roundabout will include narrowing and introduce curvature to encourage lower vehicular speeds. In combination with the previously discussed improvements at the Route 15 On-Ramp, the new and improved pedestrian facilities and environment will create a safer walking route from residences along Silver Lane to the Silver Lane Elementary School.



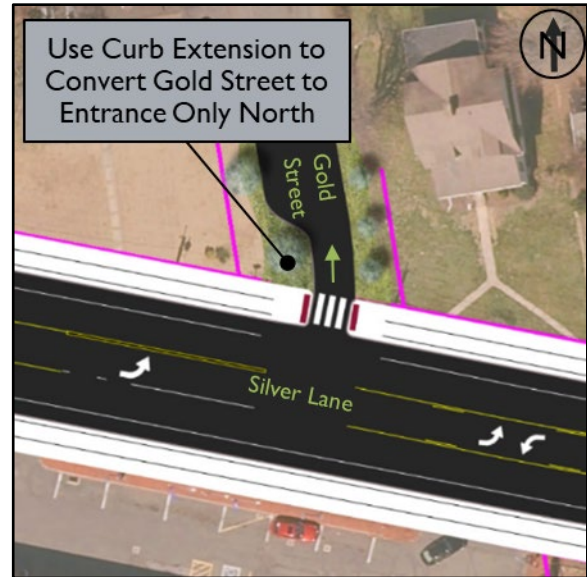
Route 15 Off-Ramp Location-based Improvements

Gold Street

Gold Street is a residential street that intersects Silver Lane a short distance east of Roberts Street. It is only one block long, running north from Silver Lane to Clement Road. Gold Street serves approximately 2 dozen single-family homes.

As noted earlier in the description of geometric deficiencies, Gold Street has sub-standard intersection sight distance looking to the left for vehicles turning left or right onto Silver Lane, and there have been several crashes at this location. Because the sight line limitation is another residential house, it is not considered feasible to improve this deficiency.

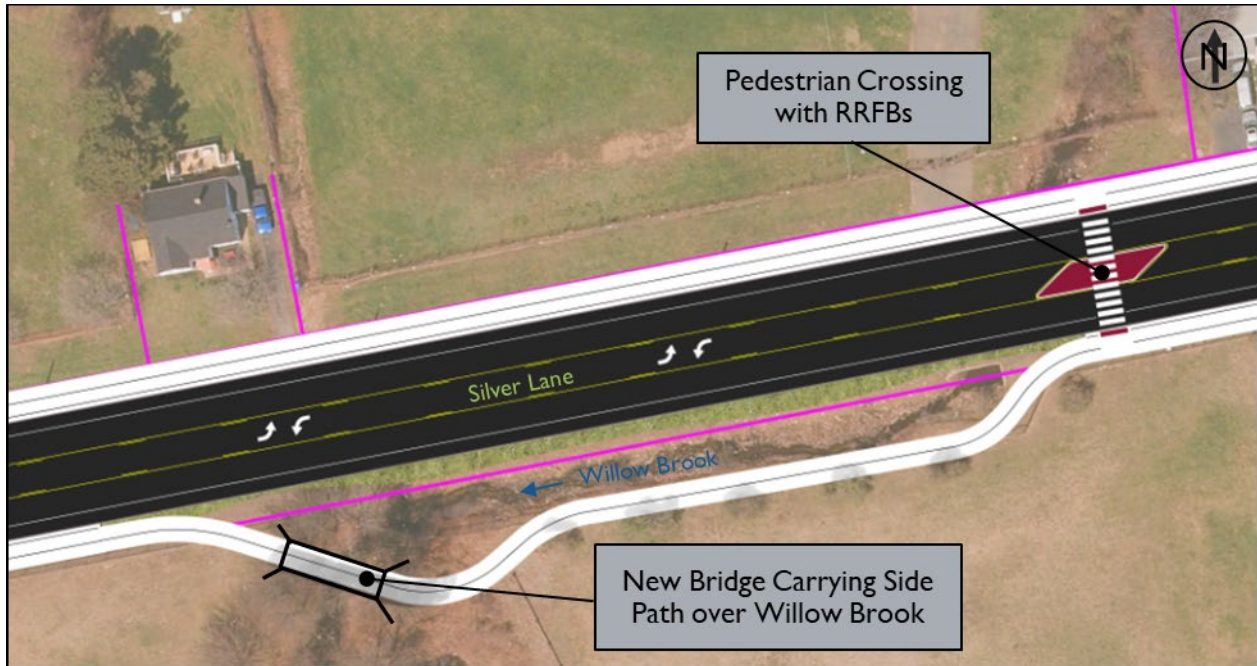
Through the discussions of the study team, it was decided that the best way to improve this situation is to make Gold Street one-way to the north, thereby eliminating the traffic turning onto Silver Lane. Residents of this street will travel north to Clement Road and either turn left and follow Clement Road back to Silver Lane, or turn right and follow Clement Road to Simmons Road. This minor inconvenience will eliminate the difficult turn onto Silver Lane, and improve safety at this location. This concept could be implemented on a trial basis using temporary infrastructure to gauge neighborhood support prior to implementation of more permanent infrastructure.



Gold Street Location-based Improvements

583 Silver Lane

The proposed side path on the south side of Silver Lane, necessary to close an existing sidewalk gap, must cross a small stream (Willow Brook) and its associated wetlands. The path will turn south to shorten the length of the bridge used in this crossing. It will then return to its alignment parallel to Silver Lane. Just east of this point, a mid-block crossing is proposed to service the parking fields on the north side of Silver Lane, and also because of the distance between crossings at Roberts Street and Simmons Road. Installation of Rectangular Rapid Flashing Beacons (RRFB's) is suggested at this location. This is one example of several mid-block pedestrian crossings recommended throughout the corridor.



583 Silver Lane Location-based Improvements

A full summary of proposed improvements is included in Section 5 of the full report. An assessment of probable construction costs is included on the following page.

Assessment of Probable Costs

Recommendations	Estimated Construction Cost
Pedestrian Safety	
Pedestrian Portion of Side Path (5' Concrete)	\$1,500,000
Buffer Strip (2' - 3' Hardscape)	\$1,500,000
ADA-compliant Push Buttons and Signals	\$100,000
ADA-complaint Sidewalk Ramps	\$200,000
Marked Crosswalks	\$55,000
Pedestrian Bridge over Willow Brook	\$200,000
Raised Refuge Islands	\$225,000
RFFBs	\$700,000
Textured / Mountable Refuge Islands	\$80,000
Ornamental Street Lighting	\$1,600,000
Bicycle Safety	
Bike Path Portion of Side Path (5' Asphalt)	\$400,000
Bike Path Signing and Striping	\$90,000
Transit Improvements	
Bus Shelters	\$500,000
Bus Pull-outs	\$260,000
Vehicle Operations and Improvements	
Widening to Implement Road Diet (Shoulders)	\$1,000,000
Route 15 On-Ramp	\$75,000
Roundabout at Route 15 Off-Ramp	\$2,500,000
Signalization Improvements at Mercer Avenue	\$250,000
Revise Parking at Carl's Barbeque	\$50,000
Signalization Improvements at Roberts Street	\$100,000
Signalization Improvements at Simmons Road	\$250,000
Separate Traffic Signals at Aldi and Silber Lane Plaza (E)	\$500,000
Traffic Signal Upgrades between Aldi and Forbes Street	\$500,000
Total	\$12,635,000

*Some funding has been secured to develop concepts and implement interim sidewalk improvements. See Interim Improvements section, following.

Interim Improvements

An opportunity emerged in the spring of 2019 to implement the proposed road diet under CTDOT's Vendor-in-Place (VIP) pavement rehabilitation program. While the long-term vision for this roadway segment includes additional amenities, the Town quickly saw the opportunity to capitalize on implementing the desired lane configuration under an existing funded program. As a result, the road diet is already in place, as shown in the images below. The implementation of the road diet has addressed deficient lane widths throughout the corridor. Additionally, the provision of the two-way center left turn lane allows traffic to safely bypass left turning vehicles while they wait for a gap in opposing traffic. Finally, the road diet has increased shoulder widths throughout the corridor. While this has improved the nature of bicyclist facilities, the resulting widths still do not meet standards to serve as bicycle lanes due to the limited curb-to-curb width of the existing roadway and the nature of improvements possible under the VIP program.



Silver Lane, near Whitney Street illustrating the lane configuration before (left) and after (right) the road diet implementation)



Silver Lane near the Burger King (708 Silver Lane) looking east before (left) and after (right) the road diet implementation

The Town worked with CTDOT to coordinate the installation and extension of fencing at the intersection of the Route 15 NB Off-Ramp to Plain Drive and Lawrence Street to encourage use of the sidewalks along Lawrence Street and Plain Drive, rather than walking on a dirt path near the Route 15 Off-Ramp. The intersection of the Route 15 Off-Ramp at Lawrence Street and Plain Drive was converted into an all-way Stop sign controlled intersection. A formal crosswalk was installed by the

town to direct pedestrians to walk across the Lawrence Street leg of the intersection, rather than the off-ramp leg.

Plans are nearing completion for construction of an interim sidewalk project that will complete gaps in the existing sidewalk, and provide better pedestrian connectivity using existing (in-place) funding. This work can eventually evolve into the larger plan. By completing this project, the Town will eliminate the gaps in the sidewalk network, one of the primary pedestrian deficiencies. This measure would help address the deficient intersection sight distance at this location by directing motorists to other intersections in order to turn on to Silver Lane.

The Town is currently applying for funding to complete a demonstration project to implement temporary traffic controls and curbing to reorient Gold Street to one-way operation. If successful, the Town can implement permanent measures to complete the conversion.

I. INTRODUCTION

The Capitol Region Council of Governments (CRCOG) and the Town of East Hartford, in cooperation with the Connecticut Department of Transportation (CTDOT), initiated the Silver Lane Corridor Study to evaluate traffic and development issues along Silver Lane in the Town of East Hartford. The purpose of the Study is to develop a comprehensive transportation plan for Silver Lane that will: (1) address safety, congestion, and mobility of the transit system, pedestrians, and bicyclists; and (2) assess travel demand growth and its impacts on area roadways including traffic associated with development within the Study Area. This report summarizes the findings from the existing conditions, future conditions and recommendations phases of the study.

I.1 Study Area

The Study Area includes the corridor along Silver Lane (State Route 502) in East Hartford from the intersection of the Route 15 entrance ramp easterly to the intersection of Forbes Street, a distance of approximately two miles, as shown in Figure 1. The study team also assessed intersecting side street approaches and access for adjacent land uses. Silver Lane is intersected by highway ramps, residential streets, and contains a 40,000-seat sports venue, and many businesses. There are also many local destinations on or adjacent to Silver Lane, such as schools, restaurants, retail, and grocery stores. Silver Lane is served by frequent bus service and there are multi-use paths for bicyclists and pedestrians adjacent to the Study Area.



Figure 1: Silver Lane Corridor Study Project Limits

I.2 Study Process

The Silver Lane Corridor Study was completed using a collaborative process with stakeholder and community involvement, an advisory committee, and technical reviews. The study included close collaboration with the other ongoing studies in the Silver Lane area, including the Brownfields Area-Wide Revitalization (BAR) Planning Grant Project, the flood control study of Willow Brook, and future development plans at sites along Silver Lane. A summary of the Study Team and the public involvement process is presented in Figure 2, page 15.

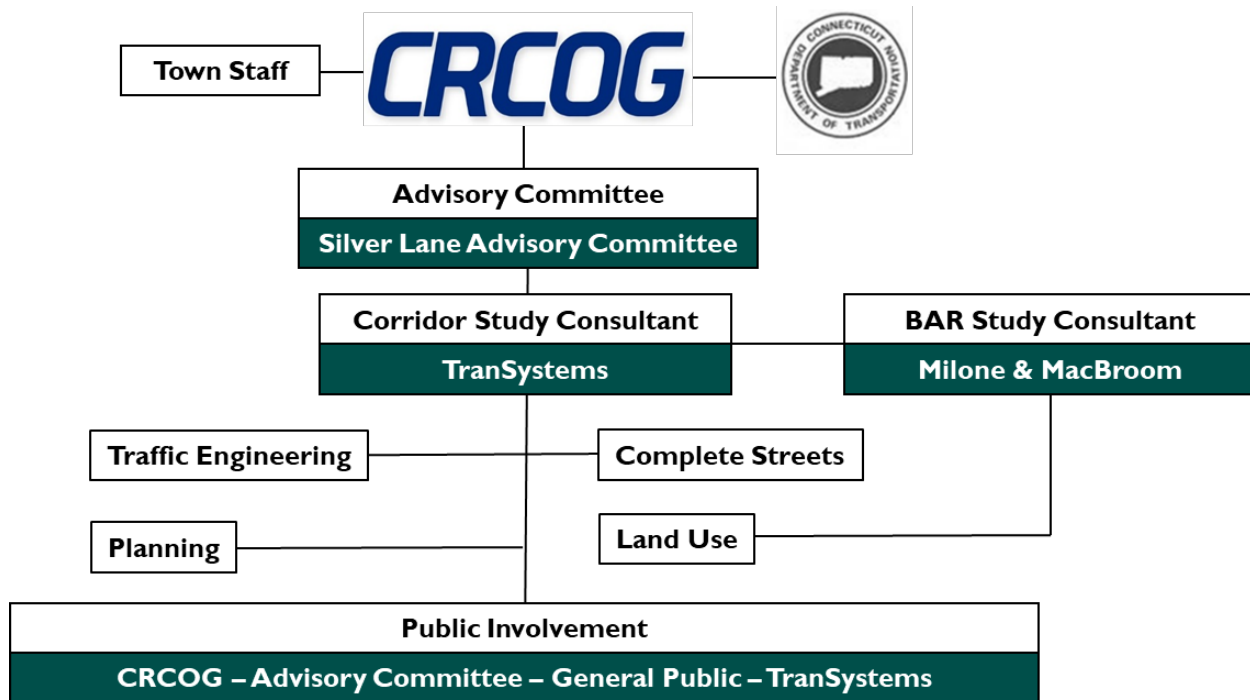
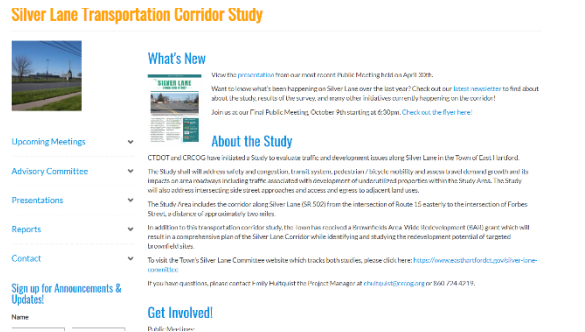


Figure 2: Study Team and Public Involvement Process

Key aspects of the study process included the study team's participation in Silver Lane Advisory Committee (SLAC) Meetings and hosting public information meetings. Additionally, the study process included additional means of public outreach to solicit and encourage input from the public. These included:

- **Silver Lane Advisory Committee Meetings:** SLAC members, along with CTDOT and CRCOG staff, served as the advisory committee for this study. The SLAC's role was to help guide the study process and assist in evaluating the feasibility and prioritization of alternatives. The study team participated in 16 Silver Lane Advisory Committee Meetings. The initial 11 meetings were held in coordination with the BAR study consultant. All meetings were open to the public and meeting materials were posted to the study website. Summaries of these meetings are included in Appendix A.I.
- **CTDOT Technical Meetings:** Three coordination meetings were held with CTDOT staff to ensure their input on technical aspects of the study findings and recommendations. Summaries of these meetings are included in Appendix A.I.
- **Stakeholder Meetings:** The study team met independently with five stakeholder groups during the data gathering phase of the study. The purpose of these meetings was to obtain background information on the corridor from a range of points of view. Summaries of these meetings are included in Appendix A.I.
- **Public Information Meetings:** Four sets of public information meetings were conducted throughout the course of the study. The purpose of these meetings was for members of the public to monitor the progress of the study and to provide input to the process and recommendations. Summaries of these meetings are included in Appendix A.I. The three public information meetings that were held at the East Hartford Town Hall were filmed and aired on the local public access station.

- Project Webpage:** CRCOG maintained a Silver Lane Corridor Study webpage (<http://crcog.org/2017/05/silverlanestudy/>) on their website that provided regular study updates including access to reports, presentation materials and meeting summaries. Site visitors have the ability to sign up to a mailing list and provide direct feedback.



Study Website (Accessed November 6, 2019)

2. EXISTING CONDITIONS ASSESSMENT

This section provides an assessment of the Silver Lane Study Area relative to the existing:

- roadway and traffic,
- land use and development,
- pedestrian, bicyclist, and vulnerable user, and
- transit /commuter systems.

Stakeholder input was a key component of the data collection process to help complete the existing conditions assessment. The purpose of the existing conditions assessment is to identify deficiencies in order to establish a baseline against which future conditions and improvement recommendations can be evaluated.

In the summer of 2019, prior to the completion of this report, Silver Lane was reconstructed as part of CTDOT's Vendor-in-Place (VIP) pavement rehabilitation program. With the support of CTDOT and the Town of East Hartford and the study team, several of the near-term recommendations discussed later in this report were implemented. When this section refers to 'existing conditions' it refers to the condition of Silver Lane prior to the VIP project.

2.1 Roadway and Traffic

This section identifies and evaluates the issues, deficiencies and opportunities of the existing roadway system within the Study Area. It is important to note that the roadway system is part of the overall Silver Lane transportation system, other elements of which are assessed in the following sections.

2.1.1 Roadway Characteristics

Silver Lane (Route 502) begins as a two-lane roadway at Main Street, west of the Study Area. As shown in Figure 3, heading east, Silver Lane widens to three lanes to facilitate turn lanes at the unsignalized intersections with the Route 15 On- and Off-Ramps, and the three-lane section continues until the approach to the signalized intersection at Roberts Street. This intersection is also the main entrance to Rentschler Field and the Pratt & Whitney/United Technologies campus.



Figure 3: Number of Vehicular Travel Lanes on Silver Lane

To accommodate traffic volumes, the intersection with Roberts Street features double left-turn lanes on all approaches except Silver Lane westbound. East of Roberts Street through the end of the Study Area at Forbes Street, Silver Lane is a four-lane roadway with turn lanes provided at the unsignalized intersection with Applegate Lane and the signalized intersections with Phillips Farm Road and Forbes Street.

The horizontal alignment of Silver Lane is generally straight. It consists of two long, straight segments connected by a reverse curve near Clement Road and Gold Street. The terrain of Silver Lane is generally level.

2.1.2 Roadway Standards

According to the CTDOT Highway Design Manual 2003 Edition (HDM), the following conditions apply:

- Urban minor arterial roadway functional classification
- Intermediate environment (density)

The posted speed limit in the Study Area is 35 mph, which indicates a 40 mph design speed should be utilized. The design standards for Silver Lane are shown in Table I. The values shown indicate either the appropriate range or minimum value. Minor arterial roadways balance access to adjacent commercial and residential uses with mobility of travelers connecting to statewide and interstate access points.

Table I: Design Standards

Design Element	Design Standard
Lane Width	11'-12'
Shoulder Width	4'-8'
Sidewalk Width	5'
Bicycle Lane Width	5'
Minimum Radius	490' (e=4%)

2.1.3 Geometric Conditions Review

Using a combination of field observations, field measurements, and aerial photographs, this section provides an assessment of the geometric characteristic of Silver Lane to determine where the existing roadways do not meet the current CTDOT design standards. Table 2 summarizes the results of this review. There are two locations where one travel lane in each direction measures ten feet. This lane width is noted as a deficiency. Roadway shoulders within the Study Area range from nonexistent, to

over six feet. The western portion of Silver Lane has shoulders on both sides of the street in most locations, between Main Street and Roberts Street. These vary in width between two feet and six feet. The middle of the corridor between Clement Road and Phillips Farm Road does not have any shoulders. The segment between Phillips Farm Road and the end of the study area at Forbes Street has a five-foot shoulder on the north side and a two-foot shoulder on the south side of Silver Lane.

The intersection sight distance from Gold Street, for both left and right turns, is deficient. The sight distance is restricted by a residential building and a large tree. This condition is illustrated in Figure 4, right.



Figure 4: Limited Intersection Sight Distance at Gold Street

Table 2: Summary of Existing Geometric Deficiencies

Existing Feature/Location	Existing Value (Approx.)	Design Standard Value	Comments
Lane Width			
Between Clement Road and Silver Lanes driveway*	10'-11' varies	11'-12'	Less than 11' is deficient
Between Silver Lane Plaza Entrance Drives*	10'-11' varies	11'-12'	Less than 11' is deficient
Shoulder Width			
Between Route 15 On- & Off-Ramps and Roberts Street	2'-6' varies	4'-8'	Most areas deficient
Between Clement Road and Phillips Farm Road	N/A	4'-8'	Deficient
Between Phillips Farm Road and Forbes Street	5' (north side) 2' (south side)	4'-8'	South side is deficient
Intersection Sight Distance			
Gold Street	355' (approx.)	445' min. right turn, 475' min. left turn	Restricted by residential building/ landscaping
Sidewalk Width			
Study Area	3'-8' varies	5' min.	Many areas deficient in width

*These deficiencies were addressed by the VIP pavement rehabilitation project in the summer of 2019.

2.1.4 Traffic Conditions

The existing traffic conditions assessment includes measures of traffic volumes, travel speeds, and traffic operations. These measures are used to quantify and evaluate trends and identify deficiencies.

2.1.4.1 Daily Volumes

On State roadways, CTDOT measures the **average daily traffic (ADT)** volumes approximately every three years. This data is collected with an automatic traffic recorder (ATR). The most recent counts on Silver Lane were in 2012. The historical ADT volumes are presented in Table 3, following. The ATR count locations are illustrated in Figure 5, following.

Average Daily Traffic (ADT) is the total average two-way traffic volume passing through a defined segment of roadway in a 24-hour period. ADT is measured in vehicles per day (vpd).

Historically, the ADT measured at the location east of Warren Drive has had the highest volume for all years collected between 2003 and 2012. Traffic volumes are significantly lower outside of the Study Area as shown at the East of Main Street and East of Forbes Street locations. The ADT volumes between 2003 and 2012 have had periodic fluctuations of nearly 15%. Within the Study Area between 2009 and 2012, the percent change varies from -3.4% to 8.8%. The 2012 volumes are in general less than their historical high in 2006, with the exception of the East of Warren Drive count location.

Given that the highest volumes occur near Warren Drive, this indicates that traffic originating and destined for I-84 is a large component of the traffic on Silver Lane. The count location is situated in between the access to I-84 at Roberts Street and the entrance to United Technologies/Pratt & Whitney and the Route 15 On- and Off-Ramps.

Table 3: Historical ADT Volumes (2003 – 2012)

Location on Silver Lane		CTDOT ADT (Vehicles per Day)			
		2003	2006	2009	2012
	East of Main Street	8,900	9,200	8,600	9,000
Within Study Area Limits	East of Route 15 On-Ramp	11,900	12,600	11,800	11,400
	West of Mercer Avenue	14,400	15,400	14,300	14,000
	East of Warren Drive	14,900	17,100	16,500	17,400
	East of Roberts Street	13,500	14,900	13,400	13,400
	East of Simmons Road	14,400	14,700	12,600	13,600
	West of Forbes Street	12,300	13,100	11,400	12,400
	East of Forbes Street	10,700	10,600	9,200	10,500

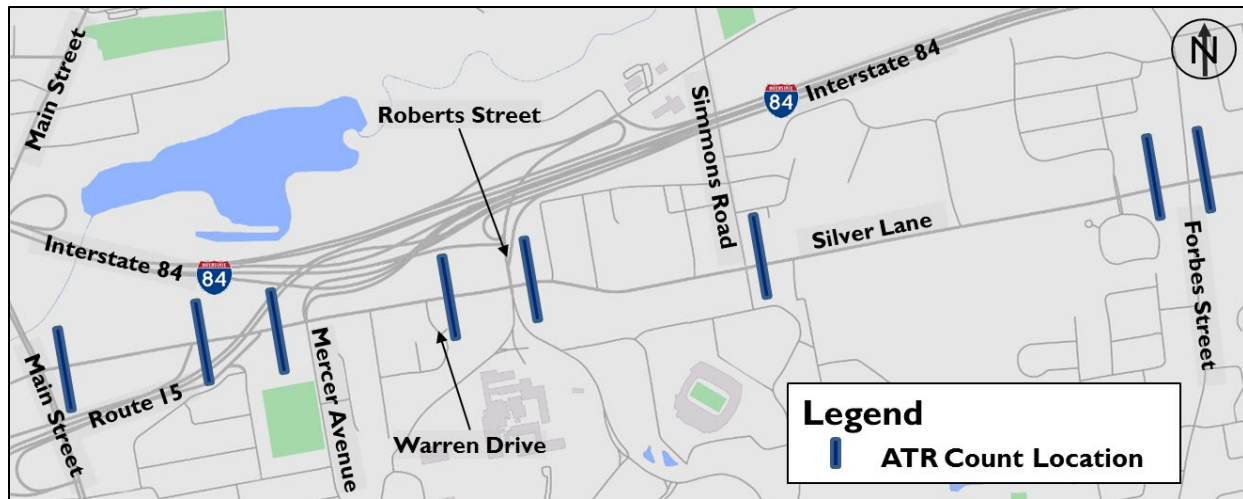


Figure 5: CTDOT Automatic Traffic Recorder (ATR) Locations

2.1.4.2 Travel Speeds

The travel speed data presented in this section is from the Federal Highway Administration (FHWA) National Performance Management Research Data Set (NPMRDS). FHWA has made this data set available to states and Metropolitan Planning Organizations (MPOs) as a tool for performance measurement. The NPMRDS data is validated and calibrated quarterly. Throughout the Study Area, the posted speed limit is 35 mph. The available travel speed data for this Study Area is the average travel speed. The average travel speed includes delays caused by traffic signals, turning vehicles, bus stops, and pedestrian crossings. The bi-directional average travel speeds for the morning (7 AM to 9 AM), midday (11 AM to 1 PM), and afternoon (3 PM to 4 PM) periods are shown in Figure 6, following.

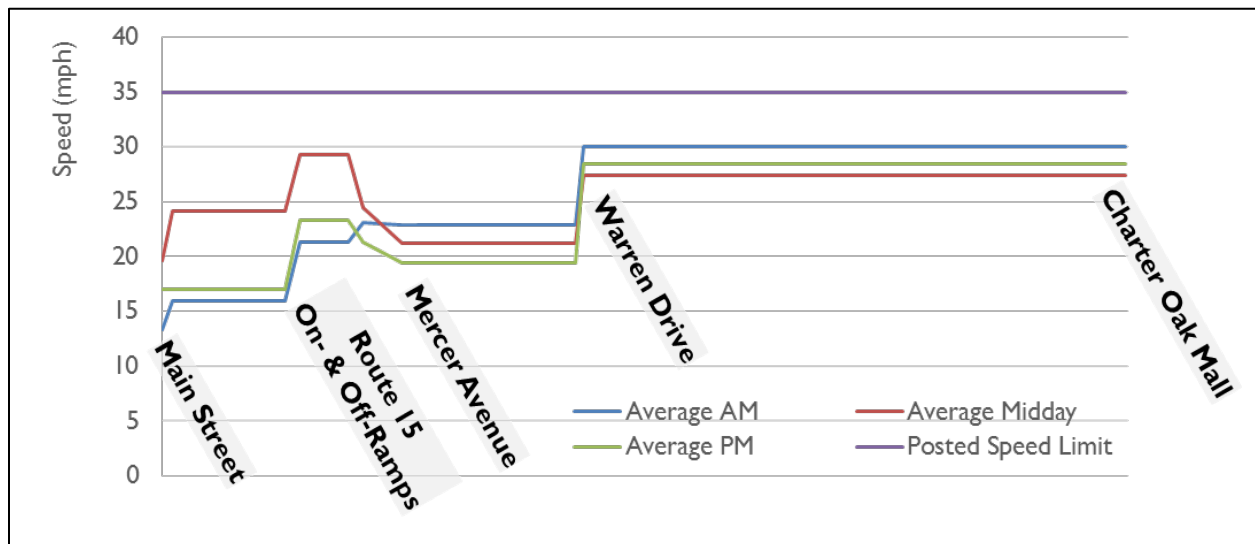


Figure 6: Bi-directional Average Travel Speeds along Silver Lane

From west to east for all of the data collection periods, average travel speeds are approximately 16 to 24 mph starting at Main Street. Approaching the Study Area, in the vicinity of the unsignalized intersections at the Route 15 On- and Off-Ramps, the average travel speeds increase to approximately 22 to 29 mph. Average travel speeds decline to approximately 19 to 23 mph heading east after Mercer

Avenue. East of Warren Drive, the average travel speeds are approximately 27 to 30 mph. Of note, between Mercer Avenue and Warren Drive, there is a moderate delay of 5 to 10 mph, compared to the section east of Warren Drive. This delay may be caused by several factors including reduced number of lanes, unsignalized access points, commercial driveways, and bus stops without pullouts. In addition to this data, stakeholders and members of the public noted that travel speeds during off-peak periods are often well in excess of the posted speed limit, particularly east of Roberts Street. This was confirmed with field research and test travel runs through the corridor.

2.1.4.3 *Peak Hour Volumes*

The Study Team collected turning movement counts at intersections along Silver Lane in order to assess traffic operations during the peak periods. The data was collected to supplement turning movement counts (2015) obtained from the intersections with the Route 15 On- and Off-Ramps and Mercer Avenue. The turning movement count data was collected in May 2017 for the weekday counts and July 2017 for the weekend counts. The weekday afternoon peak hour and weekend midday peak hour turning movement counts are presented in Figure 7, following. For each period count, volumes were balanced and adjusted where necessary to account for the different times counts were obtained.

In the weekday afternoon peak hour, the highest volume in any direction is from East Hartford Boulevard North straight to Roberts Street. The next predominant direction of travel is along Silver Lane towards either Main Street or Forbes Street. There are significant contributing volumes from Forbes Street east of the Study Area and from Roberts Street into the Study Area in both the eastbound and westbound directions. In the weekend midday peak hour, the predominant direction of travel is along Silver Lane. As compared to the weekday afternoon peak, there are similar volumes accessing the commercial drives at the Charter Oak Mall in the weekend midday peak hour. Peak hour volumes on Silver Lane are approximately 25% to 45% lower in the weekend midday peak hour as compared to the weekday afternoon peak.

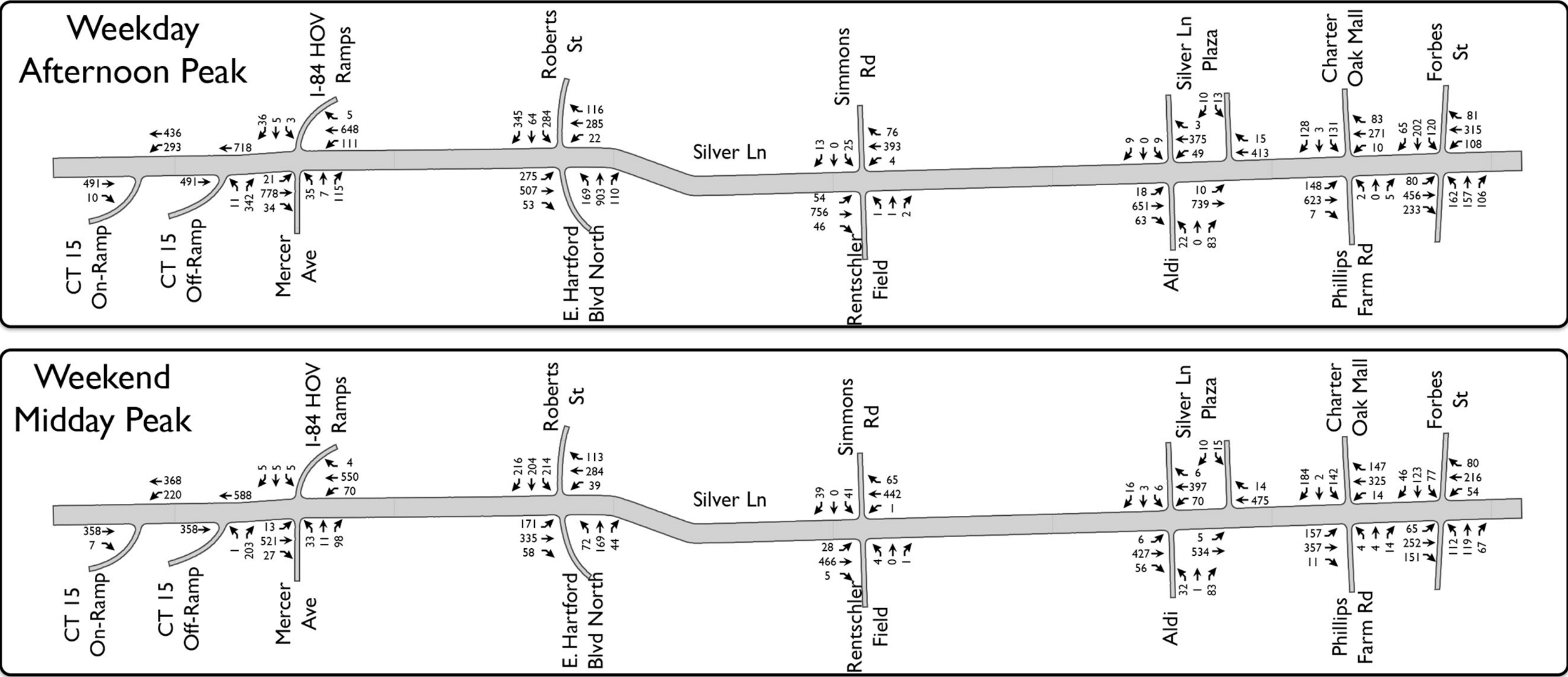


Figure 7: Existing (2017) Weekday Afternoon (Top) and Weekend Midday Peak (Bottom) Hour Turning Movement Counts

2.1.4.4 Traffic Operations

The existing conditions assessment included an evaluation of congestion and delay at the nine study intersections during the weekday afternoon peak hour and the weekend midday peak hour. The **level of service (LOS)** is a representation of the average delay (in seconds per vehicle, sec/veh) that motorists experience at a single movement, an intersection approach, or the intersection as a whole. LOS for unsignalized intersections is for the critical movement, typically the side street or mainline left turn. Capacity analyses were developed using Synchro traffic analysis software, the peak hour turning movement volumes, and the traffic signal timing plans obtained as part of this existing conditions analysis, with the following results:

Level of Service (LOS) for an intersection is a qualitative measure of traffic operations that reflects the delay experienced by vehicles at the intersection. LOS values range from A to F. LOS A represents the best operational conditions with little delay. LOS F represents generally congested conditions with long delays and traffic queues. For the Silver Lane corridor, LOS D or better represents an acceptable degree of congestion; LOS E and F represent an unacceptable degree of congestion.

- Overall, all signalized intersections in the Study Area operate at a LOS D or better during the peak periods, representing an acceptable degree of congestion.
- The unsignalized intersection of Silver Lane and the Route 15 On-Ramp operates at LOS A/B, and the Route 15 Off-Ramp operates at LOS D or better during both peak hours, also representing acceptable conditions.
- A summary of the LOS results is presented for each approach in Table 4, following, and for the overall intersections in Figure 8, below.

In addition to LOS, the queue lengths were computed for all approaches to the study intersections using Synchro / SimTraffic. As a measure of the efficiency of the signal system, it is important to determine if vehicles queue into adjacent intersections where the delay from one intersection would spill over into the next. The 95th percentile queues (5% probability of occurring any given peak hour) is utilized for this analysis. Generally, in both the weekday PM peak and weekend midday peak, there is adequate queue storage such that queues do not block adjacent intersections. However, eastbound and westbound queues approaching Mercer Avenue may extend through the next intersections, especially during the weekday PM peak hour.

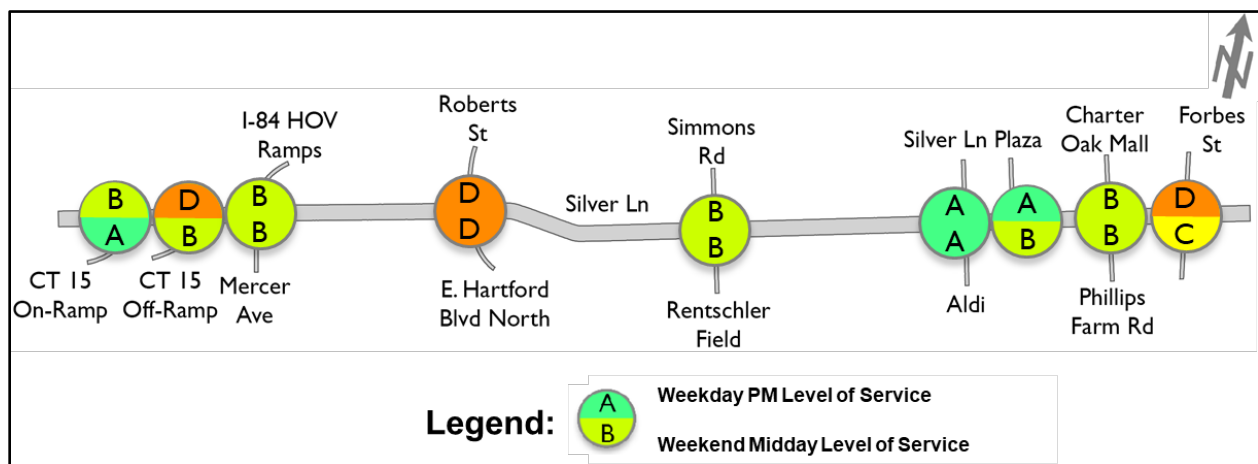


Figure 8: Level of Service (LOS) for Study Intersections on Silver Lane

Table 4: Existing (2017) Level of Service (LOS) Summary for Study Intersections

Intersection / Approach	Weekday Afternoon Peak							Weekend Midday Peak		
	Available Storage	LOS	Delay (sec / veh)	95% Queue	LOS	Delay (sec / veh)	95% Queue			
Silver Lane at CT 15 On-Ramp (Unsignalized)										
Silver Lane Eastbound	781	A	0.0	0.0	A	0.0	0.0			
Silver Lane Westbound	759	B	10.2	34.0	A	9.0	20.0			
Overall										
Silver Lane at CT 15 Off-Ramp (Unsignalized)										
Silver Lane Eastbound	759	A	0.0	0.0	A	0.0	0.0			
Silver Lane Westbound	463	A	0.0	0.0	A	0.0	0.0			
CT 15 Off-Ramp Northbound	1125	D	32.7	171.0	B	13.5	38.0			
Overall										
Silver Lane at Mercer Avenue / I-84 HOV Ramps (Signalized)										
Silver Lane Eastbound	463	C	23.1	1020.0	B	16.3	467.0			
Silver Lane Westbound	2085	A	8.6	470.0	A	8.7	362.0			
Mercer Avenue Northbound	670	D	50.7	72.0	D	35.1	72.0			
I-84 HOV Off-Ramp Southbound	630	D	42.6	22.0	C	33.9	24.0			
Overall		B	16.6		B	13.0				
Silver Lane at Roberts Street / East Hartford Boulevard North (Signalized)										
Silver Lane Eastbound	260/2085	E/D	66.3/48.7	165/283	E/E	76.7/62.8	129/229			
Silver Lane Westbound	160/2556	E/E	69.8/61.4	48/178	E/E	77.2/68.3	81/202			
East Hartford Boulevard North Northbound	150/200	E/C	61.0/26.7	107/258	E/B	74.6/19.3	65/52			
Roberts Street Southbound	150/268	E/B	66.6/17.0	171/26	E/B	75.3/16.1	154/80			
Overall		D	37.7		D	44.6				
Silver Lane at Simmons Road / Rentschler Field (Signalized)										
Silver Lane Eastbound	2540	B	12.6	298.0	B	10.7	153.0			
Silver Lane Westbound	2556	A	9.6	144.0	B	10.2	150.0			
Rentschler Field Access Drive Northbound	982	C	23.0	9.0	B	19.5	9.0			
Roberts Street Southbound	825	B	15.6	98.0	A	9.3	42.0			
Overall		B	11.9		B	10.4				
Silver Lane at Silver Lane Plaza / Aldi (Signalized)										
Silver Lane Eastbound	2556	A	8.0	234.0	A	7.6	129.0			
Silver Lane Westbound	394	A	3.1	5.0	A	7.4	27.0			
Aldi Drive Northbound	450	D	38.3	34.0	D	40.8	44.0			
Silver Lane Plaza Drive Southbound	463	D	37.2	30.0	D	37.4	37.0			
Overall		A	6.9		A	9.7				
Silver Lane at Silver Lane Plaza (Signalized)										
Silver Lane Eastbound	394	A	1.4	19.0	A	1.9	32.0			
Silver Lane Westbound	1041	B	16.3	78.0	C	27.3	186.0			
Silver Lane Plaza Drive Southbound	467	C	34.5	24.0	C	34.3	25.0			
Overall		A	6.8		B	14.3				
Silver Lane at Charter Oak Mall / Phillips Farm Road (Signalized)										
Silver Lane Eastbound	1041	A	9.2	170.0	A	9.2	95.0			
Silver Lane Westbound	769	B	10.3	68.0	B	11.5	83.0			
Aldi Drive Northbound	594	A	0.0	0.0	B	15.0	21.0			
Silver Lane Plaza Drive Southbound	549	D	41.4	119.0	D	39.3	126.0			
Overall		B	11.1		B	11.4				
Silver Lane at Forbes Street (Signalized)										
Silver Lane Eastbound	769	D	38.6	513.0	C	22.5	196.0			
Silver Lane Westbound	1106	C	28.0	226.0	C	24.2	147.0			
Forbes Street Northbound	1073	D	40.7	356.0	C	30.0	202.0			
Forbes Street Southbound	978	D	51.5	405.0	C	33.4	191.0			
Overall		D	36.1		C	24.5				

2.1.5 Crash History

Crash data for Silver Lane was obtained from the University of Connecticut (UConn) Connecticut Crash Data Repository (CTCDR) for the three-year period from January 1, 2012 to December 31, 2014. A total of 206 crashes were recorded in the corridor. One crash resulted in a fatality and approximately 30% crashes resulted in an injury. The fatality in the data period was one of the four total pedestrian-involved crashes in the Study Area. The location of the pedestrian-involved crashes are presented in Figure 9. The overall crash trends for the corridor included:

- Nearly one-third of crashes were rear-ends, a common collision type attributed to vehicles following too closely
- Approximately 30 % of crashes involved turning movements, attributed to failure to grant right-of-way and improper turning or passing maneuvers
- Approximately 20% of crashes involved sideswipes, attributed to improper passing maneuvers or improper lane change

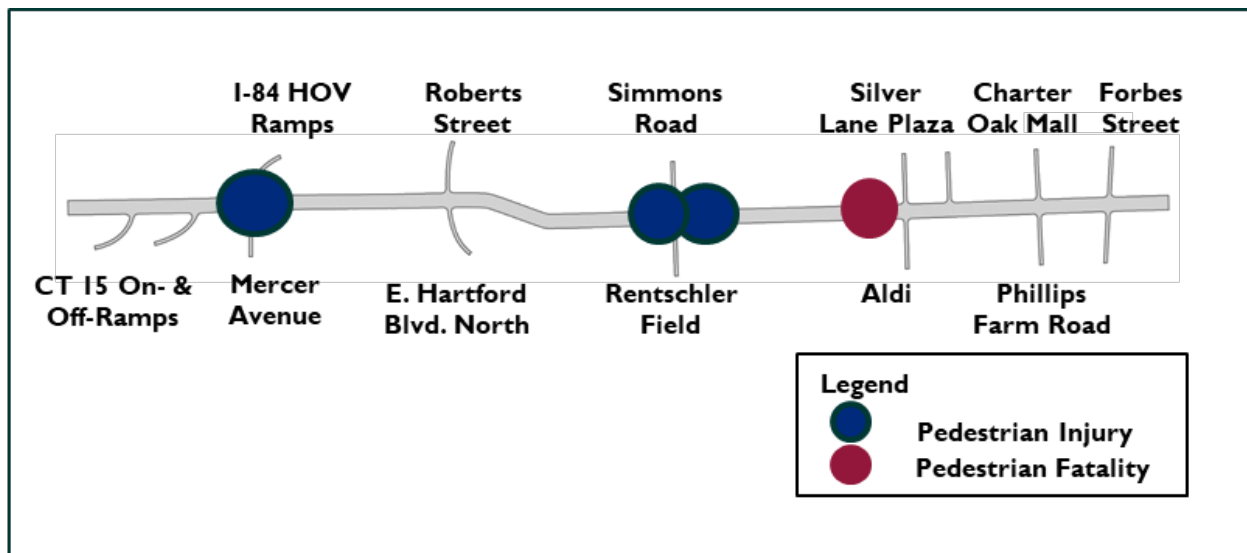


Figure 9: Pedestrian Crash Locations in the Study Area

The 206 total crashes in the corridor were separated into intersection related crashes and crashes on segments between intersections. Table 5, following, presents a summary of the crash data for intersections in the Study Area. In the three-year data period, there were 120 crashes at intersections. Half of the study intersections had rear-end collisions as one of the most prevalent collision types. Over one-third of crashes at intersections resulted in an injury. The remaining crashes at intersections resulted in property damage only. There were no fatalities at intersections in the data period. However, two of the pedestrian-involved crashes occurred at intersections, resulting in injuries. The pedestrian-involved crashes occurred at the intersection of Mercer Avenue and Simmons Road, both under dark-lighted conditions.

Table 5: Crash History at Intersections (2012 – 2014)

Intersection Street	Total Crashes in Data Period	Percent Injury	Most Prevalent Collision Type
Route 15 On- & Off-Ramps	2	100%	Fixed Object - 50% Turning-Opposite Direction - 50%
I-84 HOV Ramps and Mercer Avenue	7	86%	Angle - 29%
Whitney Street	7	29%	Rear-end - 29% Sideswipe-Same Direction - 29%
Warren Drive	4	25%	Rear-end - 75%
Roberts Street and East Hartford Boulevard North	27	33%	Rear-end - 52%
Clement Road	4	25%	Turning-Intersecting Paths - 50%
Gold Street	10	40%	Turning-Intersecting Paths - 30%
Simmons Road	17	35%	Rear-end - 29%
Applegate Lane	5	20%	Sideswipe-Same Direction - 40%
Silver Lane Plaza	4	50%	Turning-Same Direction - 50%
Phillips Farm Road	4	25%	Rear-end - 50% Turning-Intersecting Paths - 50%
Forbes Street	29	31%	Rear-end - 34%
Subtotal	120		

Table 6, following, presents a summary of the crash data on segments between intersections in the Study Area. In the three-year data period, there were 86 crashes between intersections. Over half of the segments had rear-end collisions as the most prevalent collision type. Approximately 20% of crashes between intersections resulted in an injury and there was one fatality during the data period. There were two pedestrian-involved crashes between intersections, one of which resulted in injury and one that resulted in a fatality. Both pedestrian-involved crashes occurred between Simmons Road and Applegate Lane, both under dark-lighted conditions. Also presented in Table 6 is the crash rate for the segments between intersections along Silver Lane. The crash rate for a segment of roadway is expressed as the number of crashes per 100 million vehicle-miles of travel (HMVMT). The crash rate corrects for the exposure of the segment (traffic volumes, number of years of data, and length of roadway segment) in order to enable comparison between roadway segments. The crash rate does not account for any other differentiating factors such as geometrics or cross section.

Table 6: Crash History on Silver Lane Roadway Segments (2012 – 2014)

Segment Location	Total Crashes in Data Period	Crash Rate (HMVMT)	Percent Injury	Most Prevalent Collision Type
Adjacent to Route 15 On- & Off-Ramps	3	80	0%	Rear-end - 100%
Between Mercer Avenue and Whitney Street	6	489	33%	Rear-end - 33%
Between Whitney Street and Warren Drive	15	984	33%	Rear-end - 40%
Between Warren Street and Roberts Street	14	735	14%	Rear-end - 29%, Fixed Object - 29%
Between Roberts Street and Clement Road	2	682	100%	Sideswipe-Same Direction - 50%, Fixed Object - 50%
Between Clement Road and Gold Street	6	672	0%	Turning-Intersecting Paths - 33%, Fixed Object - 33%
Between Gold Street and Simmons Road	7	235	0%	Sideswipe-Same Direction - 43%,
Between Simmons Road and Applegate Lane	14	229	29%	Rear-end - 29%,
Between Applegate Lane and Silver Lane Plaza	2	448	50%	Turning-Intersecting Paths - 50%, Turning-Opposite Direction - 50%
Between Silver Lane Plaza and Phillips Farm Road	14	409	21%	Rear-end - 29%,
Between Phillips Farm Road and Forbes Street	3	276	0%	Fixed Object - 33%, Sideswipe-Same Direction - 33%

2.1.6 Access Management

Access management strategies are used to control access to roadways in order to improve traffic operations, reduce the number of vehicle conflicts and reduce the number of crashes. These strategies generally include increased spacing between access points, dedicated turn lanes or roundabouts, where appropriate, median treatments, and right-of-way management. Some examples of these strategies are shared drives, one-way drives, two-way left-turn lanes (TWLTL), left-turn prohibitions and maintenance of sight lines.

Access management is the proactive management of vehicular access points to land parcels adjacent to roadways to promote safe and efficient use of the transportation network. (FHWA)

In the Study Area, there are a number of commercial and residential driveways along the corridor. Adding to the complexity are several intersections with access points to I-84 and Route 15, Rentschler Field, and a major employment campus. As new development and redevelopment is planned along the corridor, it is important to consider the management of access points as part of the site plan approval process. As part of this study, a review of the existing driveways was undertaken and access deficiencies were identified through field visits, stakeholder interviews, a review of crash data and an examination of aerial photos.

2.1.6.1 *Route 15 On- and Off-Ramps to Roberts Street Segment*

This segment of Silver Lane begins at the western edge of the Study Area and continues to the intersection of Roberts Street and East Hartford Boulevard North. The majority of this segment is a three-lane roadway with two lanes eastbound and one lane westbound. Turn lanes are provided at the Route 15 On-Ramp, Mercer Avenue and Roberts Street. Protected turn lanes are not provided to access commercial drives throughout this segment. The access management deficiencies in this segment relate to driveways adjacent to intersections, wide curb cuts, poor sight distance, and the proximity of adjacent commercial driveways.

Generally, access drives should be greater than 150 feet from an intersection. Access points in close proximity to intersection add to the complexity of the environment for vehicular users, and for bicyclists and pedestrians navigating the crossing. There are residential and commercial driveways adjacent to both the On- and Off-Ramps for Route 15.

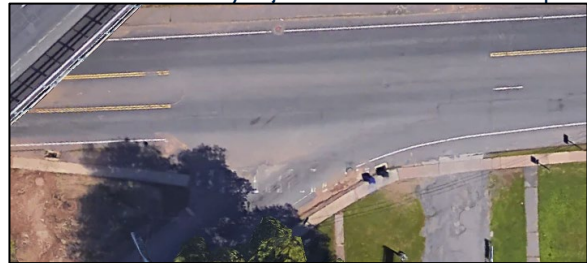
At 281-287 Silver Lane (Carl's Barbecue), there are a number of businesses on the ground level with residential uses above. The curb cut for these businesses is along the frontage of the whole property. The parking is 90-degree head-in, which requires backing into the flow of traffic on Silver Lane. In addition, the parking area crosses the unmarked sidewalk, leaving pedestrians with a poorly defined path for safe travel. As a result, there are multiple potential conflicts between parking vehicles, passing vehicles, and pedestrians while navigating into or out of these business spaces.

Further east at 306-310 Silver Lane (Tire City and Queen Pizza), there are adjacent access driveways where the curb cut extends for the entire length of the frontage of one parcel, and extends into the other parcel in a continuous driveway over 100 feet long.

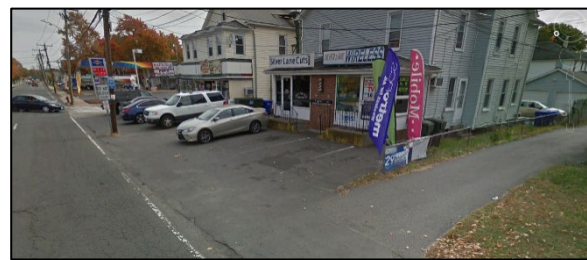
At 398 Silver Lane, there is a residential driveway nearly in the intersection of Roberts Street and East Hartford Boulevard North. Accessing this driveway during the peak hours may be difficult as this intersection is the one of the busiest intersections within the Study Area. This driveway location is also in conflict with the preferred crosswalk location, and causes the crosswalk to be skewed to miss the driveway.



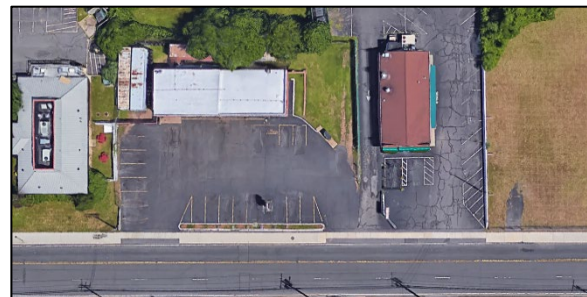
Residential driveway adjacent to Route 15 On-Ramp



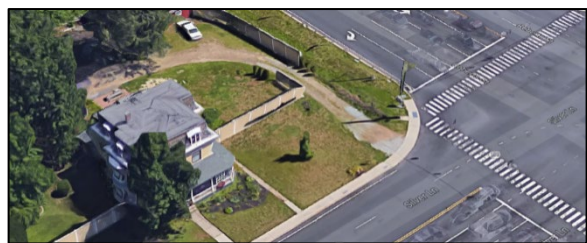
Residential / Commercial driveway adjacent Route 15 Off-Ramp (187-195 Silver Lane)



Mixed Use Businesses with Wide Curb Cut, Looking East (281-287 Silver Lane)



Adjacent Commercial Driveways and Wide Curb Cut (306-310 Silver Lane)



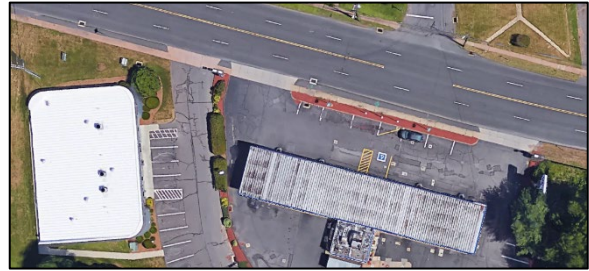
Residential Driveway at intersection (398 Silver Lane)

2.1.6.2 Roberts Street to Applegate Lane Segment

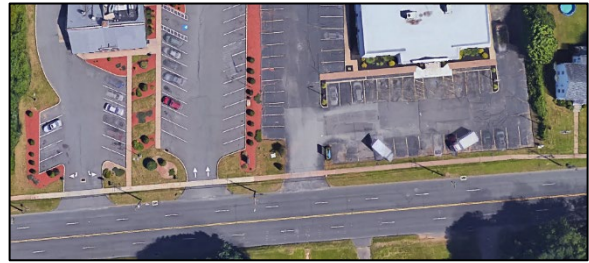
This segment of Silver Lane begins at the intersection of Roberts Street and East Hartford Boulevard North and ends at Applegate Lane. The majority of this segment is a four-lane roadway that widens to a five-lane section at Applegate Lane to provide a protected left turn lane. Access issues in this segment pertain to the proximity of adjacent commercial driveways in addition to the large number of individual residential properties, each with its own driveway. Closely spaced access drives on the same side of the road have the potential to cause delays and accidents as drivers navigate the access points.

At 467-483 Silver Lane, two separate commercial properties have driveways spaced only 10 feet apart, and one has over 1/3 of its 200 foot frontage consisting of driveways. At 708-720 Silver Lane, there are three driveways (totaling 160 feet) to two commercial properties in a distance of only 200 feet.

At 735-785 Silver Lane, these four commercial parcels have partial connections between the properties, but have five curb cuts to Silver Lane, totaling over 250 feet in length. The excessive number of curb cuts creates a confusing traffic pattern, as vehicles cross each other while entering and exiting the parcels.



Adjacent Commercial Driveways (467-483 Silver Lane)



Adjacent Commercial Driveways (708-720 Silver Lane)

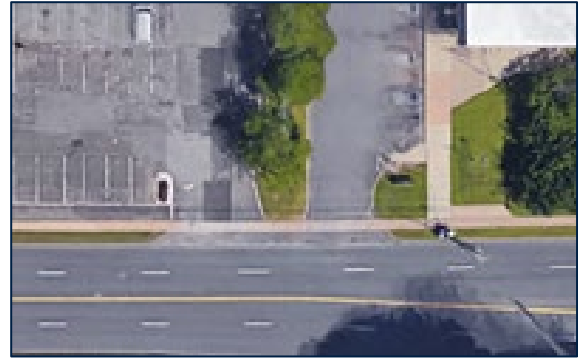


Excessive Curb Cuts (735-785 Silver Lane)

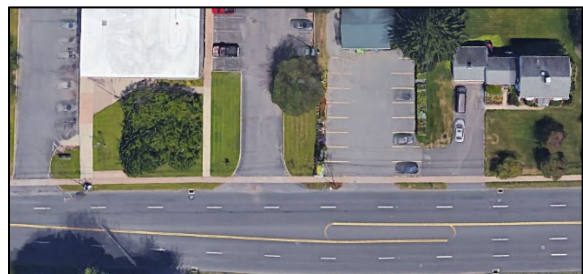
2.1.6.3 Applegate Lane to Forbes Street Segment

This segment of Silver Lane begins at the intersection of Applegate Lane and ends at Forbes Street, the eastern boundary of the Study Area. The majority of this segment is a four-lane roadway that widens to a five-lane section at Phillips Farm Road and at the approach of Forbes Street to provide protected left turn lanes. The access management deficiencies in this segment pertain to the number of curb cuts and the proximity of adjacent commercial driveways. Having these driveways closely spaced contributes to the number of conflict points facing vehicles, pedestrians, and bicyclists.

At Silver Lane Plaza, 888 Silver Lane, and 910 Silver Lane, there are seven commercial driveways in a distance of just over 1,000 feet, including the plaza, US Post Office and Futtner's Family Farm, which consists of a residence and farm stand. Two of these driveways are signalized, although turn lanes are not provided.



Adjacent Commercial Driveways
(Silver Lane Plaza & 888 Silver Lane)



Adjacent Commercial Driveways (888-910 Silver Lane)

2.1.7 Management of Special Events

Rentschler Field is the home field of the University of Connecticut (UConn) football team, and also hosts other events throughout the year. The stadium, which has a capacity of approximately 40,000, is accessed directly from Silver Lane opposite Roberts Street. Rentschler Field was donated to the State of Connecticut by United Technologies, parent company of Pratt & Whitney, in 1999. An additional 65 acres was donated in 2009, and is currently used as grass parking lots. From Silver Lane, Rentschler Field can be accessed from the main gate at the intersection of Roberts Street and East Hartford Boulevard North and at the East Gate on Simmons Road. There is also a south gate to Brewer Street, but use of this gate is restricted. Previous access to Willow Street is no longer available. The Study Team reviewed the 2011 Traffic and Parking Plan for Rentschler Field as part of this investigation.

After high attendance events at Rentschler Field, the East Hartford Police Department manages the traffic demand through the use of a temporary traffic control pattern. The Police set up traffic cones on Silver Lane to direct traffic from Rentschler Field west to Route 15, the I-84 high-occupancy vehicle (HOV) access, and other points west. The temporary traffic control is employed to reverse the direction of the center travel lane on Silver Lane between Roberts Street and the Route 15 Southbound On-Ramp. This configuration allows two lanes of travel to Rentschler Field prior to the game and two lanes of travel away from Rentschler Field following the game.



UConn Football Game at Pratt & Whitney Stadium

2.2 Land Use and Development

The completion of Interstate 84 in the late 1960s supported commercial and residential development in East Hartford. With an increasing residential population and good access to I-84, Route 2, and Route 15, the Silver Lane Plaza was developed as one of the largest commercial projects in the greater Hartford area during this time period. When Interstate 384 (I-384) opened in 1971, a direct interchange with I-84 was not provided, and Silver Lane had an increase in traffic as the major connection between the two interstates. In this era, two additional large developments were constructed along Silver Lane, the Showcase Cinema and the Charter Oak Mall.

Beginning in the 1980s, increased regional competition and the completion of the I-384 connection to I-84 (which required the removal of the Forbes Street interchange) reduced traffic on Silver Lane. These changes resulted in a commercial shift from a regional retail center to local neighborhood-oriented businesses on Silver Lane. Since the opening of Rentschler Field in 2003, there has been some additional supporting development, including Cabela's, an 185,000 square foot specialty sporting goods store.

On Silver Lane, there are a mix of land uses along the corridor. Within the Study Area, approximately one quarter of the corridor is undeveloped land, another quarter is residential, and the remainder is divided between industrial, commercial, and other uses. The undeveloped land category includes protected open space, vacant land, and agricultural land. For additional detail on land use, please see the final report published by the BAR Grant Study located on the Town's website (https://www.easthartfordct.gov/sites/easthartfordct/files/uploads/silver_lane_revitalization_plan_final_wi_th_appendices.pdf).

2.3 Pedestrians, Bicyclists and Vulnerable Users

There are many local destinations on or adjacent to Silver Lane, including the Silver Lane Elementary School, restaurants, retail shops, grocery stores and Elizabeth Shea Park, that are readily accessible on foot from the surrounding residential neighborhoods. These are illustrated in Figure 10, below.

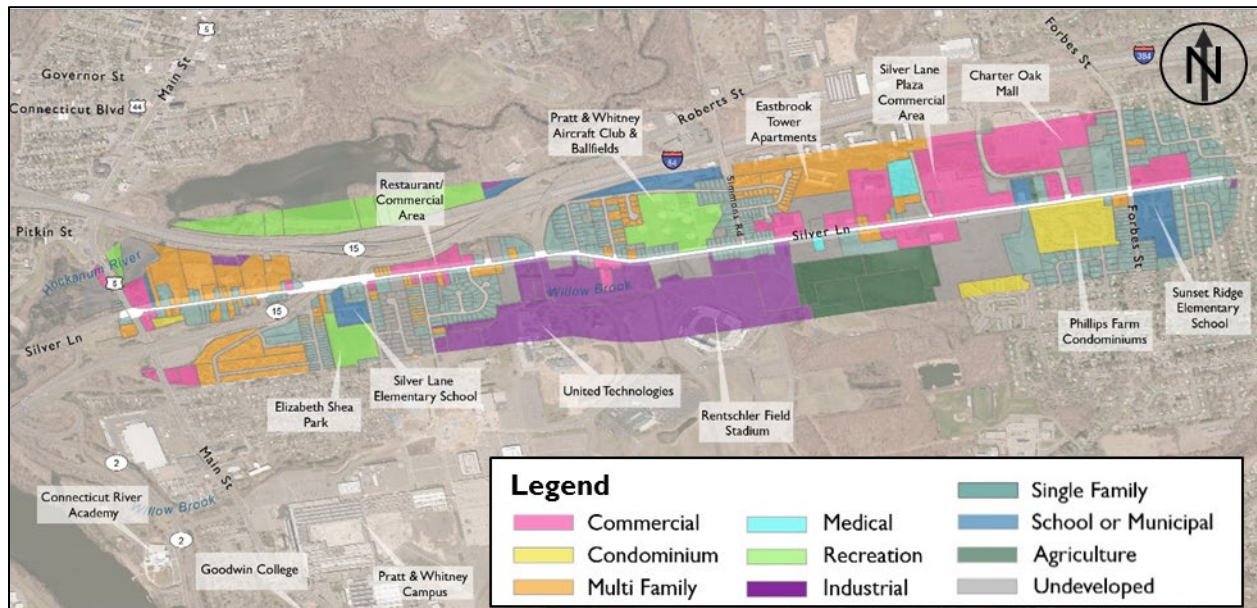


Figure 10: Local Destinations and Land Uses

Bicyclist and pedestrian counts were gathered at locations where the study team directly obtained traffic count information. The counts were processed by reviewing the videotaped intersection operations over the two weekday peak periods (7 – 9 AM and 4 – 6 PM). These counts are illustrated in Figure 11, below.

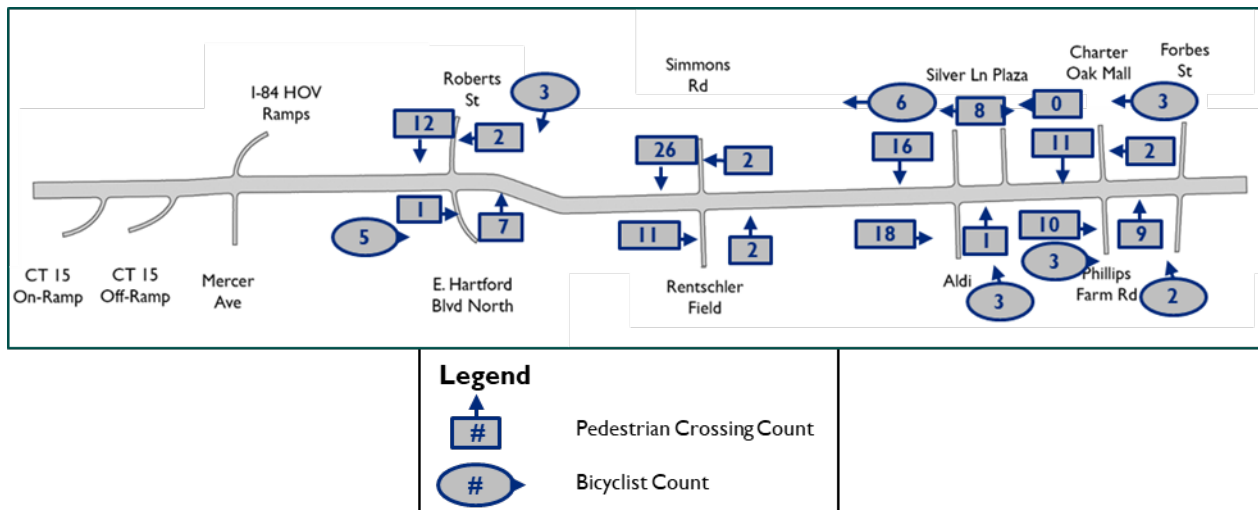


Figure 11: Existing (2017) Bicyclist and Pedestrian Counts

Generally, the counts indicated there is notable demand for bicyclist and pedestrian facilities within the corridor despite the deficiencies highlighted in the following sections,

2.3.1 Pedestrian Facilities

Due to the varied land uses within the Study Area, many pedestrians utilize the corridor to walk between locations, such as businesses and their homes. Most of these destinations are within a ten-minute walk, which provides a good potential for pedestrian and bicycle users. Overall, within the Study Area, the pedestrian network connecting these destinations varies from good to poor condition. The existing condition of the sidewalks, pedestrian crossings, and implementation of Americans with Disabilities Act (ADA) measures were assessed within the Study Area, and are summarized as follows:

2.3.1.1 Sidewalks

There is a sidewalk on the north side of Silver Lane throughout the Study Area. There is sidewalk for much of the south side, although there is a gap from Gold Street to Phillips Farm residential community (except for a short section of sidewalk along the frontage of the Aldi grocery store). Along the corridor, the sidewalk widths vary from three feet to eight feet, and materials and condition are inconsistent. The section of sidewalk at 281-287 Silver Lane (Carl's Barbecue) becomes part of the head-in parking area, and is not well defined, as vehicles back over the pedestrian path. Illustrated in Figure 12, following, are sidewalks widths along Silver Lane.



Figure 12: Sidewalk Network and Widths in Feet

The condition of the sidewalk varies throughout the corridor, with some sections being in poor condition. Sidewalk heaving, worn and uneven concrete and vegetation encroachment are prevalent within the corridor. Sidewalks in poor condition are a hazard to pedestrians. Users in wheelchairs may have difficulty traveling on uneven, sloped sidewalks. These factors contribute to a poor pedestrian experience. In addition, many areas have only narrow buffer strips, and provide little perceived protection from the roadway. A map of the sidewalk condition is presented in Figure 13, following. Sidewalks were categorized in good condition if they appeared in almost new condition and lacked any noticeable deficiencies. Sidewalks in fair condition were those that were intact, level, and did not have any vegetation encroachment, but were older and somewhat worn. Sidewalks in poor condition were those that were either cracked, uneven, very worn, or had significant vegetation encroachment. Examples of poor sidewalk conditions in the Study Area are provided below.



Cracked Sidewalk on Silver Lane



Vegetation Encroachment on Sidewalk



Uneven and Sloped Sidewalk

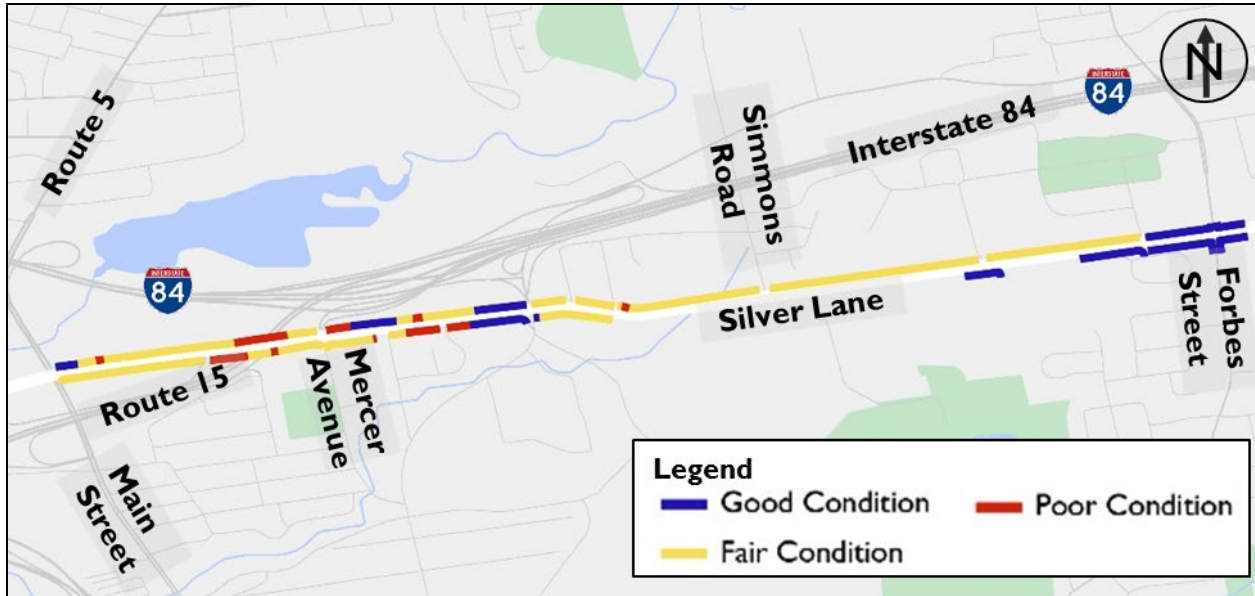


Figure 13: Sidewalk Condition

2.3.1.2 Crossings

Crosswalks are provided for crossing the side street at the majority of the intersections on Silver Lane, illustrated in Figure 14, below. At all signalized intersections, there are crosswalks to connect existing sidewalks, with the exception of the crossings at the two Silver Lane Plaza signals, where the sidewalk extends across the driveway. At the unsignalized intersections, there are crosswalks provided to connect the existing sidewalk network, with the exception of the Route 15 On-Ramp, Clement Road, Gold Street, and the Silver Lanes driveway.



Figure 14: Crosswalk Locations along Silver Lane

In addition, several deficiencies in crossings were noted:

- At the intersection of the Route 15 On-Ramp, there is no crosswalk provided. This location is less than one-third mile walking distance to the Silver Lane Elementary School on Mercer Avenue. Adding to the complexity, there is a residential driveway at the southeast corner of the intersection. Without a marked crosswalk at the long crossing at the On-Ramp, pedestrians may have difficulty crossing at this location.
- The intersection of Silver Lane, Roberts Street, and East Hartford Boulevard North has crosswalks at all approaches to the intersection. These crosswalks are very long (approximately 150' across East Hartford Boulevard North), and lack a pedestrian refuge island. The crossing distance is a potential issue for vulnerable users along the corridor, because they may have difficulty safely crossing the entire intersection. A review of the signal plans for this intersection determined that the pedestrian timing is inadequate for a crossing length of 150 feet.
- At the signalized intersections with crosswalks, there are pedestrian signals, but no ADA compliant audible tones.
- While most driveways utilize aprons, Silver Lane Plaza, has curb radii in addition to concrete sidewalk continuing through the drives, making them somewhat confusing, especially for vulnerable users.
- Several street and driveway intersections lack sidewalk ramps entirely.
- Existing sidewalk ramps, shown in Figure 15, following, are inconsistent and only some are ADA compliant. They vary in condition and type. Newer ramps are concrete and include red or grey tactile warning strips. These newer ramps are generally in good condition, and comply with ADA provisions, although most employ 45-degree ramps that do not meet current CT DOT standards. Older ramps are generally not ADA compliant, because they lack tactile warning strips, are oriented incorrectly, or are graded improperly.



Concrete Sidewalk across Silver Lane Plaza Driveway, Looking West along Silver Lane



Wide Crossing at Roberts Street/East Hartford Boulevard North Intersection, Looking West along Silver Lane



No Crosswalk at Entrance to Route 15 Southbound, Residential Driveway at Left, Looking West along Silver Lane

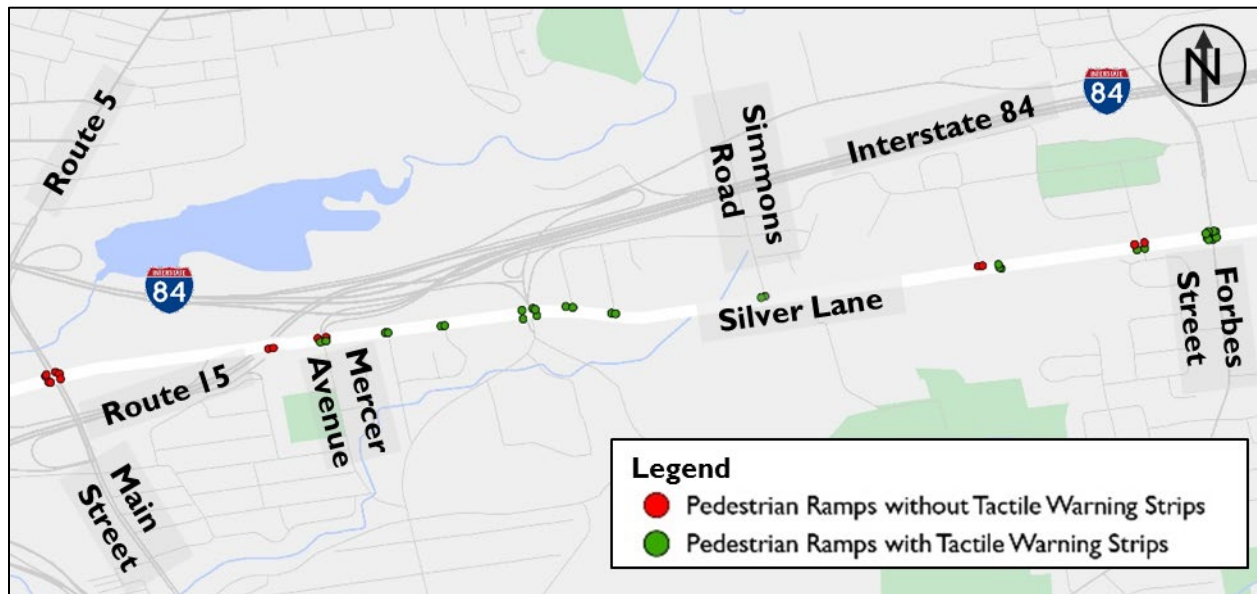


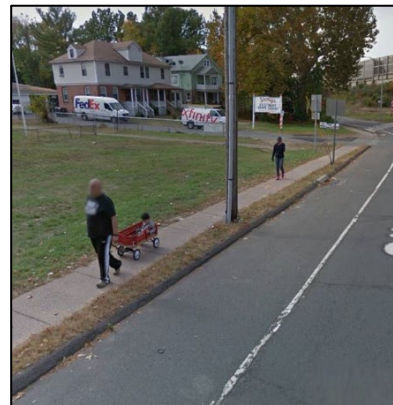
Figure 15: Pedestrian Ramps along Silver Lane

2.3.1.3 Access to Silver Lane Elementary School

At the Silver Lane Elementary School on Mercer Avenue, students either walk to school or are dropped off, as there is no school bus service. The Silver Lane Elementary School District consists of neighborhoods in approximately one-half mile radius from the school, and encompass the western portion of the study area. Silver Lane is therefore a route to school from both the east and west. Students on the west side of the school face the unmarked crossing at the intersection of the Route 15 On-Ramp and the difficult Route 15 Off-Ramp intersection. This is a concern for the neighbors, as noted in stakeholder meetings.



Children Walking Along Route 15 Off-Ramp,
Looking North toward Silver Lane



Child in Wagon along Silver Lane
between Route 15 Off-Ramp and
Mercer Avenue, Looking West along
Silver Lane

2.3.1.4 Other Pedestrian Issues

Journey to Work data (American Community Survey 5-Year Estimates 2011- 2015) for the two census tracts and block groups within the study area show that there are residents of the study area who walk to work, as presented in Figure 16. 2.6 percent (37 people) of residents within Census Tract 5105, Block Group 1, walk to work, while 2.1 percent (41 people) in Census Tract 5106, Block Group 3 walk to work. Although these are not large percentages, it does show that there are people who both live and work either within or near (walking distance) the Study Area. Note that Census Tracts and Block Groups may extend past the boundaries of the Study Area.

A census tract is a small subdivision of a municipality, generally with a population size between 1,200 to 8,000 people, with an optimum size of 4,000. Block groups are smaller units of a census tract that contain between 600 and 3,000 people, with an optimum size of 1,500 people.

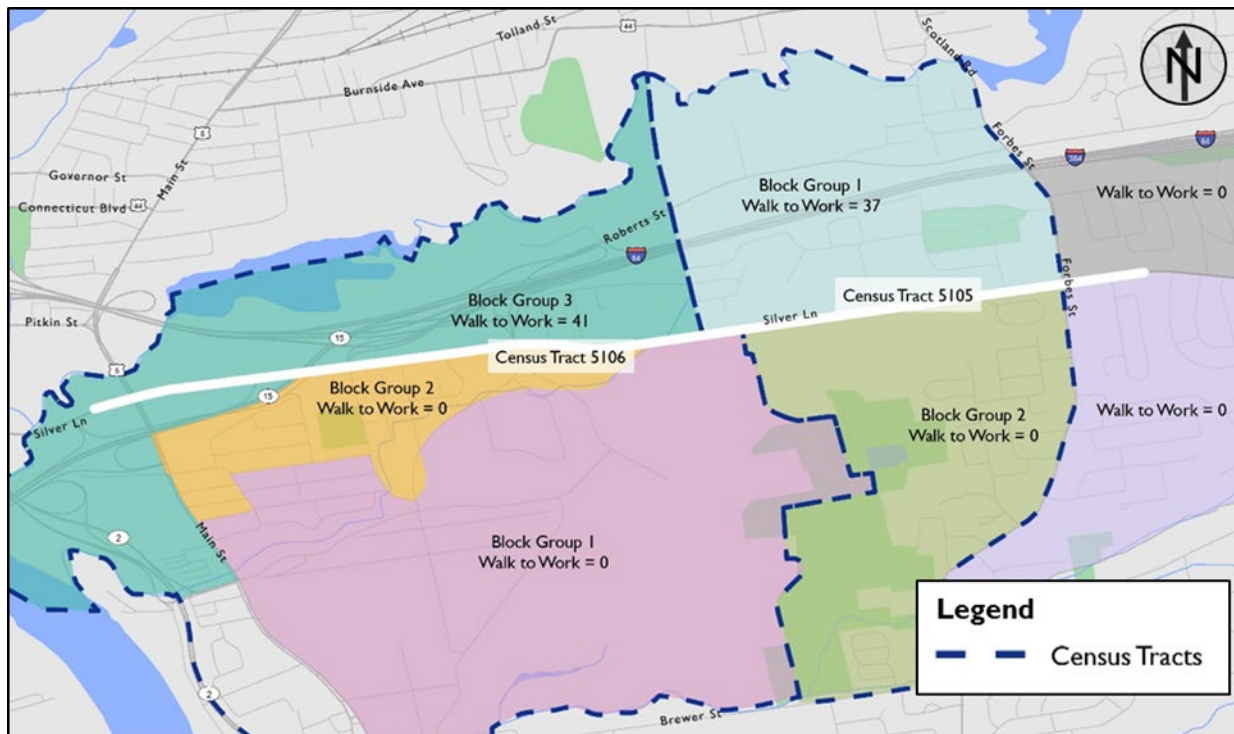


Figure 16: Journey to Work Census Tract and Block Group

According to the US Census Bureau Longitudinal Employer-Household Dynamics data, there were 1,732 jobs within the study area in 2015 (most recent available data). Twenty-four of these jobs were held by people living within the study area and 1,708 jobs were held by people outside of the study area. Of residents living within the study area, 2,017 residents commute to work outside of the Study Area, see Figure 17.

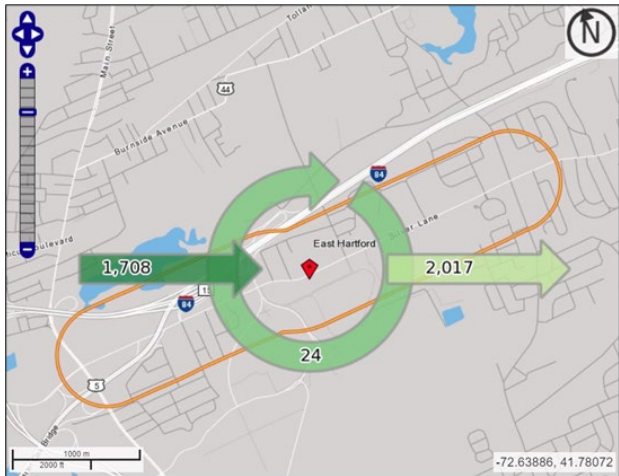


Figure 17: Study Area Commuting Patterns for Employment on Silver Lane

2.3.2 Bicycle Facilities

Although there are multi-use trails within close proximity to the Study Area, there are no bicycle facilities, such as bicycle lanes, bicycle racks, or bicycle signal detectors, on Silver Lane. Shoulders are generally too narrow to provide bicyclists with a safe riding path, and there is no signing or striping to mark shared roadway facilities.

There is a signed sharrow on Simmons Road north of Silver Lane that connects to the Charter Oak Greenway Multi-use trail at Clement Road. Although there is an opportunity to enhance non-vehicular use through connections to the transit system, there are no such facilities provided in the corridor.



Share the Road Signed Bicycle Route on Simmons Road

2.3.3 Multi-Use Trails

The Charter Oak Greenway Trail lies northeast of the study area. This paved, multi-use trail is 11 miles long, spanning between Bolton and downtown Hartford, although there is a gap between Hartford and East Hartford, within the Silver Lane Study Area, as illustrated in Figure 18. The Charter Oak Greenway crosses onto Simmons Road, within the Study Area, where it turns into a marked, on-road trail at Clement Road. The off-road trail resumes just before the Charter Oak Bridge. This trail connects parks with residential and commercial areas and is also part of the East Coast Greenway (ECG) and Riverfront Recapture Trails.



Figure 18: Existing Multi-Use Trail System

The East Coast Greenway has a signed, on-road route that runs along Forbes Street on the eastern end of the Study Area. This trail travels southwest to Brewer Street (on the perimeter of the Pratt & Whitney Campus), where it connects to Main Street and westward across the Charter Oak Bridge toward Hartford.

Goodwin College, south of the study area, is currently planning to expand its South Meadows Nature Trail, which will connect to the South Meadows and Putnam Bridge in Glastonbury. The South Meadows neighborhood is an industrial and commercial area of Hartford near Hartford Brainard Airport. This trail will connect to the East Coast Greenway Trail and the Riverfront Recapture Trails. This trail will be open to the public and will allow hikers, runners, cyclists, and cross-country skiers.

2.4 Transit/Commuter Systems

2.4.1 Transit Service and Operations

In the greater Hartford area, CTtransit operates local bus routes, express routes and CTfastrak, Connecticut's bus rapid transit system. Within the Study Area, Operating on Silver Lane between Main Street and Forbes Street are CTtransit Route 83 and CTfastrak Route 121. There are several CTtransit routes adjacent to Silver Lane: Route 91, which travels along Brewer Street and Forbes Street, Route 87 on Main Street, and Route 95 on Main Street. These routes are illustrated in Figure 19.



Figure 19: Bus Routes adjacent to Silver Lane Study Area

On Silver Lane, bus stops are marked with an official bus stop sign or are equipped with bus shelters. CTfastrak Route 121 stops at approximately one-third of the bus stops along the Silver Lane corridor. The location of bus stops and bus shelters are shown in Figure 20. Bus pullouts are not provided at any of the stops along Silver Lane. Many stop locations do not offer sidewalk connections to adjacent land uses that are compliant with the Americans with Disabilities Act (ADA).



Figure 20: Location of Bus Stops and Shelters in Silver Lane Study Area

All CTtransit buses are wheelchair accessible with wheelchair lifts or ramps for access by persons with disabilities. In addition, for compliance with the Americans with Disabilities Act (ADA), the Greater Hartford Transit District provides paratransit transportation services for individuals who, because of their disability, are unable to travel on the fixed route public transit service operated by CTtransit. The paratransit service is designed to provide those persons with disabilities equal access to public transportation; however, the service is limited to within $\frac{3}{4}$ (.75) mile radius of the fixed route public transit service.

2.4.1.1 CTfastrak Routes

CTfastrak Route 121 covers the entire length of Silver Lane. Route 121 operates between Manchester Community College (MCC) and downtown Hartford via Spencer Street, Silver Lane, Main Street and Connecticut Boulevard, making limited stops. From downtown Hartford, Route 121 makes limited stops along Capitol Avenue in Hartford, at CTfastrak stations Sigourney Street through Cedar Street, then express to UConn Health via Route 9 and I-84.

Route 121 operates Monday through Friday from 5 AM to 12 AM, Saturday from 5:25 AM to 12 AM and Sunday from 6:20 AM to 9:50 PM. On weekdays, Route 121 operates every 20 minutes during the AM and PM peaks, every 30 minutes from 9 AM to 3:30 PM and every 60 minutes after 8 PM. On Saturdays, the route operates every 30 minutes and on Sunday every 60 minutes.

2.4.1.2 CTfastrak Future Expansion

Beginning on August 13, 2017, the new express Route 903/913 began service between Hartford and Storrs. The route currently operates on I-84 in the high-occupancy vehicle (HOV) lanes and bypasses East Hartford. Please note that data presented in this report does not reflect any changes in ridership due to this new route.



CTfastrak on Silver Lane

Route 903/913 connects the UConn Storrs Campus with its Downtown Hartford Campus and stops at several destinations including the Buckland Hills Mall and park & ride lots along the route. Riders have the ability to connect to the CTfastrak bus network in Hartford, as well as the Hartford Line commuter rail system, which provides train service between New Haven, Hartford and Springfield. The bus route has been marketed to students, faculty, and all UConn students are eligible to ride the bus at no charge by showing their student ID and a pass obtained through the U-Pass Program. There are several other colleges and universities that are participating in the program. Route 903/913 runs approximately hourly between 6 AM and 12 AM during the week and reduced service on the weekend.

CTDOT recently completed the CTfastrak East Expansion Study. While the final report has not yet been published at the time of writing, information materials are available on the study's website (<https://www.cttransit.com/about/about-ctfastrak/ctfastrak-expansion-study>). The study team coordinated with CTDOT during the development of alternatives and the recommendations presented in Section 4 are consistent with the CTfastrak East Expansion Study.

2.4.1.3 CTtransit Local Routes

Route 83 starts in Hartford at Union Station and continues through downtown Hartford, over the Bulkeley Bridge to East Hartford, where it continues via Connecticut Boulevard, Main Street, and Silver Lane east to Manchester, where the route turns on Main Street and branches into A, B, C, D or E. Branch A and B terminate at Manchester Industrial Park; Branches C, D and E turn around by the Shoppes at Buckland Hills. Route 83 is a connector between routes traveling on Main Street / Route 5 (Route 87 and 95) and Forbes Street (Route 91).

During weekdays and Saturday, Route 83 operates between 5 AM and 11:30 PM and on Sundays from 7 AM to 8:30 PM with limited frequency. During weekday peak hours, the route operates with 20 minute intervals and off-peak with 30 minute intervals; in the extended evening hours after 7PM, the bus arrives hourly. On Saturdays, the route operates every 40 minutes until 6:30 PM, after which it operates on an hourly schedule, with last bus at 11 PM. On Sunday, there are only a total of 12 trips, operating roughly every hour. It should be noted that on Saturday and Sunday, the routes have limited stops and branches A and B to Manchester Industrial Park are not in service.

Route 87 operates between Downtown Hartford and East Hartford's southeast edge, serving Pratt & Whitney, East Hartford High School, Gov. William Pitkin Elementary School, and Two Rivers Magnet Middle School. In East Hartford, the route starts on the Bulkeley Bridge and continues via Connecticut Boulevard, Main Street, Brewer Street, Forbes Street, Forest Street, and Oak Street.

On weekdays, there are 10 trips in each direction and 5 trips on Saturday. There is no service on Sunday. On weekdays during peak hours the bus operates every half hour, off-peak operation is hourly, and the Saturday schedule is every two hours between 9:20 AM and 5:30PM.

Route 91 operates from Wethersfield, through Glastonbury and East Hartford, to Manchester. The segment in East Hartford, starts on Route 5 (Main Street) and continues via Brewer Street, Forbes Street, and Route 44 (Burnside Avenue). During weekdays the route operates hourly from 6 AM to 11 PM and on Saturday, it operates hourly from 7 AM to 11 PM. Sunday service is limited to hourly operation from 8 AM to 9 PM.

Route 95 operates from downtown Hartford to Route 5 (Main Street) and travels south to Pratt & Whitney, where it branches into several spurs that alter the path of the main route depending on time frame or even weather conditions. (During adverse weather conditions, if Handel, Cambridge or Sutton Streets are inaccessible buses may divert to Maple and travel via 95-C alignment.) The four spurs are: 95-A a connection to O'Connell Drive, 95-H a connection to Hubbard Street in Glastonbury, 95-P for the Putnam Bridge that allows the route to travel on Route 5 (Main Street) instead of traversing through local roads in Glastonbury and East Hartford, and the last spur is 95-C that coincides and connects with spur 95-P.

On weekdays, the route operates at roughly 30 minute intervals between 5:30 AM and 7:30PM, and then hourly until 12 AM. On Saturdays the route operates at 40 minute intervals between 6:30 AM and 11:30 PM and on Sundays, the route is limited to 12 trips between 7 AM and ends at 8 PM.

2.4.1.4 Bus Fares

Fares for CTtransit routes in East Hartford (within Zone A/Zone I) are \$1.75 for adults, \$1.40 for youth, and \$0.85 for seniors and persons with disabilities. Ten rides can be purchased for \$15.75 and passes are available in the following denominations: 2 hours for \$1.75, 1 day for \$3.50, 3 day for \$8.75, 5 day for \$14.00, 7 day for \$19.25, and 1 month for \$63.00. Express routes (Zone 2) are \$3.20 for a one-way fare. Table 7, below, illustrates the fare structure for local bus services.

Table 7: Bus Fare Structure

Local Bus Fare	Zone	Fare
Cash (Regular)	Zone A / Zone I	\$1.75
Cash (Youth)	Zone A / Zone I	\$1.40
Cash (Senior)	Zone A / Zone I	\$0.85
10-Ride Ticket (Regular)	Zone A / Zone I	\$15.75
10-Ride Ticket (Youth)	Zone A / Zone I	\$12.60
10-Ride Ticket (Senior)	Zone A / Zone I	\$7.65
Children (Age 4 and Under, 3 Child Max.)	Zone A / Zone I	Free
Transfers within Two Hours	Zone A / Zone I	Free
All-Day Pass	Zone A / Zone I	\$3.50
2-Hour Pass	Zone A / Zone I	\$1.75
3-Day Pass	Zone A / Zone I	\$8.75
5-Day Pass	Zone A / Zone I	\$14.00
7-Day Pass	Zone A / Zone I	\$19.25
31-Day Pass (Regular)	Zone A / Zone I	\$63.00
31-Day Pass (Senior)	Zone A / Zone I	\$30.60

2.4.1.5 Ridership Data

Of all the routes adjacent to the Study Area, Route 83 has the highest ridership in the corridor with 2,225 average daily riders in 2015. This ridership is much higher than other routes in the corridor. The average weekday ridership in 2015 on CTfastrak Route 121 was 1,310 riders with growing ridership since the route's inception.

On Route 87, the average daily ridership peaks at approximately 320 riders, and on the weekend, it drops to 30-50 total riders per day. On Route 91, due to limited service and demand, the weekday average is 385 riders. The ridership had decreased but has remained steady since 2014. This drop is likely the result of the introduction of CTfastrak that facilitates a more frequent connection to the Manchester area. On Route 95, the average daily ridership is approximately 1,255 in 2015. A summary of average weekday ridership is provided in Table 8, following.

Table 8: Average Weekday Ridership by Route (2014 – 2015)

Route	Route Type	2015 Average Daily Ridership	2014 Average Daily Ridership
83	Local	2,225	2,045
87	Local	320	305
91	Local	385	505
95	Local	1,255	1,630
121	CTfastrak	1,310	Not in Service

On Route 83 and 121, there are 64,200 monthly average riders on these two routes: 37,125 on Route 83 and 27,075 on Route 121. Figure 21, below, illustrates ridership on Route 121 and Route 83 by month. When evaluating the data based on stops, the highest boarding or alighting is observed at the following four stops on Route 83:

- Market Street & Constitution Plaza in Hartford (430 on average weekday)
- Walmart & Buckland Hills Drive (100 on average weekday)
- Main Street & Connecticut Boulevard or in opposite direction Main Street & Central Avenue in East Hartford (90 on average weekday)
- Manchester Community College (65 on average weekday)

For Route 121 the pattern is similar to Route 83. The top destinations are:

- Manchester Community College (230 on average weekday)
- Main Street & Travelers (120 on average weekday)
- Main Street & Connecticut Boulevard or in opposite direction Main Street & Central Avenue in East Hartford (65 on average weekday)

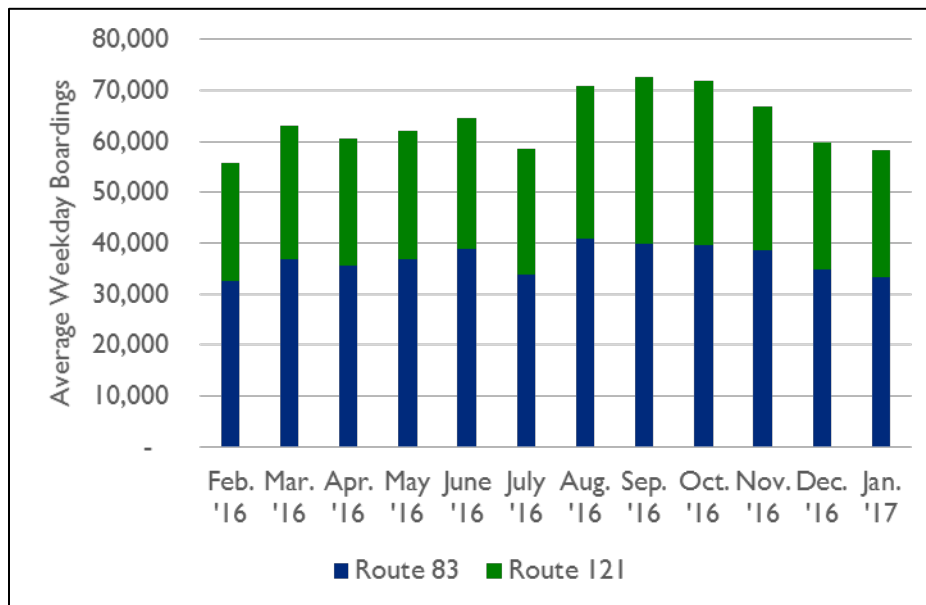


Figure 21: Average Weekday Boardings by Month for Routes 83 and 121

2.4.2 Park & Ride Facilities

There are two Park & Ride lots near the Silver Lane Study Area. Both of these lots are paved and lighted. There is also a bus shelter at both sites. To the west of the Study Area, there is a 255-space Park & Ride lot on Main Street in East Hartford near the Route 5/15 on- and off-ramps. The lot is served by CT*transit* Routes 87 and 95. The average utilization of this lot is nearly 30% (CT Open Data Portal). The other is in Manchester on Spencer Street, near the on- and off-ramps for I-84 / I-384. There are approximately 245 parking spaces. The average utilization of this lot is nearly 30% (CT Open Data Portal). This lot is served by CT*transit* Routes 83 and 85 and CT*fastrak* Route 121.

3. FUTURE CONDITIONS ASSESSMENT

The purpose of the future conditions assessment was to evaluate the potential for economic development within the study area and to estimate potential impacts to the transportation system in the **future design year** of 2040. The understanding of the effects potential development would have on traffic growth, traffic operations and mobility in the Silver Lane corridor allows local, regional and state officials to make informed decisions about land use proposals and transportation improvements within the corridor.

Future Design Year: Planning projects look at how development is expected to progress over a 20-year planning horizon. This ensures that transportation recommendations account for future growth.

3.1 Future Development Potential

Future economic development within the study corridor was assessed under two scenarios, base and build, as defined below:

Base: Considers ambient growth in traffic from development in and around the study corridor that will occur independently of actions taken as a result of this study.

Build: Considers additional development concepts identified by the study team as part of the vision for the corridor.

3.1.1 Base Development Scenarios

In order to compile expected developments for the base scenario, the study team worked closely with the Silver Lane Advisory Committee and local stakeholders to identify developments planned in and around the study corridor. The identified developments are documented in Table 9, below, and Figure 22, following. While development proposals do not always come to fruition as originally intended, the identified developments represented the current thinking of the Town of East Hartford for the potential development or redevelopment of these properties. It is reasonable to conclude that if any of the proposed developments did not move forward, the Town would work with developers to pursue similar replacement developments at these sites. Two base scenarios were developed, reflecting two potential scenarios at Rentschler Field. The two scenarios are identified as Base 1 and Base 2. The two sites other than Rentschler Field would have the same development type and scale in both scenarios.

Table 9: Base Scenario Developments

Development Site	Use	Notes
Convenience Store	Small grocery store and gas station	5,000 sq. ft. building with 10 vehicle-fueling positions
Rentschler Field (1)	Mixed retail and food / beverage	Total of 282,000 sq. ft. developed as an outdoor outlet mall
Rentschler Field (2)	Commercial / industrial	550,000 sq. ft. of manufacturing likely part suppliers for UTC / Pratt & Whitney
Silver Lane Plaza	Retail	Assumes increase in occupancy from approximately 25% to 85% by the future year (2040)

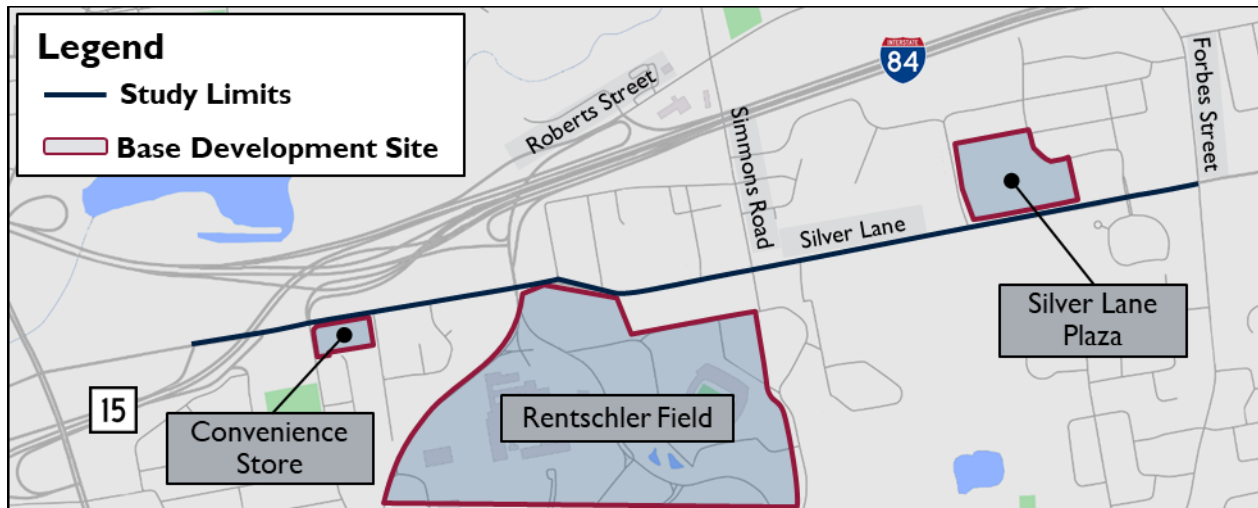


Figure 22: Base Scenario Developments

3.1.2 Build Development Scenarios

The study team collaborated with the BAR Grant consultant and the Silver Lane Advisory Committee to identify potential developments as part of the Build Scenario. The developments are listed in Table 10, below, and illustrated in Figure 23, following. The Build Scenario includes these developments as well as those included in the Base Scenario.

Table 10: Build Scenario Developments

Development Site	Use	Notes
Silver Lane at Warren Drive	Retail	Small-scale, neighborhood-oriented retail. 13,750 sq. ft.
Rentschler Gateway West	Mixed use / retail	40,000 sq. ft. of retail added to existing residential and commercial developments
825 Silver Lane	Commercial / grocery store	22,000 sq. ft. of retail
Showcase Cinemas	Multi-family residential use (rezoning required)	260 residential units, with mix of townhomes (32 units) and three-story apartment buildings (228 units).
Futtner Farm Properties	Commercial retail & residential	20,000 sf of commercial retail and 86 townhomes.

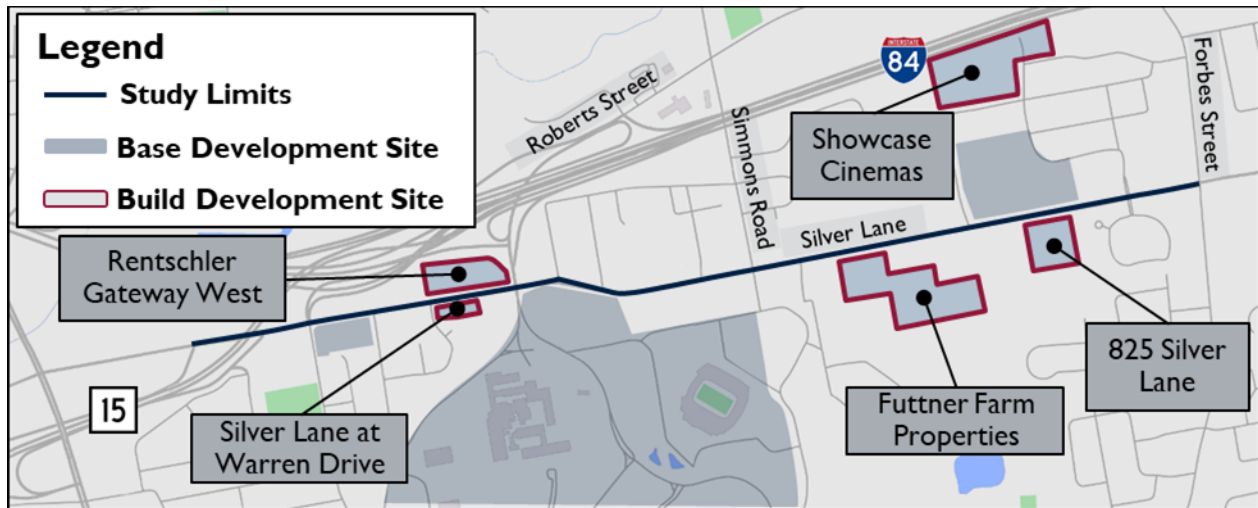


Figure 23: Build Scenario Developments

3.2 Future Traffic Forecasts

The Capitol Region Council of Governments (CRCOG) developed the future (2040) traffic forecasts for the Silver Lane study area using their CRCOG-maintained travel demand model. The travel demand model is a complex planning tool used to understand travel behavior and trips. Trips are assigned to the network based on the shortest calculated travel times between trip origins and destinations. As traffic volumes increase causing decreasing speeds on roadways in the network, the model reassigns trips according to the shortest travel time for each trip. The number of trips on the network changes as demographic and land use factors (such as population, employment, and number of households) change over time with development in the region.

3.2.1 Base Scenarios

CRCOG used the travel demand model to generate weekday PM peak hour and weekend midday (MD) peak hour traffic volumes for the 2040 Base 1 and Base 2 scenarios. The traffic analysis included the two unsignalized intersections at the Route 15 ramps, as well as the seven signalized intersections within the Study Area. Traffic growth rates for the Base scenarios at the nine study intersections are shown in Figure 24 and Figure 25 and tabulated in Table I I, following.

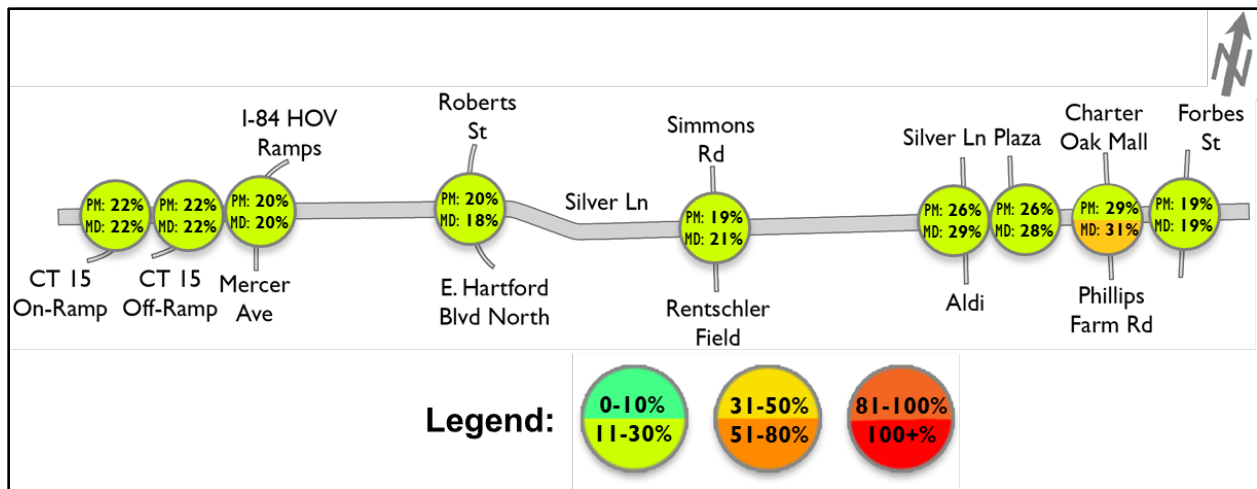


Figure 24: Base 1 Weekday Afternoon (PM) and Weekend Midday (MD) Growth Rates to 2040

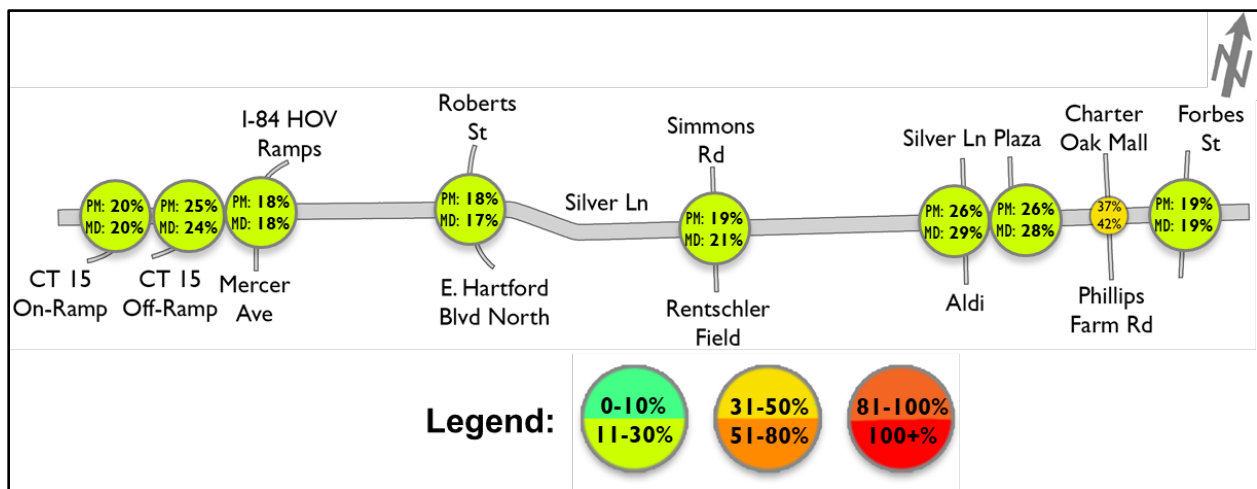


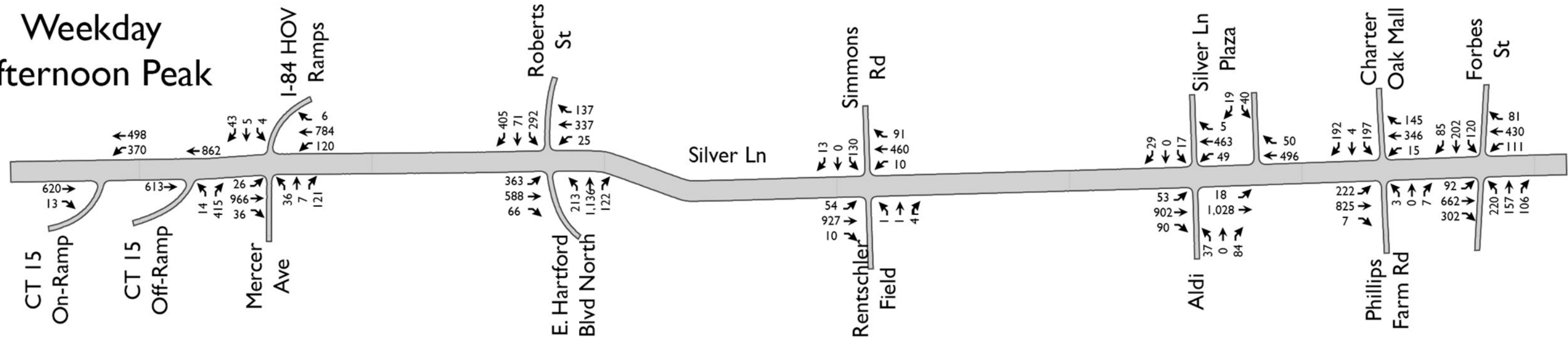
Figure 25: Base 2 Weekday Afternoon (PM) and Weekend Midday (MD) Growth Rates to 2040

As shown in Figure 24, Figure 25 and Table 11, peak hour traffic volumes are expected to grow between 18% and 31% by 2040. Throughout most of the corridor, there is a steady growth rate of about 20%, which amounts to an additional 250 to 350 vehicles per hour. The two Base scenario forecasts proved to be substantially similar. Since Base 1 had generally higher traffic volumes at most study intersections, it was selected for operational analysis and use in creating the Build forecast.

Table 11: Comparison of Existing (2017) and Future (2040) Base Scenario Growth and Peak Hour Traffic Volumes

Location	Volume - Existing (2017)		Volume - Base 1 (2040)		Growth - Base 1 (2040)		Volume - Base 2 (2040)		Growth - Base 2 (2040)	
	PM	MD	PM	MD	PM	MD	PM	MD	PM	MD
Route 15 On-Ramp	1,230	953	1,501	1,160	22%	22%	1,473	1,139	20%	20%
Route 15 Off-Ramp	1,562	1,150	1,904	1,400	22%	22%	1,950	1,428	25%	24%
Mercer Ln/ HOV	1,798	1,342	2,156	1,607	20%	20%	2,128	1,586	18%	18%
Roberts St / Rentschler	3,133	1,919	3,755	2,264	20%	18%	3,704	2,241	18%	17%
Simmons Rd / Rentschler	1,430	1,092	1,701	1,325	19%	21%	1,704	1,325	19%	21%
Aldi / Silver Lane Plaza 1	1,371	1,103	1,730	1,428	26%	29%	1,723	1,423	26%	29%
Silver Lane Plaza 2	1,293	1,053	1,631	1,351	26%	28%	1,626	1,347	26%	28%
Charter Oak Mall / Phillips Farm	1,488	1,361	1,921	1,781	29%	31%	1,927	1,780	30%	31%
Forbes St	2,159	1,362	2,568	1,617	19%	19%	2,565	1,615	19%	19%

Weekday Afternoon Peak



Weekend Midday Peak

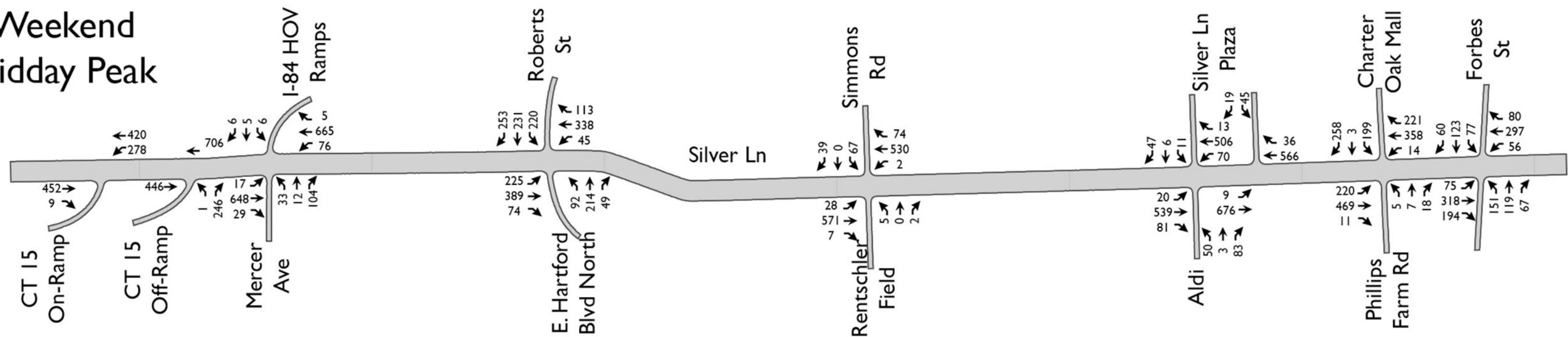


Figure 26: Base Scenario Future (2040) Weekday Afternoon (Top) and Weekend Midday (Bottom) Peak Hour Turning Movement Count

3.2.2 Build Scenarios

CRCOG used the travel demand model to generate weekday PM peak hour and weekend midday (MD) peak hour traffic volumes for the 2040 Build scenario as described in Section 3.1.2. Traffic growth rates for the Build scenario at the nine study intersections are shown in Figure 27, and Table 12, following.

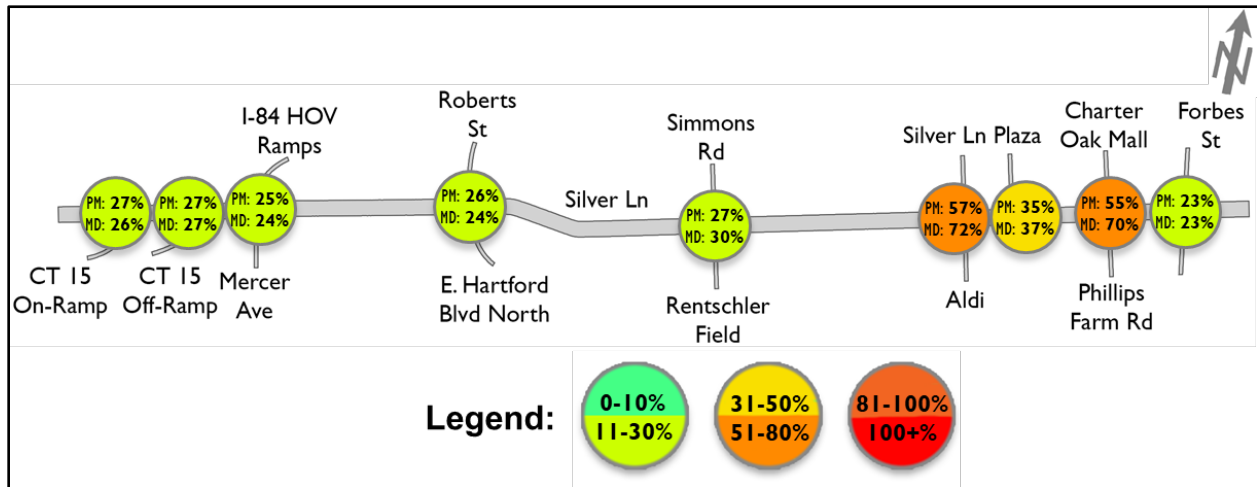


Figure 27: Build Scenario Weekday Afternoon (PM) and Weekend Midday (MD) Growth Rates to 2040

Adding additional development increases the traffic growth rates by as much as 72%. Growth is especially high in the eastern end of the corridor where most of the potential development takes place. West of Roberts Street, volumes only increase by about 25%, which amounts to about 300 to 450 vehicles per hour. The intersections with the largest increases in traffic, Silver Lane Plaza and Charter Oak Mall, are access points for the envisioned developments.

It is important to note that any increase in development density in Silver Lane corridor will occur gradually over time and will be facilitated by private developers. The rate at which development occurs, where it occurs, and to what intensity, is unpredictable and will be a function of many factors including real estate market conditions, changing population and demographics, limitations on utility capacity and infrastructure, regulatory controls (such as zoning regulations), and local and state economic policies (such as tax incentives). It is also important to note that the Silver Lane development reflected in the Build Scenario is only one potential outcome and that many other scenarios could be considered reasonable.

*Table 12: Comparison of Existing (2017) and Future (2040)
Build Scenario Growth and Peak Hour Traffic Volumes*

Location	Volume - Existing (2017)		Volume - Build (2040)		Growth - Build (2040)	
	PM	MD	PM	MD	PM	MD
Route 15 On-Ramp	1,230	953	1,556	1,202	27%	26%
Route 15 Off-Ramp	1,562	1,150	1,980	1,455	27%	27%
Mercer Ln/ HOV	1,798	1,342	2,244	1,669	25%	24%
Roberts St / Rentschler	3,133	1,919	3,949	2,380	26%	24%
Simmons Rd / Rentschler	1,430	1,092	1,819	1,417	27%	30%
Aldi / Silver Lane Plaza 1	1,371	1,103	2,149	1,899	57%	72%
Silver Lane Plaza 2	1,293	1,053	1,746	1,446	35%	37%
Charter Oak Mall / Phillips Farm	1,488	1,361	2,311	2,311	55%	70%
Forbes St	2,159	1,362	2,662	1,677	23%	23%

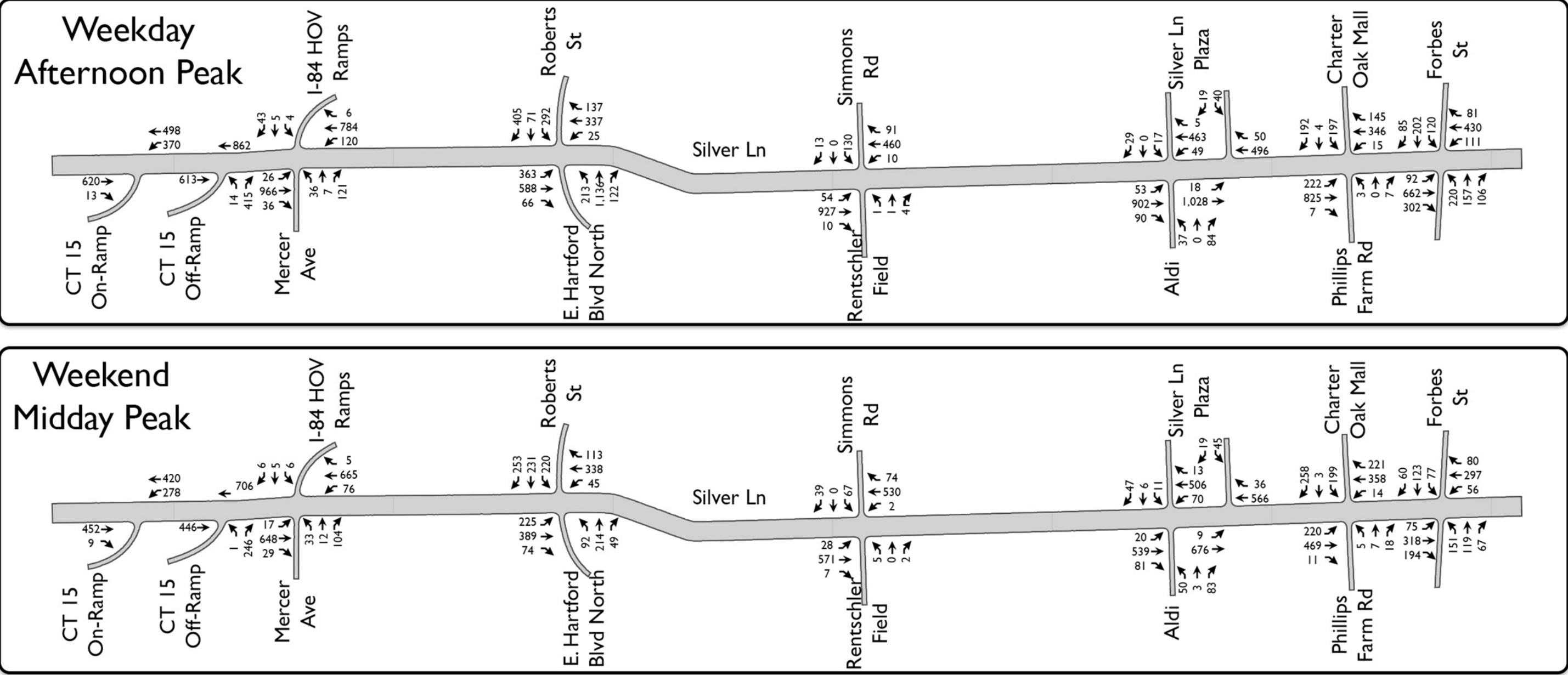


Figure 28: Build Scenario Future (2040) Weekday Afternoon (Top) and Weekend Midday (Bottom) Peak Hour Turning Movement Count

3.3 Future Traffic Operations

The study team evaluated traffic operations in the Silver Lane Corridor Study for the Base and Build scenarios by determining levels of service (LOS) at corridor intersections. As previously discussed in Section 2.1.4.4, LOS is based on the computed average control delay (in seconds per vehicle) for individual movements at signalized and unsignalized intersections, and for each signalized intersection as a whole. For this study corridor, LOS D or better is considered acceptable for intersections. The traffic analysis assumed that traffic signal cycle lengths and timings would be optimized for future traffic conditions, but that the existing number of lanes and signal phasing would remain. Queues were also analyzed in order to test whether they would grow to excessive lengths and block adjacent intersections.

3.3.1 Base Scenarios

The results of the traffic operational analysis for the Base scenario (No Build) is illustrated in Figure 29, and Table 13, following. As noted previously, the Base scenario is the previously identified “Base 1” Scenario.

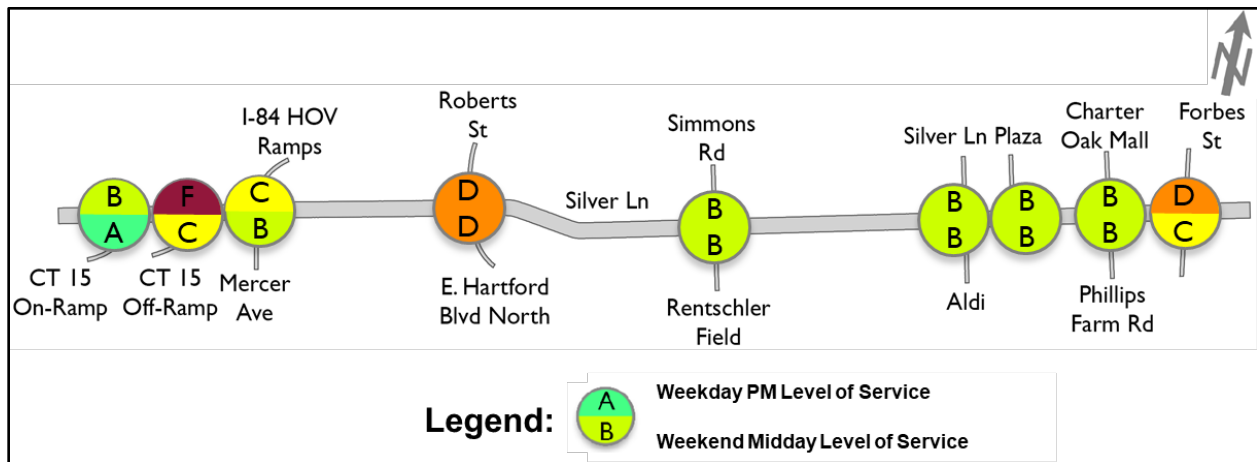


Figure 29: Base (No Build) Future (2040) Traffic Operations

Table 13: Base (No Build) Future (2040) Level of Service Summary

Intersection / Approach	Available Storage	Weekday Afternoon Peak			Weekend Midday Peak		
		LOS	Delay (sec / veh)	95% Queue	LOS	Delay (sec / veh)	95% Queue
Silver Lane at CT 15 On-Ramp (Unsignalized)							
Silver Lane Eastbound	781	A	0	0	A	0	0
Silver Lane Westbound	759	B	12.3	59	A	9.8	30
Overall							
Silver Lane at CT 15 Off-Ramp (Unsignalized)							
Silver Lane Eastbound	759	A	0	0	A	0	0
Silver Lane Westbound	463	A	0	0	A	0	0
CT 15 Off-Ramp Northbound	1125	F	140	468	C	16.8	63
Overall							
Silver Lane at Mercer Avenue / I-84 HOV Ramps (Signalized)							
Silver Lane Eastbound	463	D	47.7	1373	B	18.3	606
Silver Lane Westbound	2085	C	23	678	B	10.7	494
Mercer Avenue Northbound	670	D	51.1	74	D	39.8	80
I-84 HOV Off-Ramp Southbound	630	D	42.9	23	D	37.7	30
Overall		C	29.9		B	14.8	
Silver Lane at Roberts Street / East Hartford Boulevard North (Signalized)							
Silver Lane Eastbound	260/2085	F/E	192.9/66.9	301/418	E/D	64.0/48.7	138/215
Silver Lane Westbound	160/2556	E/E	72.5/74.7	53/234	E/E	68.6/58.5	79/200
East Hartford Boulevard North Northbound	150/200	E/C	61.0/30.6	128/322	E/C	60.0/21.2	67/61
Roberts Street Southbound	150/268	D/B	54.0/16.3	173/28	E/B	65.8/17.2	139/79
Overall		D	54.2		D	37.9	
Silver Lane at Simmons Road / Rentschler Field (Signalized)							
Silver Lane Eastbound	2540	B	15.5	428	B	11.1	192
Silver Lane Westbound	2556	B	10.2	176	B	10.6	185
Rentschler Field Access Drive Northbound	982	C	25	11	C	20.6	12
Roberts Street Southbound	825	B	17.9	109	B	12.2	65
Overall		B	14.0		B	11.0	
Silver Lane at Silver Lane Plaza / Aldi (Signalized)							
Silver Lane Eastbound	2556	B	18.9	500	A	9.4	193
Silver Lane Westbound	394	B	10.3	39	B	14.5	45
Aldi Drive Northbound	450	D	38.1	48	D	43.9	61
Silver Lane Plaza Drive Southbound	463	D	43.9	57	D	48	74
Overall		B	16.5		B	14.7	
Silver Lane at Silver Lane Plaza (Signalized)							
Silver Lane Eastbound	394	A	2.8	44	A	1.8	38
Silver Lane Westbound	1041	C	26.7	220	C	33.1	259
Silver Lane Plaza Drive Southbound	467	D	38	51	D	38.7	55
Overall		B	11.7		B	17.2	
Silver Lane at Charter Oak Mall / Phillips Farm Road (Signalized)							
Silver Lane Eastbound	1041	B	15.7	245	B	13.2	153
Silver Lane Westbound	769	B	18.2	105	B	18.9	109
Aldi Drive Northbound	594	A	0	0	B	12.4	24
Silver Lane Plaza Drive Southbound	549	C	30.2	164	C	29.8	166
Overall		B	14.9		B	13.3	
Silver Lane at Forbes Street (Signalized)							
Silver Lane Eastbound	769	D	41.7	748	C	24.2	252
Silver Lane Westbound	1106	C	34.9	295	C	25.1	185
Forbes Street Northbound	1073	E	57	356	C	29.3	217
Forbes Street Southbound	978	E	63.6	453	D	36.7	224
Overall		D	41.7		C	25.7	

Under the Base scenario, traffic can be expected to flow acceptably through most of the intersections in the Study Area despite the moderate growth in traffic volumes.

Route 15 exiting traffic, which is controlled by a stop sign, will experience a LOS F and a 468 foot long queue during the weekday PM peak hour because traffic volumes will be high enough that vehicles exiting the freeway will have difficulty finding gaps in the free-flowing Silver Lane traffic. Preventing these queues from backing up to the freeway is an important safety consideration.

Although LOS will be acceptable, the queue length for eastbound Silver Lane at Mercer Street will exceed the available distance, and block the Route 15 off ramp during both peak hours. LOS E or F will be experienced on several lane groups at Roberts Street, and queues will exceed storage capacity in several directions. At Forbes Street, the northbound and southbound approaches will experience LOS E during the weekday PM peak, although queuing will not be excessive.

3.3.2 Build Scenario

The results of the traffic operational analysis for the Build scenario is illustrated in Figure 30 and Table 14, following. These results optimize signal timing but do not introduce signal phasing changes or physical improvements to the roadways.

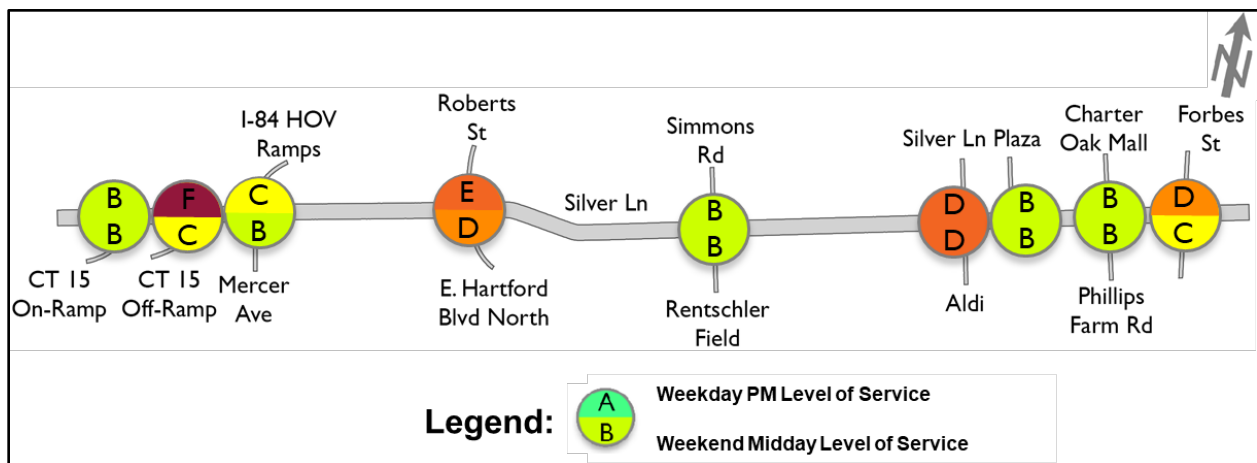


Figure 30: Build Future (2040) Traffic Operations

The Route 15 Off-Ramp continues to operate at LOS F, with queues approaching 600 feet in length and delays of approximately 3.5 minutes during the weekday PM peak hour.

Eastbound queues at Mercer Street will block the Route 15 off ramp, and will extend to the Route 15 entrance ramp during the weekday PM peak hour.

Roberts Street will operate at an overall intersection LOS E, with most lane groups at LOS E or F during both peak hours, and many lanes exceeding their storage capacity.

Although the dual signals at Silver Lane Plaza will operate reasonably well on Silver Lane, northbound and southbound driveway traffic from Aldi and from the Plaza will experience 3 to 4 minute delays (LOS F) during both peak hours.

Table 14: Build Future (2040) Level of Service Summary

Intersection / Approach	Available Storage	Weekday Afternoon Peak			Weekend Midday Peak		
		LOS	Delay (sec / veh)	95% Queue	LOS	Delay (sec / veh)	95% Queue
Silver Lane at CT 15 On-Ramp (Unsignalized)							
Silver Lane Eastbound	781	A	0	0	A	0	0
Silver Lane Westbound	759	B	12.9	64	B	10	32
Overall							
Silver Lane at CT 15 Off-Ramp (Unsignalized)							
Silver Lane Eastbound	759	A	0	0	A	0	0
Silver Lane Westbound	463	A	0	0	A	0	0
CT 15 Off-Ramp Northbound	1125	F	196.6	576	C	18.3	72
Overall							
Silver Lane at Mercer Avenue / I-84 HOV Ramps (Signalized)							
Silver Lane Eastbound	463	D	40.1	1263	B	19.2	735
Silver Lane Westbound	2085	D	46.9	659	B	11.2	530
Mercer Avenue Northbound	670	D	54.7	78	D	39.8	70
I-84 HOV Off-Ramp Southbound	630	D	43.5	23	D	36.3	26
Overall		C	27.8		B	15.5	
Silver Lane at Roberts Street / East Hartford Boulevard North (Signalized)							
Silver Lane Eastbound	260/2085	F/E	197.1/68.0	326/438	E/D	65.6/48.2	148/226
Silver Lane Westbound	160/2556	E/E	72.5/78.4	53/245	E/E	72.7/59.6	85/205
East Hartford Boulevard North Northbound	150/200	E/C	59.9/34.3	128/349	E/C	60.3/22.1	67/63
Roberts Street Southbound	150/268	D/B	51.5/17.6	176/33	E/B	68.0/17.1	154/77
Overall		E	57		D	38.9	
Silver Lane at Simmons Road / Rentschler Field (Signalized)							
Silver Lane Eastbound	2540	B	15.3	496	B	11.3	216
Silver Lane Westbound	2556	A	9.7	186	B	10.7	198
Rentschler Field Access Drive Northbound	982	C	27	11	C	21.2	12
Roberts Street Southbound	825	C	20	109	B	12.8	70
Overall		B	13.9		B	11.2	
Silver Lane at Silver Lane Plaza / Aldi (Signalized)							
Silver Lane Eastbound	2556	D	38.3	594	B	11	248
Silver Lane Westbound	394	D	35.1	107	E	59.9	117
Aldi Drive Northbound	450	E	61.1	135	F	173.8	211
Silver Lane Plaza Drive Southbound	463	F	162.6	96	F	245.9	137
Overall		D	37.5		D	50.5	
Silver Lane at Silver Lane Plaza (Signalized)							
Silver Lane Eastbound	394	A	3.4	43	A	2.6	65
Silver Lane Westbound	1041	C	25.6	107	C	32.6	280
Silver Lane Plaza Drive Southbound	467	D	36.9	51	D	37.6	55
Overall		B	11.5		B	17	
Silver Lane at Charter Oak Mall / Phillips Farm Road (Signalized)							
Silver Lane Eastbound	1041	C	22.1	276	B	19.5	234
Silver Lane Westbound	769	C	27.4	147	C	29	162
Aldi Drive Northbound	594	A	0	0	B	11.7	29
Silver Lane Plaza Drive Southbound	549	C	26.9	196	C	31.6	225
Overall		B	19.8		B	17.5	
Silver Lane at Forbes Street (Signalized)							
Silver Lane Eastbound	769	D	45.3	818	C	24.8	268
Silver Lane Westbound	1106	D	45.5	313	C	25.3	190
Forbes Street Northbound	1073	E	65.3	361	C	29.3	219
Forbes Street Southbound	978	E	63.4	446	D	36.9	240
Overall		D	44.3		C	26.1	

Forbes Street will see eastbound queues backing up to Silver Lane Plaza, and northbound and southbound traffic will experience LOS E (over one minute delay) during the weekday PM peak hour.

The projected traffic volumes do not address potential increases in pedestrian or bicycle volumes within the study corridor. All signalized intersections in the corridor presently utilize exclusive pedestrian phases, where actuation of a pedestrian button stops all traffic to allow pedestrians to cross. An increase in pedestrian activity will increase the number of actuations and decrease the capacity of the intersections. Some intersections could degrade to LOS F without modifications, which could include changing to concurrent phasing, installation of pedestrian refuge islands or prohibitively expensive pedestrian overpasses to accommodate heavy peak-hour pedestrian activity. Additional street-riding bicyclists should not affect the operation of the signals, although it is noted that at present there are no detectors for bicycles.

3.4 Future Transit Outlook

As documented in Section 2.4, Silver Lane is currently served by CTtransit Route 83 and CTfastrak Route 121. Both routes connect Hartford to Manchester Community College, with CTtransit Route 83 continuing to Manchester Industrial Park and the Buckland Hills Mall.

Not all bus stops within the Study Area serve the same number of passengers. For example, the CTfastrak East Expansion Final Report, published in June 2017, notes that the Route 121 weekday ridership at the Clement Road stop is only five passengers, while the stop at Charter Oak Mall serves 39. In order to achieve higher average speeds and reliability, the CTfastrak East Expansion Final Report recommends consolidating stops, withdrawing CTfastrak service from the stops at Clement Road and Forbes Street. These stops would still be served by CTtransit Route 83. There are no proposed changes to schedules. The locations of current and proposed transit stops are presented in Figure 31.

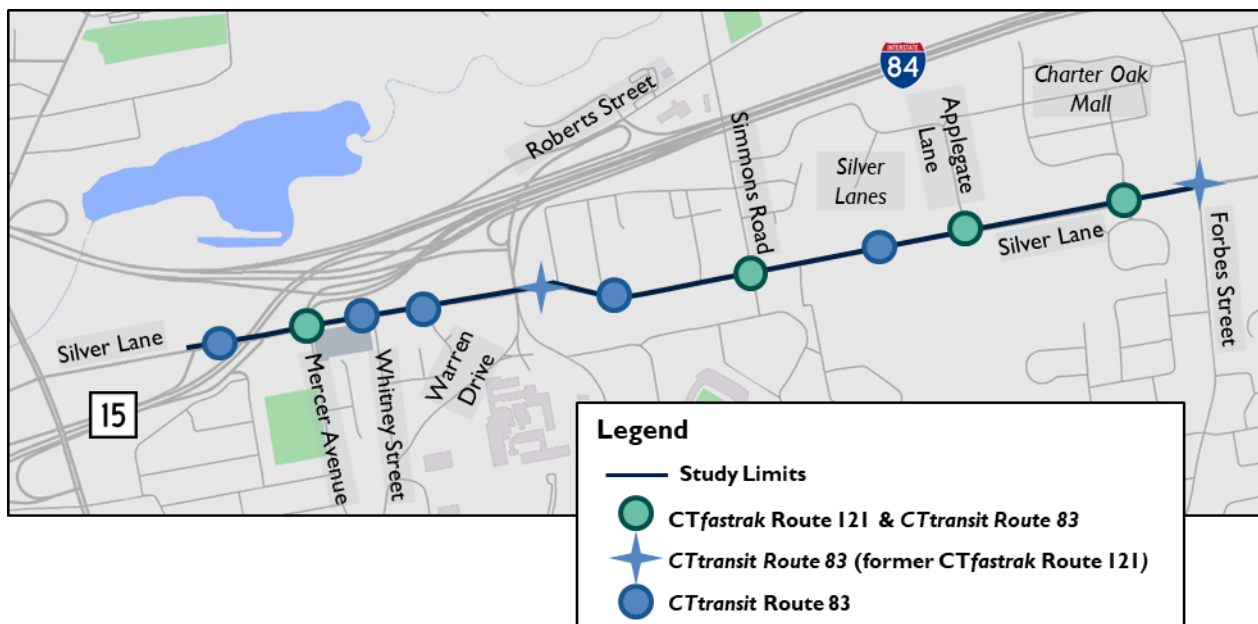


Figure 31: CTfastrak Route 121 Stop Consolidation

The frequent and well-connected transit service on Silver Lane serves as an excellent foundation for transit-oriented development along the corridor. In particular, the CTfastrak stops at Applegate Lane and Charter Oak Mall would provide mobility to the potential residential development at the former Showcase Cinema site and Futtner Farm Properties identified in the Build scenario.

4. ANALYSIS OF ALTERNATIVES AND RECOMMENDATIONS

In the summer of 2019, prior to the completion of this report, Silver Lane was reconstructed as part of CTDOT's Vendor-in-Place (VIP) pavement rehabilitation program. With the support of CTDOT, the Town of East Hartford, and the study team, several of the near-term recommendations included in this section were implemented. Notably, the roadway was reconfigured with one travel lane in each direction with a two-way left turn lane from the Route 15 ramps easterly to the Charter Oak Plaza / Phillips Farm Road intersection. When this section refers to 'existing conditions' it refers to the condition of Silver Lane prior to the VIP project.

Alternatives were developed to address the deficiencies noted in the existing conditions and future conditions assessments. The study team engaged in a collaborative and interactive process with Town of East Hartford officials, community stakeholders and the Capitol Region Council of Governments (CRCOG) to define and select alternatives as part of a comprehensive plan for the corridor. This comprehensive plan provides for improved mobility, accessibility and safety for all users. The recommendations are intended to support the findings of the Silver Lane Revitalization Plan and benefit the overall quality-of-life in East Hartford.

The evaluated alternatives and recommendations include both corridor-wide strategies as well as site-specific improvements to address individual deficiencies. The corridor-wide strategies generally aim to improve roadway and driving safety and operations, walkability, bicycling and transit use in the study area. This **Complete Streets** approach includes recommendations to:

- Improve safety at high-frequency and high-impact (severity) crash locations
- Ensure adequate intersection vehicular operations
- Provide facilities to promote and encourage active transportation uses (walking and bicycling)
- Support and Improve transit service and facilities
- Improve access for adjacent properties with respect to both safety and traffic operations
- Enhance the appearance of the Silver Lane corridor

A Complete Street is a street for everyone. It is designed to enable safe use and support mobility for all users, including people of all ages and abilities, regardless of whether they are traveling as drivers, pedestrians, bicyclists, or public transportation users. (USDOT)

4.1 Corridor-wide Recommendations

Several recommendations, particularly those affecting pedestrian, bicyclist and transit mobility, were evaluated within the context of the entire project corridor to ensure consistency throughout the corridor. The primary corridor-wide recommendations are to:

- Reconfigure Silver Lane, utilizing a road diet to more equitably allocate space on the roadway for all users
- Provide 10' sidepaths on both sides of Silver Lane to enhance bicyclist and pedestrian mobility and connect the gap in the East Coast Greenway

Summary of Corridor-Wide Recommendations

- Reconfigure Silver Lane with a road diet
- Provide 10' sidepaths
- Consolidate stops and improve transit amenities
- Relocate Overhead Utilities

- Consolidate and improve transit stop amenities along Silver Lane
- Relocate overhead utilities

A cross section of Silver Lane depicting the segment west of Roberts Street is shown in Figure 32. The segment east of Roberts Street will be able to have wider shoulders (5') due to the greater setbacks of existing development and available right-of-way.

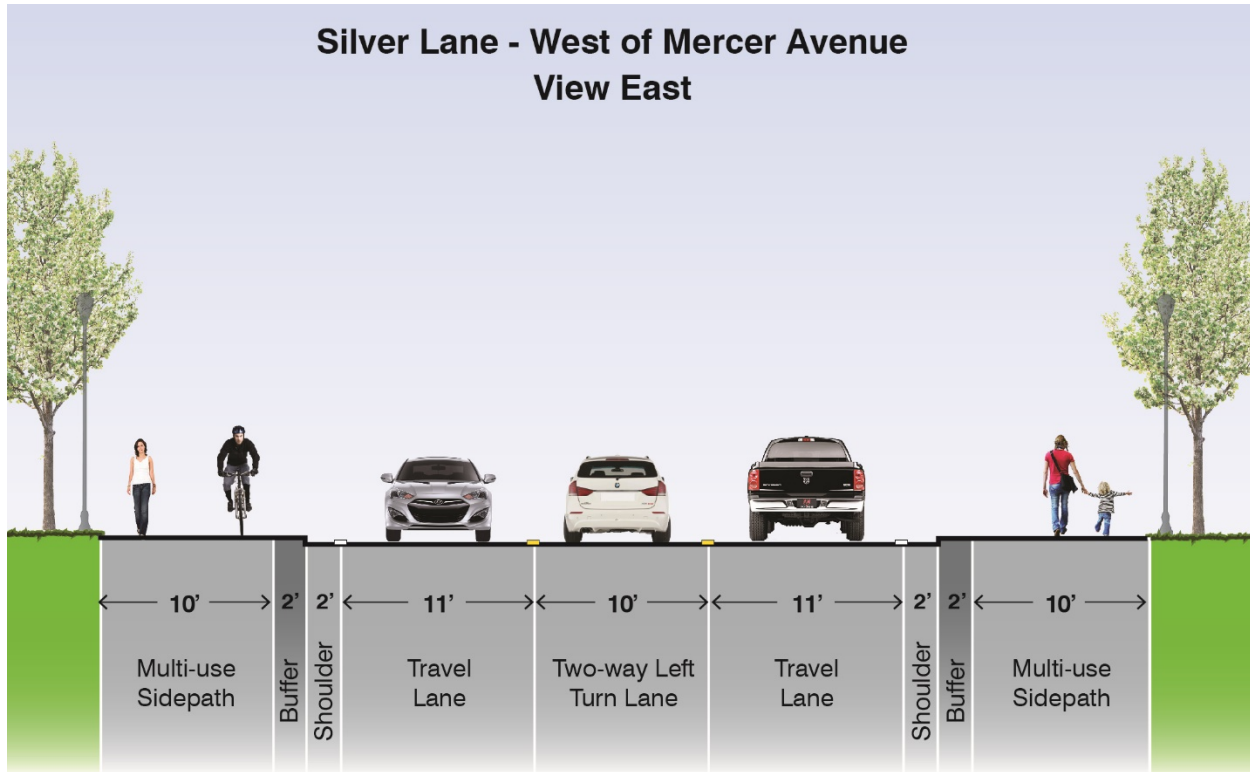


Figure 32: Silver Lane Cross Section

The following sections detail the process for identifying analyzing these specific corridor-wide recommendations. Additional, location-specific, safety and mobility improvements are included in subsequent sections.

4.1.1 Reconfigure Silver Lane with a Road Diet

Prior to the initiation of the study, Silver Lane within the study area generally consisted of three lanes west of Roberts Street / East Hartford Boulevard and four lanes east of Roberts Street / East Hartford Boulevard. The existing conditions analysis shows that traffic conditions on Silver Lane are generally acceptable, with moderate eastbound queuing at Mercer Avenue, and moderate delays at Roberts Street/East Hartford Boulevard. Early in the study process, a **road diet** was discussed as a potential way to reallocate space within the roadway to eliminate unneeded travel lanes and provide a shoulder where none presently exists. The results of the analysis of this option are presented in the following sections.

A **road diet** is generally described as "removing travel lanes from a roadway and utilizing the space for other uses and travel modes". (FHWA)

4.1.1.1 West of Roberts Street / East Hartford Boulevard

As previously noted, this segment of Silver Lane was reconstructed prior to the completion of this report. Discussion of existing conditions refers to conditions before the VIP paving project in the summer of 2019.

Vehicular Traffic Impact

Operationally, the existing three-lane section (two eastbound lanes and one westbound lane) provides adequate capacity west of Roberts Street. Although the eastbound approach to Mercer Avenue experiences some queuing during the weekday PM peak hour, the intersections operate at LOS D or better. This lane configuration, however, does not provide shelter for left turn movements in either direction, and the “Passing lane” in the eastbound direction creates a speed differential between turning and travelling vehicles, resulting in additional, often abrupt lane changes. These undesirable conditions are reflected in the elevated crash rate throughout this segment.

As a result, the study team recommends a road diet that will revise the lane configuration to consist of one travel lane in each direction with a two-way center left turn lane. This configuration provides refuge to left-turning vehicles and allows through traffic to safely bypass them. Capacity computations show that the intersections will operate well throughout this segment with the new lane configuration. Specific intersection improvements in addition to the road diet configuration are discussed separately in later sections of this report. Signalization improvements will include upgraded vehicle detection systems using video cameras rather than loop detectors to improve reliability and efficiency.

Vulnerable Users

It has been demonstrated on other projects that the employment of road diets causes vehicles to travel at a more constant, but slower speed, and removes the distractions braking and turning vehicles from the driver’s attention. Together, these factors have a positive impact on vehicular and pedestrian safety.

Bicycle Impact

West of Roberts Street, there is insufficient Right of Way to provide wide shoulders. Generally, a 2 foot width will be utilized. Bicyclists will be able to utilize other improvements, described in the following sections. The upgraded traffic signal detection systems will include the ability to detect street-riding bicyclists. In particular, this will benefit bicyclists approaching Silver Lane from the side roads.

4.1.1.2 East of Roberts Street / East Hartford Boulevard

As previously noted, this segment of Silver Lane was reconstructed prior to the completion of this report. Discussion of existing conditions refers to conditions before the VIP paving project in the summer of 2019.

As documented in the Existing Conditions Assessment, several deficiencies were noted in this segment:

- Multiple portions of the road with crash rates above 300 HMVMT
- Lack of shoulder and lack of bicycle facilities
- Narrow travel lanes
- Travel speeds in excess of the posted speed limit
- Lack of turn lanes in vicinity of unsignalized intersections with roadways and driveways

Vehicular Traffic Impact

Based on these deficiencies, the study team recommends a road diet that will revise the lane configuration to consist of one travel lane in each direction with a two-way center left turn lane. This configuration provides refuge to left-turning vehicles and allows through traffic to safely bypass them.

Capacity computations show that the intersections will operate well throughout this segment with the new lane configuration. Specific intersection improvements in addition to the road diet configuration are discussed separately in later sections of this report. Signalization improvements will include upgraded vehicle detection systems using video cameras rather than loop detectors to improve reliability and efficiency.

During Rentschler Field operations, special lane use is established to assist the movement of traffic for the event. The proposed road diet configuration will not affect the event day operations on Silver Lane.

Vulnerable Users

It has been demonstrated on other projects that the employment of road diets results in vehicles traveling at more constant, but slower speeds, and reduces the distractions of braking and turning vehicles from the driver's attention. Together, these factors have a positive impact on vehicular and pedestrian safety.

Bicycle Impact

Implementing the road diet will allow for the addition of 5 foot wide shoulders east of Roberts Street. This will provide on-road bicyclists with a safer environment for traveling on Silver Lane for those opting not to use the side paths (see below) without affecting vehicular capacity. The upgraded traffic signal detection systems will include the ability to detect street-riding bicyclists. In particular, this will benefit bicyclists approaching Silver Lane from the side roads.

4.1.2 Provide 10' Side Paths

As noted in Section 2.3, bicycle facilities are essentially non-existent throughout the corridor. Pedestrian facilities (sidewalks) are better, but inconsistent. There are many local destinations that would support these modes, and local demographics indicates a potential for significant non-vehicular use. In addition, the gap in the East Coast Greenway, previously discussed, should be addressed when formulating recommendations for the corridor. To address these needs, the study team established the following goals for bicyclist and pedestrian improvements:

- Eliminate gaps in the sidewalk network
- Ensure that Americans with Disabilities Act (ADA)-compliant infrastructure (pedestrian ramps, crosswalks, signal heads and pushbuttons) is provided throughout the corridor
- Provide safe and comfortable facilities for bicyclists, including recreational users
- Establish a multi-use pathway to connect the gap in the East Coast Greenway

Corridor-wide improvements are discussed in this section, and location-specific improvements are addressed in following sections of this report. Several alternatives were considered to address the pedestrian/bicycle goals in the corridor, including bike lanes with sidewalks, buffered bike lanes with sidewalks and side paths.

Bicycle Lane: A portion of the roadway that has been designated by signage and pavement markings for the preferential or exclusive use of bicycles. (NACTO)

Buffered Bicycle Lane: Conventional bicycle lane paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and / or parking lane. (NACTO)

Side Path: A designated path (typically bi-directional), for single use or shared use (i.e. bicyclists and pedestrians allowed) immediately adjacent to and parallel with (but separated from) the roadway. (USDOT)

Initially the study team proposed providing a 10' side path on the north side of Silver Lane from Simmons Road westerly to the study limits and a bicycle lane and sidewalk on the south side of Silver Lane from the western study limits to Roberts Street. Buffered bike lanes and sidewalks were proposed on the north side from Simmons Road to Forbes Street and on the south side from Roberts Street to Forbes Street. This alternative is presented in Figure 33.

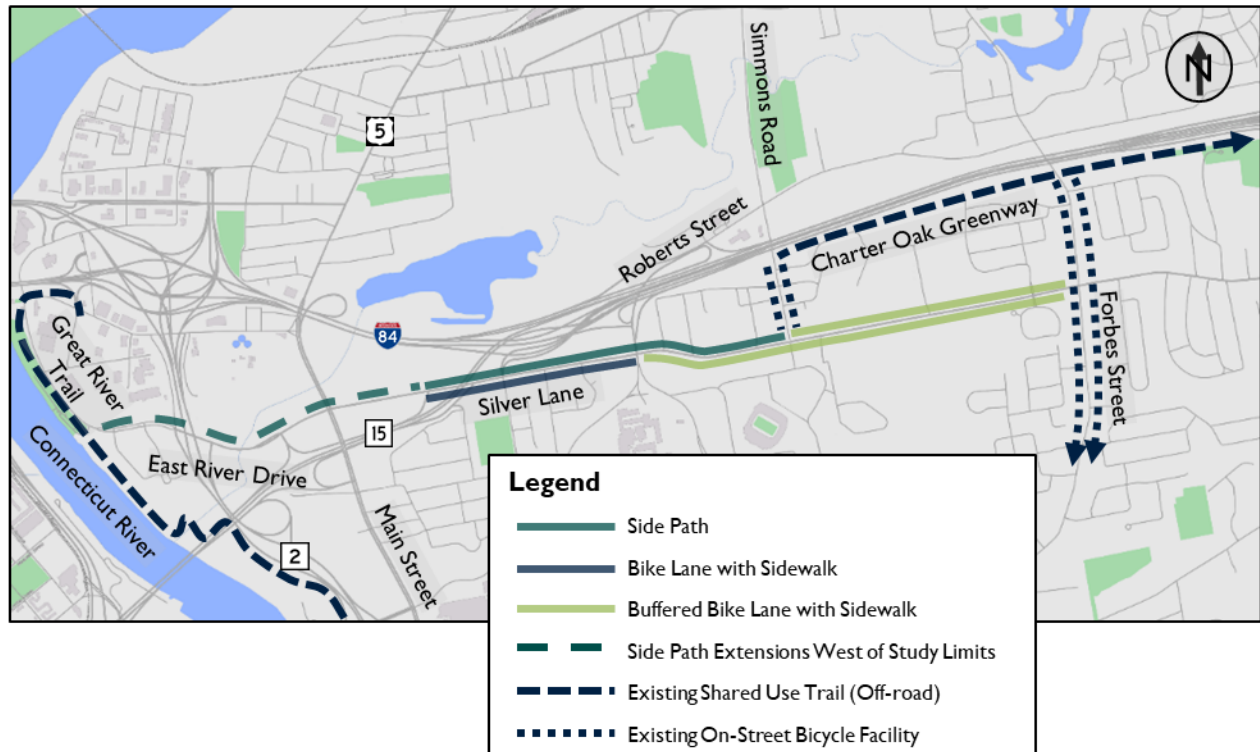


Figure 33: Initial Bicyclist Facility Recommendations

This concept was initially presented to the Silver Lane Advisory Committee in March and April of 2019, followed by a Public Information Meeting in April 2019. Feedback from the cycling community at the public meeting centered on providing additional protection for cyclists due to the high traffic volumes and speeds in the corridor. On this basis, the project team amended the recommendations to include 10 foot wide multi-use side paths on both sides of Silver Lane throughout the study area, separated from the roadway by a 2 foot (minimum) wide buffer. It is envisioned that the side paths would eventually extend west beyond the limits of the study area to provide off-street multi-use connectivity between the Great River Trail west of Main Street and the Charter Oak Greenway east of Simmons Road. The side paths would not be able to fit within the existing right-of-way (ROW) through much of the corridor. A summary of potential property impacts is included in Appendix 3.

The safest operation of a mixed use path is found when the bicycle and pedestrian portions are visually separated. This reduces conflicts between pedestrians and higher-speed bicyclists. This concept recommends a 5 foot wide concrete sidewalk for pedestrians, behind a 5 foot wide asphalt bicycle path, separated from the street by a 2 foot wide (minimum) buffer. It is proposed to have similar treatments on both sides of Silver Lane, so the best practice is to have the bicycle route run westbound on the north side and eastbound on the south side. Signage is recommended throughout the corridor to delineate the intended operation of the path. For public safety and aesthetics, it is recommended that pedestrian-scale lighting be installed along the side path.

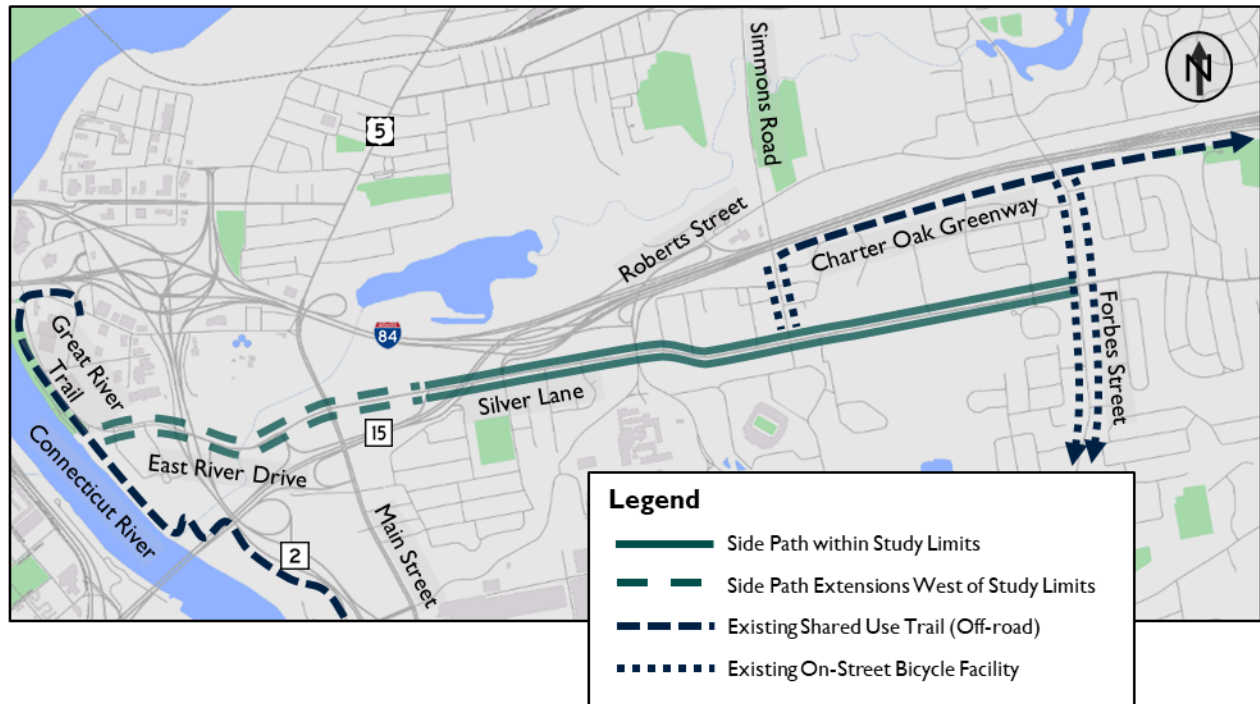


Figure 34: Final Bicyclist / Multi-use Facility Recommendations

4.1.2.1 Side Path Materials

Side paths are typically constructed with a hard surface, made of either asphalt (bituminous concrete) or concrete. The advantages and disadvantages of each are summarized below.

Concrete Advantages:

- Durability
- Appearance (consistent with Town's preferred sidewalk material)

Concrete Disadvantages:

- Construction cost
- Joint frequency (bicyclists)

Asphalt Advantages:

- Construction cost
- Relative ease to maintain and repair
- Joint frequency (bicyclists)

Asphalt Disadvantages:

- Durability
- Appearance (not consistent with Town's sidewalk material)

East Hartford town officials have indicated a preference for concrete as the side path material in areas targeted for new development. Additionally, the side paths could be constructed with both materials, with one 5' wide section of asphalt and another 5'-wide section of concrete. In these situations, the asphalt section would be denoted for use by bicyclists and the concrete section for pedestrians.

4.1.3 Transit Stop Amenities

As discussed in Section 3.4, the future transit recommendations of this study are guided by and made in coordination with the CTfastrak East Expansion Study, completed by CTDOT in 2016. In addition to the consolidation of stops on CTfastrak Route 121 (as noted earlier), it is recommended that stop amenities such as bus shelters and information boards be installed as shown in the following table.

Local Bus Stop:	CTfastrak Station Stop
<ul style="list-style-type: none"> • Bus shelter • System map • Timetable 	<ul style="list-style-type: none"> • Bus shelter • Bus pulloff • Digital bus information sign • Decorative lighting • CTfastrak branding

A rendering of a CTfastrak station stop from the CTfastrak East Expansion Study follows.



Figure 35: Station Stop Rendering (Source CTfastrak Expansion Study, CTDOT / WSP)

In addition, it is proposed to place bus pullouts at the CTfastrak stops to allow busses to pull out of the travel lanes to load and unload. This will provide a better service for bus patrons, as well as minimizing delay to the vehicular traffic on Silver Lane.

4.1.4 Relocate Overhead Utilities

Overhead utilities are present throughout the corridor. West of Roberts Street the utility poles are located on the south side of Silver Lane. East of Roberts Street they predominantly switch to the north side of Silver Lane before crossing again to the south side near the Silver Lanes parcel (east of Simmons Road). The final transition occurs at the signalized intersection with commercial driveways for Silver Lane Plaza and Aldi, where the lines cross back to the north side of Silver Lane. These locations are illustrated in Figure 36. In addition, there are service poles carrying lines to individual properties opposite to the side of Silver Lane where the distribution facilities are carried. Upon visual inspection, the overhead utilities include electric distribution, telephone and cable.



Existing Utilities on Silver Lane

These utility poles are typically offset from the curb by only a few feet, and will interfere with the construction of the side path and/or private property. The Town has expressed its desire to see the lines placed underground to improve resiliency during weather events. This will also provide additional flexibility in laying out the side paths, and greatly improve aesthetics. Although a complete review of utility impacts was not included in this study, underground relocation of the aerial facilities is recommended for consideration. It should be noted that the cost for this type of work could be very high with estimates in the range of \$1 million or more per mile.

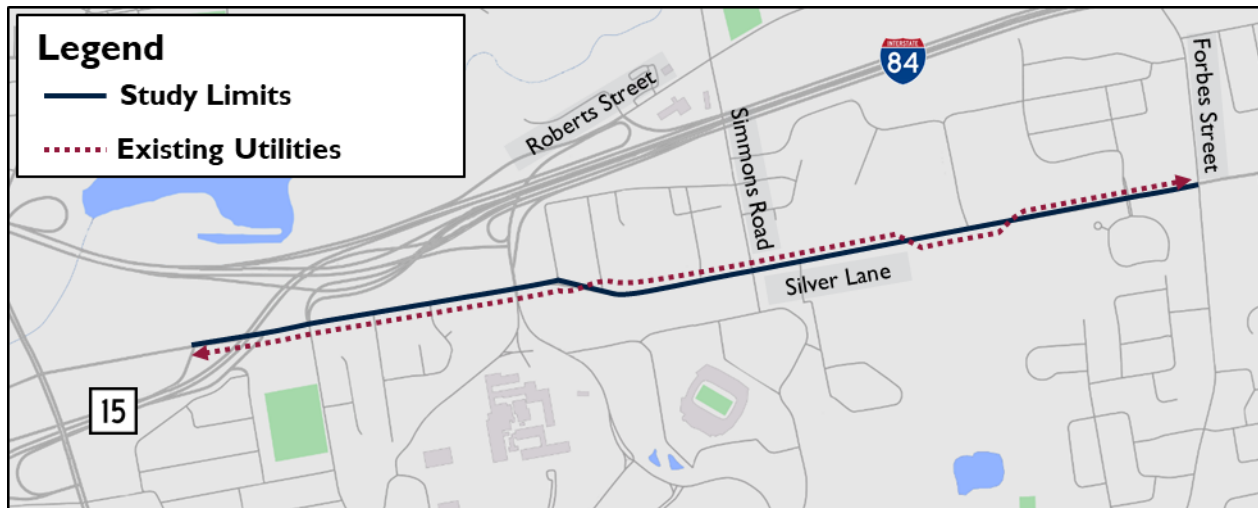


Figure 36: Utility Locations within the Silver Lane Corridor

4.2 Location-based Recommendations

4.2.1 Route 15 On-Ramp

The Route 15 On-Ramp operates well under existing conditions, and will do so through the 2040 Build condition. Westbound queues on Silver Lane are less than 100 feet during the peak hours.

Minor geometric modifications are recommended at this location to shorten the crossing distance for pedestrians from approximately 85 feet to 45 feet, and to make the intersection less skewed, which will control the speed of left turning traffic.

Reducing the radius on the southeast corner will also allow the residential driveway on the corner to be pulled back from the intersection, which will improve the access to the property and reduce the potential turning conflict. Final design efforts would ensure that the curb radii allow the appropriate design vehicles to turn on to the ramp.

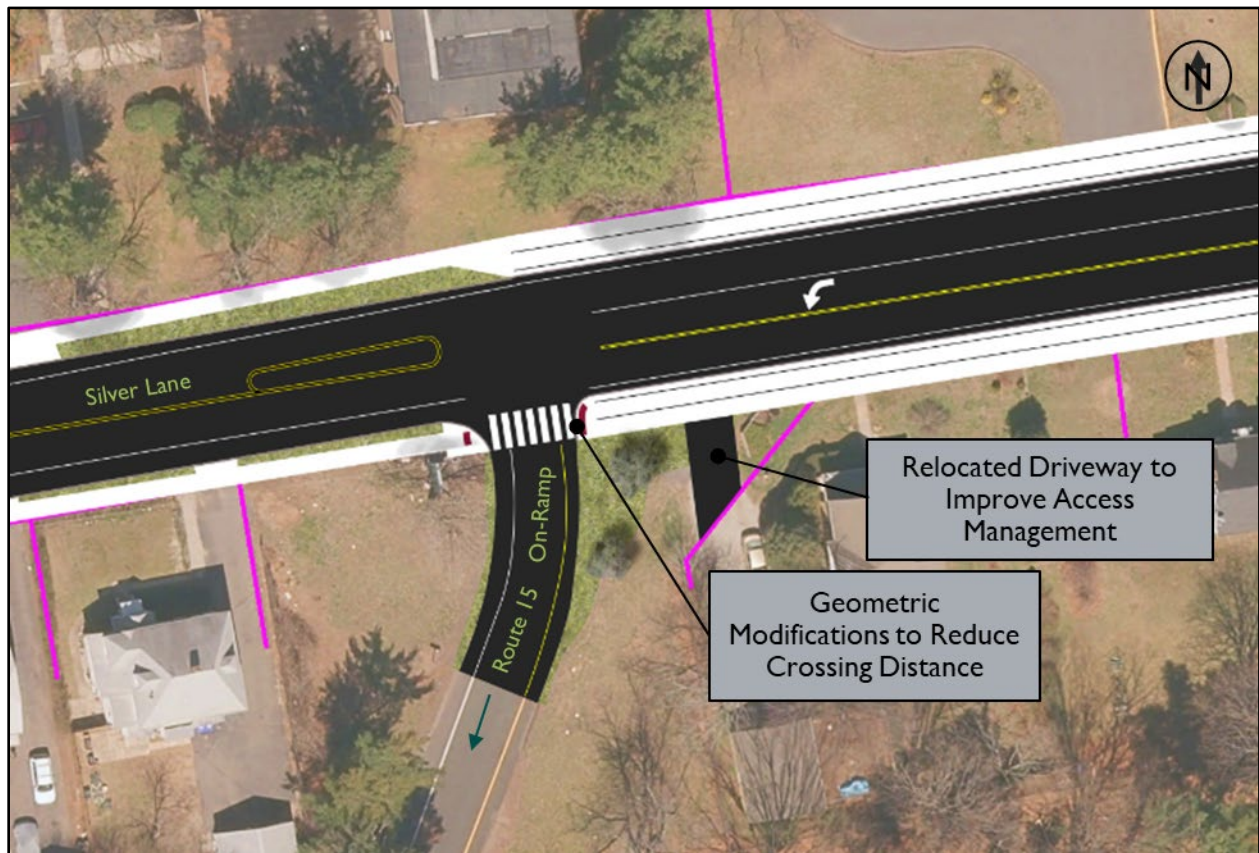


Figure 37: Route 15 On-Ramp Location-based Improvements

4.2.2 Route 15 Off-Ramp

The Route 15 Off-Ramp operates at LOS D under existing conditions in the weekday PM Peak hour, but will deteriorate to LOS F under 2040 Build conditions, because exiting ramp traffic will not be able to find sufficient gaps in the traffic to turn onto Silver Lane. A number of modifications were investigated for improving operations at this location, including signalization, but the resultant queuing between the On-Ramp and Mercer Avenue intersections and the visibility to the signal heads beneath the Route 15 overpass did not favor this solution.

Instead, construction of a roundabout is recommended as the best solution for this intersection. Delays are improved over existing conditions, the operational LOS is returned to LOS D and queues will not spill back to adjoining intersections. A pedestrian crossing for the ramp can be provided with good visibility, and will include ADA compliant ramps to address the existing deficiencies (lack of crosswalks across Silver Lane). The off-ramp approach to the roundabout will include narrowing and introduce curvature to encourage lower vehicular speeds. In combination with the previously discussed improvements at the Route 15 On-Ramp, the new and improved pedestrian facilities and environment will create a safer walking route from residences along Silver Lane to the Silver Lane Elementary School.

The commercial drive at this location can be incorporated into the roundabout design. The roundabout would also feature landscaping amenities to enhance aesthetics and could serve as a western gateway to the corridor. While the following drawing depicts one potential configuration for the roundabout, additional engineering analysis is warranted to analyze grading, approach angles, overall positioning and other potential engineering challenges.

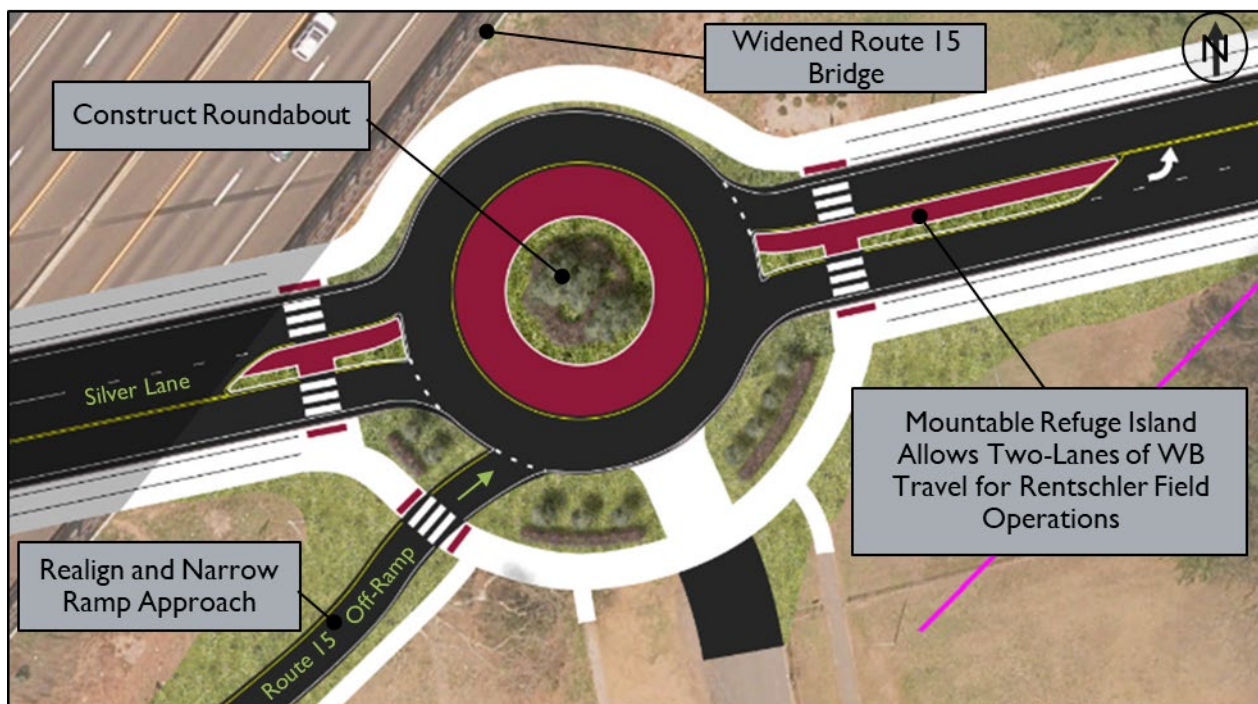


Figure 38: Route 15 Off-Ramp Location-based Improvements

4.2.3 Mercer Avenue / HOV Ramp

Upgrades to the signal and detection at Mercer Avenue should improve operations from LOS C and B to LOS A for both peak hours. Queues will not extend to adjoining intersections. It is recommended that the pedestrian phase be changed to a concurrent phase, with ADA compliant signals, pushbuttons and ramps. Bicycle detection should be provided, and bus stop pull-outs are proposed at this location.

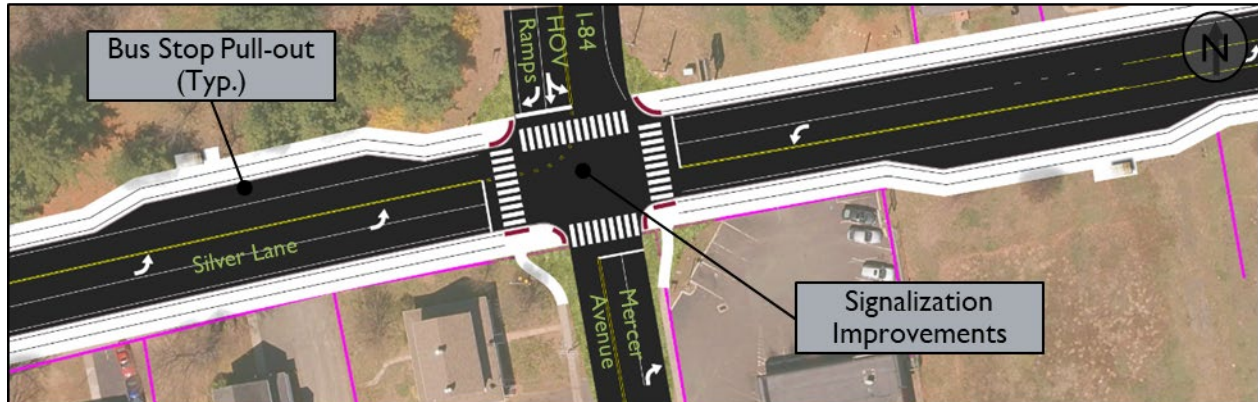


Figure 39: Mercer Avenue / I-84 HOV Ramp Location-based Improvements

4.2.4 Silver Lane Elementary School

As noted previously, the Silver Lane Elementary School is located between Mercer Avenue and the Route 15 Off-Ramp, and generates a substantial amount of pedestrian traffic. Presently, pedestrians use a sidewalk along the east side of the exit ramp between Silver Lane and Lawrence Street as a connection to a large residential area south of Route 15. Use of a grass area adjacent to the ramp is evident as a shortcut into the neighborhood, but the ramp crossing is not safe due to the high ramp speeds and poor sight line. The skewed ramp intersection is also problematic, as is the adjacent private driveway.

During fall 2019, the Town worked with CTDOT to coordinate the installation and extension of fencing at the intersection of the Route 15 NB Off-Ramp to Plain Drive and Lawrence Street to encourage use of the sidewalks along Lawrence Street and Plain Drive, rather than walking on a dirt path near the Route 15 Off-Ramp. The intersection of the Route 15 Off-Ramp at Lawrence Street and Plain Drive was converted into an all-way Stop sign controlled intersection. A formal crosswalk was installed by the town to direct pedestrians to walk across the Lawrence Street leg of the intersection, rather than the off-ramp leg.

4.2.5 281-287 Silver Lane (Carl's Barbecue)

This location contains development that is a conversion of multiple residential houses to commercial activity (with residential uses on the upper floors), where there is insufficient parking, compounded by the proximity of the structure to the road. The result is that vehicles pull into 90 degree parking, and must back out onto Silver Lane, crossing over a currently undefined pedestrian path. Unfortunately, the location of the structures leaves few options for controlling vehicular and pedestrian movements in this restricted space.

A concept plan is provided showing the conversion of the parking into angle parking, which will allow a few spaces to be included in front of the buildings without encroaching on the multi-use side path. Property will need to be acquired to facilitate the construction of the side path. As a result, the parking would be on public property and would need to be considered public parking. Coordination with the property owner will be required.

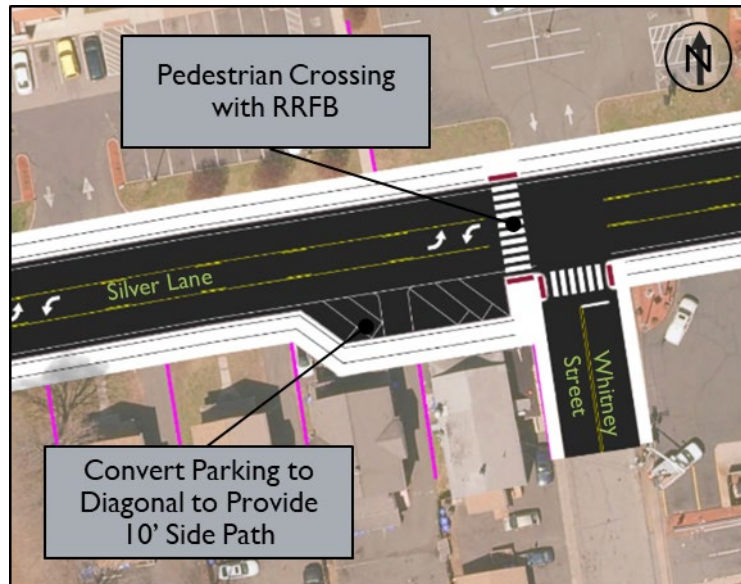


Figure 40: 281 – 287 Silver Lane Location-based Improvements

Back-in angle parking could also be considered and coordination with CTDOT prior to implementation of any changes will be required. Additional parking could be provided on the opposite side of Silver Lane, and a crosswalk across Silver Lane could be provided. While this solution may not be ideal, it appears the only feasible solution to maintain the operation of these businesses. Alternatively, the parking can be eliminated, or the properties will have to be acquired for redevelopment. These changes would also affect the remaining front yard depth for the property. Coordination with the East Hartford Planning & Zoning Commission and the property owner will be required.

With the potential shifting of parking to the opposite side of the street, a crosswalk is recommended at the Whitney Street intersection. This would also provide more convenient access to the businesses on the north side of Silver Lane from residential communities to the south. Installation of Rectangular Rapid Flashing Beacons (RRFB's) would be suggested at this location.



Sample RRFB (FHWA)

4.2.6 Warren Drive

A pedestrian crossing is proposed for Silver Lane at Warren Drive. A flush pedestrian refuge island is proposed at this location, to ensure roadway capacity can be provided with temporary traffic control for events at Rentschler Field. This methodology would be applied to all crossing locations west of Simmons Road. Installation of Rectangular Rapid Flashing Beacons (RRFB's) would be suggested at this location. This location would be beneficial by providing pedestrian access to the commercial uses on the north side of Silver Lane from residential areas to the south. It also would provide pedestrians an additional opportunity to cross Silver Lane, as there is a long distance between crosswalks at signalized intersections. A maintenance agreement with CTDOT would be needed for installation of the flush refuge island.

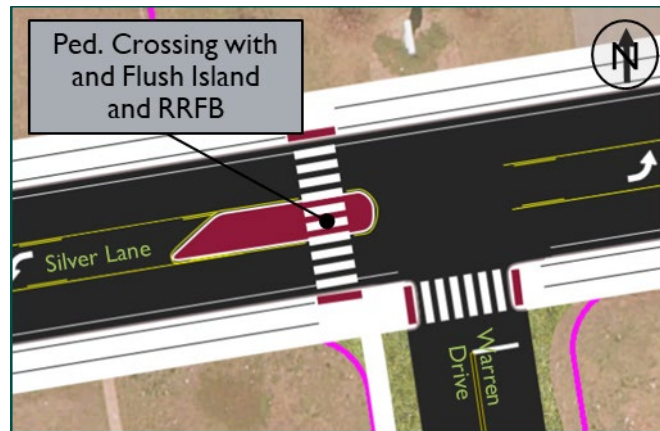


Figure 41: Warren Drive Location-based Improvements

A maintenance agreement with CTDOT would be needed for installation of the flush refuge island.

4.2.7 306-310 Silver Lane (Tire City and Queen Pizza)

These two properties could easily be reconfigured to share access, thereby reducing this very large apron to a manageable size. This should be a priority to be addressed the next time either owner requests a site plan modification, or it can be advanced independently by the town.

4.2.8 Roberts Street / East Hartford Boulevard

Under existing conditions, this intersection operates at LOS E for 5 out of 8 critical movements during the weekday PM Peak hour, and 6 out of 8 critical movements during the Saturday mid-day peak hour. By 2040, under the Build Scenario, some movements will deteriorate to LOS F.

This intersection presently has between four and six lanes approaching from each direction, making it impractical to add any operational lanes to improve operations. Because of the long distances necessary to cross the intersection, it is not practical or safe to eliminate the exclusive pedestrian phase. It is therefore recommended to provide a minor improvement to operations by removing this intersection from north/south coordination, and allow it to operate in “free” mode, giving it the most flexibility to service traffic volumes from all directions. This will allow it to improve to LOS E on 2 out of 8 critical movements during the weekday PM Peak hour and 3 out of 8 during the Saturday mid-day peak. The geometry of the approaches should be adjusted to provide appropriate storage for the approach queues, and the geometry should take the lane tapers and nearby commercial driveways into account. All crosswalks, sidewalk ramps, pedestrian signals and pushbuttons should be upgraded to be ADA compliant, and detection should be included for all lanes and bicycles. It appears that the crosswalk lengths can be shortened to provide shorter crossing times through tightening of curb radii and enhanced positioning of sidewalk ramps. Consideration should be given to the installation of an adaptive signal controller.

Under the development plan assumed for the Build Scenario, the parcel containing the house to the northwest of the intersection would be consolidated as part of the redevelopment of several adjoining parcels. Access to this site would be from a new, shared, driveway located to the west, opposite Warren Drive.

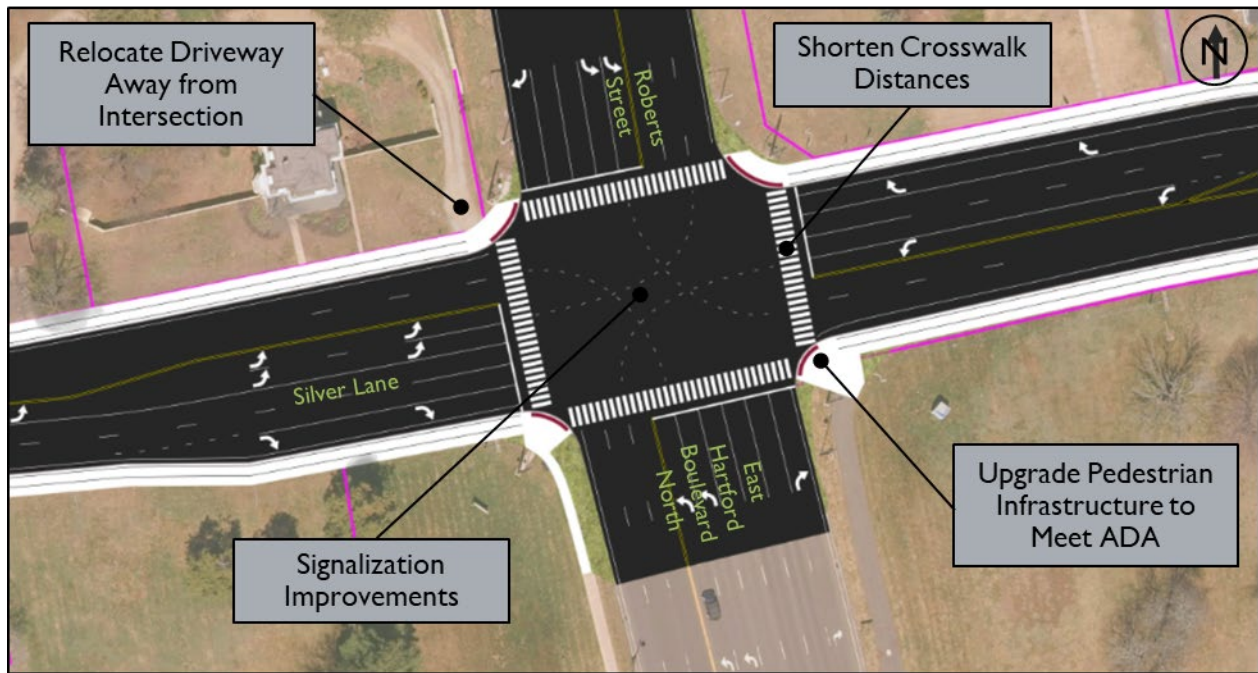


Figure 42: Roberts Street / East Hartford Boulevard Location-based Improvements

4.2.9 467-483 Silver Lane

These two properties are immediately adjacent. The active fueling station has two large driveways, and the office complex just to the west is mostly vacant. Given the likelihood that the office complex will need approvals when it is reoccupied, this would be an ideal time to have these properties combine the westernmost drive and eliminate one entry point.

4.2.10 Gold Street

Gold Street is a residential street that intersects Silver Lane a short distance east of Roberts Street. It is only one block long, running north from Silver Lane to Clement Road. Gold Street serves approximately 2 dozen single-family homes.

As noted earlier in the description of geometric deficiencies, Gold Street has sub-standard intersection sight distance looking to the left for vehicles turning left or right onto Silver Lane, and there have been several crashes at this location. Because the sight line limitation is another residential house, it is not considered feasible to improve this deficiency.

Through the discussions of the study team, it was decided that the best way to improve this situation is to make Gold Street one-way to the north, thereby eliminating the traffic turning onto Silver Lane. Residents of this street will travel north to Clement

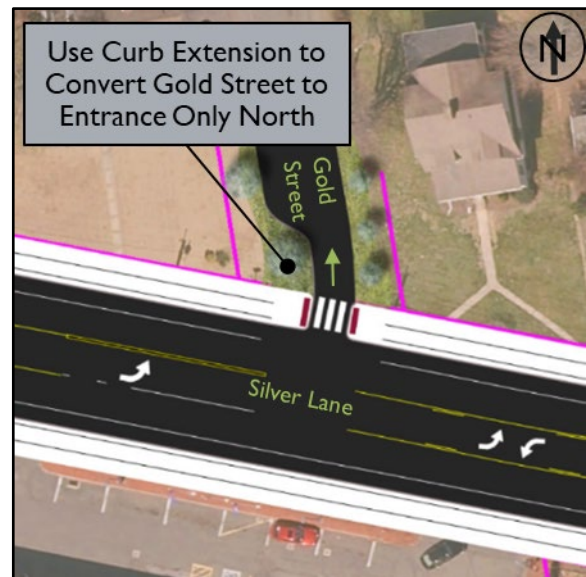


Figure 43: Gold Street Location-based Improvements

Road and either turn left and follow Clement Road back to Silver Lane, or turn right and follow Clement Road to Simmons Road. This minor inconvenience will eliminate the difficult turn onto Silver Lane, and improve safety at this location. This concept could be implemented on a trial basis using temporary infrastructure to gauge neighborhood support prior to implementation of more permanent infrastructure.

4.2.11 583 Silver Lane

The proposed side path, necessary to close an existing sidewalk gap, on the south side of Silver Lane must cross a small stream (Willow Brook) and its associated wetlands. The path will turn south to shorten the length of the bridge used in this crossing. It will then return to its alignment parallel to Silver Lane. Just east of this point, a mid-block crossing is proposed to service the parking fields on the north side of Silver Lane, and because of the distance between crossings at Roberts Street and Simmons Road. Installation of Rectangular Rapid Flashing Beacons (RRFB's) would be suggested at this location. This crossing would be particularly beneficial to help channelize pedestrian movement for access and egress to Rentschler Field as there is parking available on the north side of Silver Lane. It also would provide pedestrians an additional opportunity to cross Silver Lane, as there is a long distance between crosswalks at signalized intersections. A maintenance agreement with CTDOT would be needed for installation of the flush refuge island.

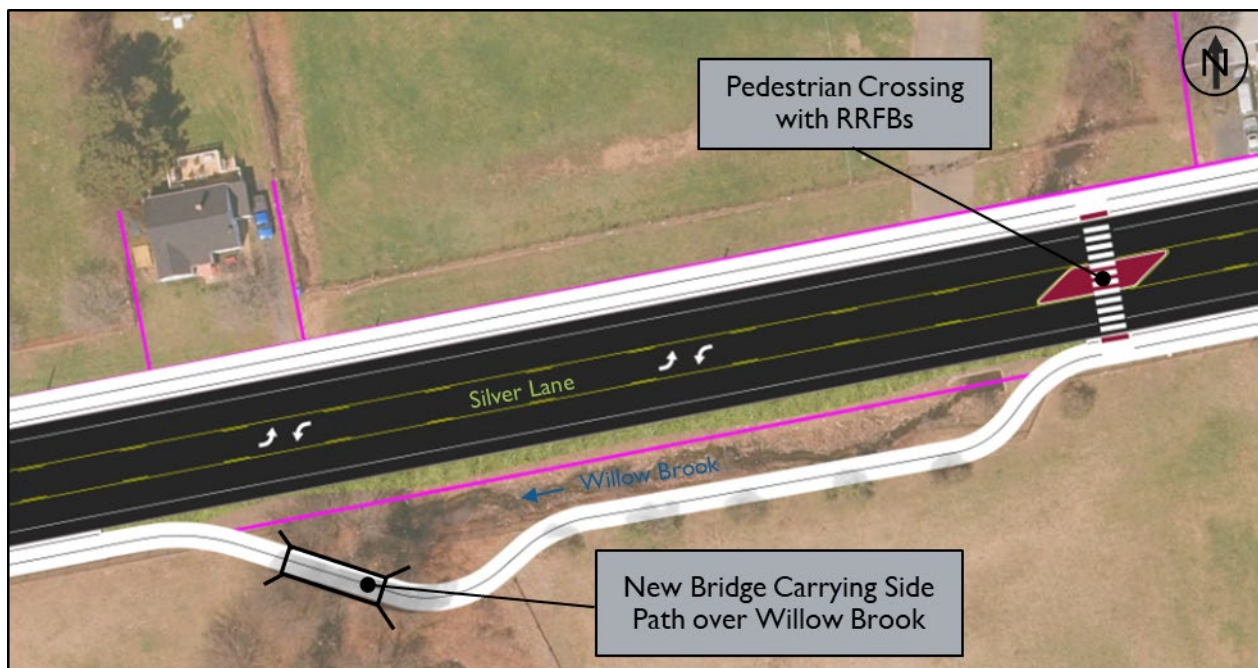


Figure 44: 583 Silver Lane Location-based Improvements

4.2.12 Simmons Road / Rentschler Field

Under existing conditions, this uncoordinated intersection operates at an overall LOS B, with all approaches operating at LOS C or better. This remains unchanged through the 2040 Build condition. With the implementation of the road diet, the intersection operation will remain unchanged. Vehicle actuation should be modernized, and full actuation, including bicycle, should be considered to maximize efficiency. Pedestrian signals, pushbuttons and ramps should be made fully ADA compliant.

4.2.13 708-720 Silver Lane (Burger King and Aaron's)

These two properties could easily share a single entry point, although the Burger King site, with a one-way circulation, would require a separate exit drive.

4.2.14 Silver Lane West of Applegate Lane

Three mid-block crossings are proposed to provide crossing opportunities at roughly 700 foot (1/8 mile) spacing. Through this segment, there are a mix of uses on both sides of Silver Lane. The crossing would allow pedestrians greater opportunity to cross Silver Lane, as there is a long distance between crosswalks at signalized intersections. Each location has a raised pedestrian island and it is recommended that Rectangular Rapid Flashing Beacons (RRFB's) be installed at these locations. Raised pedestrian islands are proposed rather than the mountable islands, as it is not necessary to provide two lanes of travel in either direction for access to Rentschler Field prior to or following events east of Simmons Road. A maintenance agreement with CTDOT would be needed for installation of the raised refuge islands.

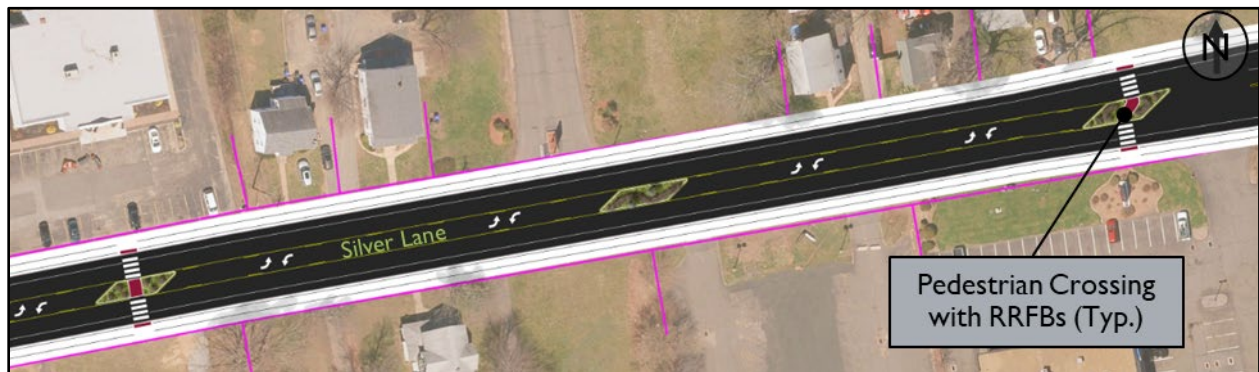


Figure 45: Silver Lane West of Applegate Lane Location-based Improvements

4.2.15 735-785 Silver Lane

Internal connections should be made between these parcels, and at least two of the Silver Lane drives should be eliminated. Since redevelopment of some of these parcels would appear necessary, the opportunity to consolidate access could be nearby.

The structure for Town and Country Liquors is placed too close to the road to allow for the front parking to remain in its current configuration with the implementation of the side path. As part of the reconfiguration, the access for this parcel can be addressed.

4.2.16 Silver Lane Plaza, 888 & 910 Silver Lane

The redevelopment of Silver Lane Plaza, provides an opportunity for the Plaza, and adjoining parcels at 888 Silver Lane, and 910 Silver Lane, to combine their seven driveways in order to simplify access and to reduce the use of developable land for redundant driveways. Ideally, the relocated access would be located as far as practical from signalized intersections, while also balancing the needs of internal circulation.

4.2.17 Silver Lane between Aldi's/Silver Lane Plaza and Forbes Street

This 2,500 foot long portion of Silver Lane lie at the east end of the Study Area, and includes signals at:

- Aldi / Silver Lane Plaza (West)
- Silver Lane Plaza (East)
- Charter Oak Mall / Phillips Farm Road
- Forbes Street

Presently, the two westernmost signals are operated by a single controller, and coordinated with the signal at the Charter Oak Mall/Phillips Farm Road. The eastern signal at Forbes Street is not coordinated. Levels of Service are D or better for all approaches under existing conditions, but delays and queuing will increase through the 2040 Build condition. It is recommended that the signals be separated into individual controllers, but coordinated to allow a better progression through the area. Additional turn lanes should be constructed on the side street / driveway approaches to reduce delays for those vehicles, and the pedestrian phases should be modified from exclusive to concurrent phasing. All pedestrian signals, pushbuttons, ramps and crosswalks should be made ADA compliant and bicycle detection should be included. This will result in overall improvement to operations and safety throughout this section of the corridor. Bus pull-outs are proposed at the Aldi intersection and the Phillips Farm Road intersection.

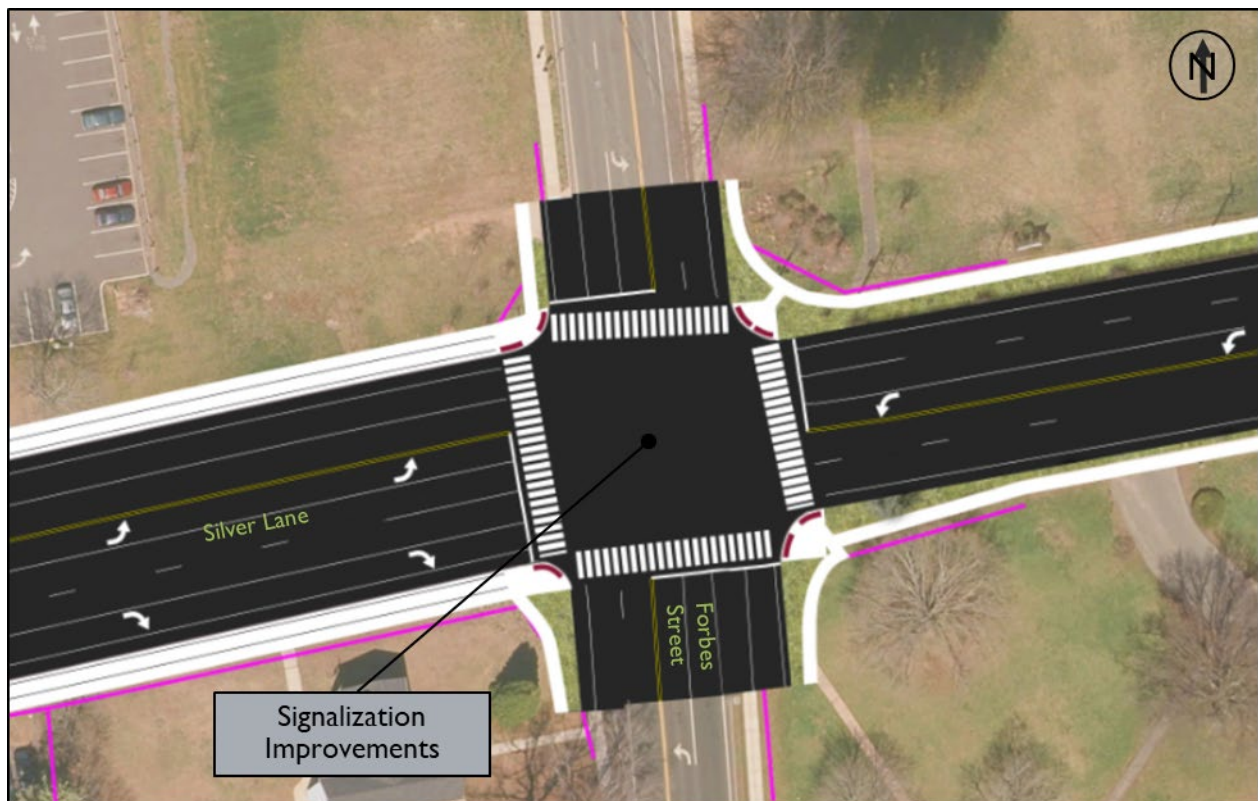


Figure 46: Forbes Street Location-based Improvements

Table 15: Recommended Improvements - Future (2040) Level of Service Summary

Intersection / Approach		Weekday Afternoon Peak			Weekend Midday Peak		
	Available Storage	LOS	Delay (sec / veh)	95% Queue	LOS	Delay (sec / veh)	95% Queue
Silver Lane at CT 15 On-Ramp (Unsignalized)							
Silver Lane Eastbound	781	A	0	0	A	0	0
Silver Lane Westbound	759	B	12.9	64	B	10	32
Overall							
Silver Lane at CT 15 Off-Ramp (Roundabout)							
Silver Lane Eastbound	759	A	8.6	75	A	6.5	50
Silver Lane Westbound	463	B	14	175	A	9.7	100
CT 15 Off-Ramp Northbound	1125	D	28.4	200	A	9.4	50
Overall		C	15.5		A	8.6	
Silver Lane at Mercer Avenue / I-84 HOV Ramps (Signalized)							
Silver Lane Eastbound	463	B	10.8	455	B	11.6	342
Silver Lane Westbound	2085	B	15.3	203	A	6.7	211
Mercer Avenue Northbound	670	D	37.5	56	C	28.1	49
I-84 HOV Off-Ramp Southbound	630	C	32.6	31	C	25.7	19
Overall		A	9.8		A	9.6	
Silver Lane at Roberts Street / East Hartford Boulevard North (Signalized)							
Silver Lane Eastbound	260/2085	E/C	67.7/29.5	212/267	E/D	65.6/48.2	148/226
Silver Lane Westbound	160/2556	D/D	47.2/39.9	41/150	D/D	72.7/59.6	85/205
East Hartford Boulevard North Northbound	150/200	D/D	44.0/38.6	99/326	E/C	60.3/22.1	67/63
Roberts Street Southbound	150/268	E/C	79.7/22.8	188/73	E/B	68.0/17.1	154/77
Overall		D	37.3		D	38.9	
Silver Lane at Simmons Road / Rentschler Field (Signalized)							
Silver Lane Eastbound	2540	B	17.4	662	A	8.3	167
Silver Lane Westbound	2556	A	5.8	135	A	8.2	164
Rentschler Field Access Drive Northbound	982	C	23	9	B	15.8	8
Roberts Street Southbound	825	C	32.3	115	B	15.6	58
Overall		B	14.4		A	8.7	
Silver Lane at Silver Lane Plaza / Aldi (Signalized)							
Silver Lane Eastbound	2556	B	17	580	B	16.7	355
Silver Lane Westbound	394	A	8.6	34	A	5.2	72
Aldi Drive Northbound	450	E	67.1	143	D	49.1	148
Silver Lane Plaza Drive Southbound	463	D	40.9	43	C	28.3	44
Overall		B	14		B	12.4	
Silver Lane at Silver Lane Plaza (Signalized)							
Silver Lane Eastbound	394	A	6.3	266	A	5.2	96
Silver Lane Westbound	1041	A	3.9	120	A	9.5	278
Silver Lane Plaza Drive Southbound	467	D	52.9	62	D	47.3	62
Overall		A	6.7		A	8.4	
Silver Lane at Charter Oak Mall / Phillips Farm Road (Signalized)							
Silver Lane Eastbound	1041	B	16.5	722	C	23.4	475
Silver Lane Westbound	769	A	8.3	200	C	30.8	253
Aldi Drive Northbound	594	A	0.7	0	B	16	38
Silver Lane Plaza Drive Southbound	549	E	58.3	244	C	31.7	140
Overall		B	16.1		C	20.3	
Silver Lane at Forbes Street (Signalized)							
Silver Lane Eastbound	769	C	23.9	239	B	10.9	126
Silver Lane Westbound	1106	B	18	157	B	13.2	114
Forbes Street Northbound	1073	D	50.4	139	D	39.2	90
Forbes Street Southbound	978	D	53.3	167	D	41.9	90
Overall		C	29.6		B	19.5	

5. SUMMARY OF PROPOSED IMPROVEMENTS

5.1.1 *Vehicle Operation and Safety*

- Road diet with center dual left turn lane to remove left turns from traffic stream, provide shelter area for vehicles entering Silver Lane, calm traffic and reduce overall roadway width
- Improve geometry at Route 15 Entrance ramp to control entering speeds
- Installation of a roundabout at Route 15 Exit ramp to improve capacity and reduce delay and conflict points.
- Improve signal timing and detection at Mercer Avenue to reduce queues and delay.
- Revise or eliminate head-in parking at 281-287 Silver Lane (Carl's Barbeque) to remove conflicting maneuvers and encroachment on the sidewalk area and to create a defined pedestrian pathway across the properties.
- Improve signal timing and detection and remove signal from coordination at Roberts Street / East Hartford Boulevard. Investigate use of an adaptive signal controller at this location.
- Change Gold Street to operate one-way northbound to eliminate the sight line restriction for southbound traffic.
- Upgrade Simmons Road detection and consider full-actuation.
- Separate signal operation at Aldi and Silver Lane Plaza (East) to individual controllers.
- Install coordination system at Aldi, Silver Lane Plaza (East), Charter Oak Plaza, and Forbes Street. Update phasing and timing at all four signals. Modernize detection for each signal.

5.1.2 *Pedestrian Safety*

- Utilize multi-use, bidirectional side path to form a complete pedestrian walkway throughout the corridor. It is recommended that the 5 foot wide pedestrian portion of the path be concrete.
- Provide a minimum 2-3 foot wide buffer between the side path and the roadway curb.
- Install ADA-compliant audible pedestrian pushbuttons at all signalized intersections.
- Install ADA-compliant countdown pedestrian signals at all signalized intersections.
- Install ADA-compliant sidewalk ramps for all crossing directions at all intersections, including compliant longitudinal and cross slopes, transition grades and tactile warning strips.
- Install marked crosswalks for all sidewalk paths and all crossing locations.
- Correct driveways that do not have compliant crossings for sidewalk areas.
- Install pedestrian bridge at Rentschler Field site to carry the side path across the Willow Brook.
- Where possible, install raised islands on Silver Lane to provide pedestrian refuge areas.
- Install mid-block crossings along with appropriate crossing controls, such as Rectangular Rapid Flashing Beacons (RRFB's).
- Where necessary for traffic control during special events, install textured pavement and mountable islands to provide visual reinforcement of pedestrian crossings.

5.1.3 Bicycle Safety

- Utilize multi-use, unidirectional side path to form a complete bicycle path throughout the corridor. It is recommended that the 5 foot wide bicycle portion of the path be asphalt.
- Provide appropriate signing and striping on the bicycle path to control bicycle movements.
- Provide a 5 foot wide shoulder east of Roberts on the roadway adjacent to the travel way to permit non-recreational bicyclists to ride in the street.
- Provide bicycle detectors for on-street and on-path bicycles to cross signalized intersections.
- Continue the side path north on the east side of Forbes Street to meet the Charter Oak Greenway.
- Install sharrow markings on Simmons Road to connect the side paths to the Charter Oak Greenway.

5.1.4 Access Management

General Criteria for evaluating and controlling access to sites in a corridor are:

- Curb cuts and roadway intersections should meet at a 90 degree angle.
- Access drives should not be located within 150 feet of an intersection.
- Access drives on the same side of the roadway should be separated as far apart as practical, with a minimum separation of 60 feet for residential drives and 120 feet for commercial drives.
- All curb cuts and/or roadway intersections on opposite sides of the roadway should be aligned directly opposite one another.
- Internal circulation among adjoining properties should be provided where possible.
- Properties with less than 100 feet of frontage should have no more than one curb cut.
- Where a property has two curb cuts, there should be a minimum of one-third of the frontage area separating the two curb cuts.
- Drives should not be excessively wide (more than 25 feet for one way access and 50 feet for a 2 way access).
- Curb edges should be clearly defined with islands or landscaping.

Several properties were identified where driveway locations were close together, redundant, or within an intersection envelope. Steps should be taken through the Town's land use agencies to strongly encourage adoption of access management practices during any permitting process. The town may also pro-actively work with property owners to control existing access points.

Some property frontage locations, such as Carl's Barbeque or Town & Country Liquors, have insufficient depth to maintain parking and access in front of their structures. More aggressive measures may be necessary to control access at these locations, up to and including acquisition of the properties.

5.1.5 Transit Improvements

- In order to maintain higher average speeds and increase reliability, CTfastrak Route 121 service will no longer stop at Clement Road or Forbes Street. These stops will still be served by CTtransit Route 83. Proposed stop removals will need to be approved by CTtransit as part of their service review process. This action could be initiated by the Town of East Hartford.
- Bus shelters and amenities will be provided at all bus stops within the corridor according to the standards established in the Statewide Bus Study to determine which stops meet the threshold for such amenities. It is also important to note that shelters and stops will require the Town of East Hartford to assume maintenance responsibilities.
- Bus pull-outs are proposed at the four CTfastrak stops (Mercer Avenue, Simmons Road, Applegate Lane and Charter Oak Mall).
- The existing shelters at Applegate Lane and the Charter Oak Mall will be upgraded to the CTfastrak 'station stop' standards to provide better accommodations for riders. Based on the density of potential development at these areas, additional amenities could be provided in line with park and ride locations along Route 121. The Town of East Hartford should coordinate with CTtransit and CTDOT prior to implementation.

5.1.6 Assessment of Probable Costs

Table 16: Assessment of Probable Costs

Recommendations	Estimated Construction Cost
Pedestrian Safety	
Pedestrian Portion of Side Path (5' Concrete)	\$1,500,000
Buffer Strip (2' - 3' Hardscape)	\$1,500,000
ADA-compliant Push Buttons and Signals	\$100,000
ADA-complaint Sidewalk Ramps	\$200,000
Marked Crosswalks	\$55,000
Pedestrian Bridge over Willow Brook	\$200,000
Raised Refuge Islands	\$225,000
RFFBs	\$700,000
Textured / Mountable Refuge Islands	\$80,000
Ornamental Street Lighting	\$1,600,000
Bicycle Safety	
Bike Path Portion of Side Path (5' Asphalt)	\$400,000
Bike Path Signing and Striping	\$90,000
Transit Improvements	
Bus Shelters	\$500,000
Bus Pull-outs	\$260,000
Vehicle Operations and Improvements	
Widening to Implement Road Diet (Shoulders)	\$1,000,000
Route 15 On-Ramp	\$75,000
Roundabout at Route 15 Off-Ramp	\$2,500,000
Signalization Improvements at Mercer Avenue	\$250,000
Revise Parking at Carl's Barbeque	\$50,000
Signalization Improvements at Roberts Street	\$100,000
Signalization Improvements at Simmons Road	\$250,000
Separate Traffic Signals at Aldi and Silber Lane Plaza (E)	\$500,000
Traffic Signal Upgrades between Aldi and Forbes Street	\$500,000
Total	\$12,635,000

*Some funding has been secured to develop concepts and implement interim sidewalk improvements. See Interim Improvements section, following.

6. INTERIM IMPROVEMENTS

This report outlines significant changes to the Silver Lane Corridor, which will involve changes to land use, re-development, improvements to utilities and other infrastructure, and multiple property/right-of-way impacts. It is recognized that measures of this magnitude will likely take place over an extended period of time, as development opportunities present themselves throughout the corridor, and as funding sources become available for sections of improvement.

However, that does not mean that short-term improvements cannot be pursued. In fact, as of this writing, one of the major proposed improvements is already in place, and others are soon to be implemented:

- The concept of a road diet was presented to the Silver Lane Advisory Committee and subsequently to the public over a year ago. In addition to the road diet's inclusion as a long-term strategy for re-imagining Silver Lane, an opportunity emerged in the spring of 2019 to implement the proposed road diet under CTDOT's Vendor-in-Place (VIP) pavement rehabilitation program. While the long-term vision for this roadway segment includes additional amenities, the town quickly saw the opportunity to capitalize on implementing the desired lane configuration under an existing funded program. As a result, the road diet is already in place, as shown in the images below.

The implementation of the road diet has addressed deficient lane widths throughout the corridor. Additionally, the provision of the two-way center left turn lane allows traffic to safely bypass left turning vehicles while they wait for a gap in opposing traffic. Finally, the road diet has increased shoulder widths throughout the corridor. While this has improved the nature of bicyclist facilities, the resulting widths still do not meet standards to serve as bicycle lanes due to the limited curb-to-curb width of the existing roadway and the nature of improvements possible under the VIP program.



Silver Lane, near Whitney Street illustrating the lane configuration before (left) and after (right) the road diet implementation)



Silver Lane near the Burger King (708 Silver Lane) looking east before (left) and after (right) the road diet implementation

- The Town worked with CTDOT to coordinate the installation and extension of fencing at the intersection of the Route 15 NB Off-Ramp to Plain Drive and Lawrence Street to encourage use of the sidewalks along Lawrence Street and Plain Drive, rather than walking on a dirt path near the Route 15 Off-Ramp. The intersection of the Route 15 Off-Ramp at Lawrence Street and Plain Drive was converted into an all-way Stop sign controlled intersection. A formal crosswalk was installed by the town to direct pedestrians to walk across the Lawrence Street leg of the intersection, rather than the off-ramp leg.
- Plans are nearing completion for construction of an interim sidewalk project that will complete gaps in the existing sidewalk, and provide better pedestrian connectivity using existing (in-place) funding. This work can eventually evolve into the larger plan. By completing this project, the Town will eliminate the gaps in the sidewalk network, one of the primary pedestrian deficiencies.
- The Town is currently applying for funding to complete a demonstration project to implement temporary traffic controls and curbing to reorient Gold Street to one-way operation. If successful, the Town can implement permanent measures to complete the conversion. This measure would help address the deficient intersection sight distance at this location by directing motorists to other intersections in order to turn on to Silver Lane.
- The Town may be able to secure funding for the installation of bus shelters along the corridor at locations where the location of the future side path is defined. There are various sources for this type of funding, and the shelters can proceed independently from other work.
- There are potential funds available for upgrading signals to include ADA compliant components, including countdown pedestrian signals and audible pushbuttons. The Town should work with CTDOT to determine availability of these funds.

A.I. APPENDIX I – PUBLIC INVOLVEMENT

REPORT OF MEETING

Date and Time: Tuesday, January 30, 2018, 7:00 PM

Location: East Hartford Town Hall, 740 Main St, East Hartford, CT 06108

Subject: Silver Lane Corridor Study, Public Meeting #1

Attendees

NAME	ORGANIZATION	EMAIL ADDRESS
<u>TOWN STAFF</u>		
Marcia Leclerc, Mayor	Town of East Hartford	mleclerc@easthartfordct.gov
Eileen Buckheit	Town of East Hartford	ebuckheit@easthartfordct.gov
Tim Bockus	Town of East Hartford	tbockus@easthartfordct.gov;
Michael Daniels	Town of East Hartford	mdaniels@easthartfordct.gov
<u>STUDY TEAM</u>		
Emily Hultquist	Capitol Region Council of Governments (CRCOG)	ehultquist@crcog.org
Jillian Massey	CRCOG	jmassey@crcog.org
Patrick Zapatka	Connecticut Department of Transportation (CTDOT)	patrick.zapatka@ct.gov
Casey Hardin	TranSystems	crhardin@transystems.com
Kimberly Rudy	TranSystems	karudy@transystems.com
Ben Hosley	TranSystems	behosley@transystems.com
Rory Fitzgerald	Fitzgerald & Halliday, Inc. (FHI)	rory.fitzgerald@fhiplan.com
Rebecca Augur	Milone and MacBroom	raugur@mminc.com
Patrick Gallagher	Milone and MacBroom	pgallagher@mminc.com

1. Introductions:

Marcia Leclerc, Mayor of East Hartford, welcomed everyone to the first public meeting for the Silver Lane Corridor Study. She outlined some of the preceding and ongoing studies within the past several years including the Brownfields Area Revitalization (BAR) Planning Grant the Willow Brook Flood Mitigation Study, and the Working Cities Challenge. The BAR Grant is working closely with the Silver Lane Corridor Study to evaluate underutilized parcels of land across the town which make up the majority of East Hartford's developable land. The Willow Brook Flood Mitigation Study resulted in a Conditional Letter of Map Revision (CLOMR) for the Willow Brook, reducing the flood zone area. . The Working Cities Challenge is an initiative to help communities improve economic outcomes by advancing proposals that tackle complex challenges facing lower income residents. After providing a background of the recent and ongoing studies performed, Mayor Leclerc then opened the floor to Eileen Buckheit, East Hartford's Director of Development, Emily Hultquist, CRCOG's Principal Planner, and Casey Hardin, TranSystems Project Manager, who each thanked the audience for attending the meeting prior to beginning the opening presentation.

2. Transportation Study and Land Use Presentation:

E. Hultquist started the presentation by explaining the nature of corridor studies and the need for them when developing a master transportation plan. She further elaborated that such a plan would be necessary in order to promote orderly growth, encourage efficient use of public infrastructure provide a guideline for roadway improvements that all included parties can refer to. The basis for the Silver Lane Corridor Study, Emily explained is to determine viable transportation improvements for the segment of Silver Lane running between Route 15 and Forbes Street. C. Hardin began a discussion of the existing transportation conditions in the Study Area. This segment of Silver Lane has an average daily traffic (ADT) of 11,400-17,600 vehicles

per day. Two intersections in the Study Area were highlighted for their levels of service (LOS), or delay expressed in seconds per vehicle. These were the intersection of Silver Lane with Roberts Street and Forbes Street which both carry operate at LOS C (20-35 seconds per vehicle) in the weekend midday period, and LOS D (35-55 seconds per vehicle) in the weekday afternoon period. Casey went on to highlight portions of the corridor that were impacted by an above average number of crashes, which included areas with commercial driveways and intersections with the highest travel volumes including the intersections at Roberts Street, Simmons Road, and Forbes Street. Casey highlighted the existing daily ridership for bus routes on Silver Lane, Route 83 and Route 121, which exceed 2,000 and 1,300, respectively. He noted that stakeholders have discussed with the Study Team the need for improved access and connections to destinations outside of Silver Lane. Casey noted the existing gaps in the multi-use trail and sidewalk networks along Silver Lane. Expansion of the multi-use trails and elimination of sidewalk gaps would provide the community with better and safer access to bicycle and pedestrian routes.

The next section of the presentation on land use concerns along the corridor was led by Patrick Gallagher, Planner at Milone and MacBroom. Patrick began by reviewing the existing zoning regulations in that have been guiding the Town's growth and development, with special attention to those that pertain to the Silver Lane Corridor. Patrick briefly outlined some of the most recent developments over the past decade that have contributed positively to East Hartford's commercial and economic growth including Aldi supermarket, Dunkin Donuts, CVS Pharmacy, and Dollar General. He then highlighted a number of vacant and underutilized parcels potentially available for development to further increase economic growth. Some of the vacant land highlighted include a 1.9 acre parcel between 249 and 257 Silver Lane, a 17 acre parcel between 675 and 711 Silver Lane, a 35.2 acre parcel on 825 Silver Lane and a 6.8 acre parcel adjacent to the existing Pratt & Whitney Gateway. Some of the underutilized properties mentioned include the vacant Showcase Cinemas site (65,847 SF), 15 units in Silver Lane Plaza (112,115 SF), 2 units in the Charter Oak Mall (26,078 SF), and 2 units in the plaza between 467 and 479 Silver Lane (14,857 SF). Some major constraints to development on Silver Lane are wetlands and FEMA 100-year flood zones.

Milone and MacBroom's key takeaways from their retail market study showed that the corridor contained and oversupply of retail space which included many vacancies in older "big box" type developments along the eastern end of the corridor. Some of the strategies proposed to meet these issues include the development of more unique and niche mixed use development to stimulate a more traditional commercial core near Forbes Street and Roberts Street where it is believed these developments would see the most traffic. Increased housing development would also provide the increase local spending power needed to support neighborhood retail along the corridor. Milone and MacBroom's housing market study suggests that regional growth for multi-family housing has been on the rise over the last decade, and Pratt & Whitney's hiring program would be expected to further bolster the housing demand in East Hartford. In order to meet this demand they've suggested that East Hartford aim to provide further market rate rental housing along the corridor which could potentially be found through vacant and underutilized commercial sites. At the end of the presentation attendees were given Silver Lane 2040 post cards and asked to write down ideas they had for their visions of Silver Lane in the future and what they'd like to see, which then segued into the three breakout sessions. Comments received on the post cards are included below in the break out station sections.

3. Break Out Station - Transportation:

The transportation break out session was led by Emily Hultquist of CRCOG and Casey Hardin of TranSystems. The Silver Lane Study Area was divided into three areas for detailed public feedback on the transportation existing conditions. In each of the three segments of the Silver Lane Study Area, traffic

operations, high crash locations, and sidewalk gaps were noted. Some of the public's comments and concerns for the transportation break out session are as follows:

- A 'park and ride' commuter lot could work well in unison with a casino or stadium development. The parking lot of Silver Lane Plaza was noted as a potential location.
- Improvements had already been made to the Forbes Street Intersection through the most recent renovations (approx. 2013)
- Traffic signal on the south side of the Roberts Street intersection requires maintenance
- Signs for I-84 approaching from East Hartford Boulevard of the Roberts Street intersection are misleading and unclear
- A town picnic area is proposed in the conservation area east of Rentschler Field with a trail connection heading south. It was suggested that a trail connection to Silver Lane would be beneficial.
- Flooding issues were prominent in the area north east of the Roberts Street intersection and further development could exacerbate the issue
- Robert Street intersection should be restriped so that eastbound lanes turning left are better defined
- Segment of the corridor between Roberts Street and Mercer Street is used by many pedestrians, and could use wider sidewalks and crossings to support the existing use
- Lots of deer have been spotted along Route 15 and deer crossing signs should be maintained
- Off ramp to Lawrence Street has been useful and should be kept
- A wider sidewalk or multi-use path all throughout the corridor would be useful to bicyclists and pedestrians
- Noted that roadways similar to Berlin Turnpike would not be an appropriate design for Silver Lane, east of Roberts Street
- Noted that on the south side of Silver Lane near the post office, the shoulder is in poor condition

4. Break Out Station - Long Term Land Use Vision:

Milone and MacBroom's breakout presentation conducted by Rebecca Augur discussed two proposed changes to East Hartford's zoning map. She urged participants to highlight aspects of the maps that they liked and disliked most with red and green stickers, and to offer any comments and concerns that could help guide the conversation. Some of the public's comments and concerns for the long term land use vision breakout session are as follows:

- Concern that too much emphasis is being placed on creating new, amenity rich development, when there is an equally great need for existing housing to be improved and updated to offer these desired amenities to existing residents
- Safety concerns were expressed about the increased traffic that would be expected due to further commercial development along segments of the corridor that already feel unsafe and overcrowded

- Safety concerns were expressed about the lack of sidewalks and pedestrian friendly infrastructure along the school zones in the corridor
- Many attendees showed a positive reaction to the inclusion of a pedestrian friendly place making park or multi-use trail connecting residential neighborhoods to underutilized segments of the corridor
- Positive reactions received in regards to the inclusion of amenity rich housing developments along the existing cinema and Charter Oak Mall site
- Concern was expressed towards altering zoning regulations to favor commercial development in regions while buyers and developers for the property have yet to be determined
- Focus should be put on the redevelopment of land before developing any unused land
- Desire expressed for more bike lanes, bike racks and bike infrastructure such as an East Coast Greenway extension
- Age restricted housing adjacent to Phillips Farms was generally well received
- Further development on the Pratt & Whitney Aircraft Club would need to be heavily buffered from neighboring residential district to prevent unmanageable traffic conditions for resident

5. Break Out Station - Focus Areas:

Some of the attendee's comments and concerns for the focus areas breakout session are as follows:

- A desire was expressed to tear down the underutilized shopping center and Showcase Cinemas
- Concern was expressed over the prominent focus on residential development over retail development such as restaurants and entertainment
- A desire was expressed for more personal services, goods stores, and popular chain restaurants, and coffee shops
- A concern was expressed about the impact of new commercial development on existing residential housing in close proximity and its impact and market value
- Support was shown for a CT *fastrak* connector station along the corridor
- Concern was expressed towards closing access to Lawrence Street from Route 15, which was viewed as an important local connection from the highway to the neighborhood
- Concern expressed removing travel lanes from Burnside Avenue to provide bike lanes (aka 'Road Diet')
- A suggestion was made to poll the town to find out what kinds of development would be most desirable and then to establish interested developers for those businesses prior to implementing zoning changes
- Increased access to skating, cycling, and jogging could make the town more of a destination spot for outdoor recreation
- Desire expressed for increased outdoor recreation for kids in the form of soccer, hockey, football, and baseball fields.

- Desire expressed for increased support of farm and agriculture centered green space.
- Showcase Cinemas lot could be converted to an industrial and/or business use destination with included restaurants
- Showcase Cinemas lot could be converted to an entertainment center including performance theater

6. Summary and Concluding Statements:

Transportation:

Casey Hardin of TranSystems briefly summarized the results of his session stating that access management was one of the biggest issues expressed by the public and would require further investigation. Much of the public expressed an interest in finding a way to establish a connection for the Charter Oak Greenway throughout the Town. Lastly, the most prominent concern expressed by the public was in regards to existing and increased danger to the public due to excess traffic.

Land Use and Zoning:

Rebecca Augur of Milone and MacBroom briefly summarized the results of her session stating that the attendees provided mostly positive support for an increased residential development and the improvement of existing residential development. There was also a very positive response to the inclusion of a community park and outdoors recreation areas in the zoning plan. The most concerning element of the plan appeared to be the increase in traffic that was likely to happen as a result of further commercial development.

REPORT OF MEETING

Date and Time: Thursday, June 7 2018, 7:00 PM

Location: Silver Lane Elementary School, 15 Mercer Ave, East Hartford, CT 06118

Subject: Silver Lane Corridor Study, Public Meeting #2

Attendees

NAME	ORGANIZATION	EMAIL ADDRESS
TOWN STAFF		
Eileen Buckheit	Town of East Hartford	ebuckheit@easthartfordct.gov
Jeff Cormier	Town of East Hartford	jcormier@easthartfordct.gov
Michael Daniels	Town of East Hartford	mdaniels@easthartfordct.gov
Jeff LeBeau	Town of East Hartford	mlebeau@easthartfordct.gov
STUDY TEAM		
Emily Hultquist	Capitol Region Council of Governments (CRCOG)	ehultquist@crcog.org
Jillian Massey	CRCOG	jmassey@crcog.org
Casey Hardin	TranSystems	crhardin@transystems.com
Pat Padlo	TranSystems	ptpadlo@transystems.com
Rory Fitzgerald	Fitzgerald & Halliday, Inc. (FHI)	rory.fitzgerald@fhiplan.com
Rebecca Augur	Milone and MacBroom	raugur@mminc.com
Patrick Gallagher	Milone and MacBroom	pgallagher@mminc.com

1. Introductory Presentation:

Rebecca Augur, Milone & MacBroom Project Manager, thanked the audience for attending the meeting prior to beginning the presentation. She explained the timeline for the Silver Lane Committee's work, beginning in late 2016. The study team has recently prepared a Vision for the Corridor which she shared with the audience. She noted the vision was still in draft format and open to refinement. She then presented a long term land use vision, identifying several sites for potential redevelopment. The concepts included market-rate housing and additional, small-scale, commercial development. She noted some objectives and strategies to help ensure the Town's zoning regulations support this vision. The study team has identified three separate zoning design districts for the corridor. These each provide backing to help the long term vision come to life. She walked through the three districts and identified six catalyst sites to help spur the intended development. She then introduced Casey Hardin, TranSystems Project Manager to present an update on the CRCOG Silver Lane Corridor Study (transportation study).

Casey Hardin stated by noting that one of the primary goals of the transportation study is to ensure the transportation systems supports the vision put forward by the land use study. He noted that there is a gap in the East Coast Greenway multi-use path network within the corridor. He indicated several alignments that could be used to close this gap. The committee has identified this transportation facility as an amenity that could catalyze redevelopment in the corridor. He then directed attendees to split between the four stations: Multi-Use Trail System, Residential Design, Business District, and Design District.

2. Break Out Station – Multi-Use Trail System

The following represent feedback from attendees at the Multi-Use Trail System station:

- Attendees asked whether it was possible to discuss reopening Willow Street through the Pratt & Whitney campus.

- There were some concerns about the need to acquire property to construct trails
- There were mixed opinions on the presented alignments. A new alignment was sketched out utilizing Pitkin Street.
- An attendee noted there would be safety concerns for a the 'nature preserve' due to its isolated location
- The Willow Brook may affect the design options
- Attendees supported the idea of a CT*fastrak* station within the corridor
- Many attendees noted the gaps in the sidewalk network and that street lighting would be an important addition from a public safety perspective

REPORT OF MEETING**Date and Time: Tuesday, April 30, 2019, 6:00 PM****Location: East Hartford Town Hall, 740 Main St, East Hartford, CT 06108****Subject: Silver Lane Corridor Study, Public Meeting #3****Attendees**

NAME	ORGANIZATION	EMAIL ADDRESS
TOWN STAFF		
Marcia Leclerc, Mayor	Town of East Hartford	mleclerc@easthartfordct.gov
Eileen Buckheit	Town of East Hartford	ebuckheit@easthartfordct.gov
Jeff Cormier	Town of East Hartford	jcormier@easthartfordct.gov;
Keith Chapman	Town of East Hartford	kchapman@easthartfordct.gov
STUDY TEAM		
Emily Hultquist	Capitol Region Council of Governments (CRCOG)	ehultquist@crcog.org
Caitlin Palmer	CRCOG	cpalmer@crcog.org
Kimberly Hart	Capital Region Development Authority (CRDA)	khart@crdact.net
Patrick Zapatka	Connecticut Department of Transportation (CTDOT)	patrick.zapatka@ct.gov
Casey Hardin	TranSystems	crhardin@transystems.com
Nick Mandler	TranSystems	ncmandler@transystems.com
Pat Padlo	TranSystems	ptpadlo@transystems.com

1. Introductions:

Marcia Leclerc, Mayor of East Hartford, welcomed everyone to the third public meeting hosted by the Silver Lane Advisory Committee. She outlined ongoing planning work within the past several years including the Brownfields Area Revitalization (BAR) Planning Grant and the Silver Lane Corridor Study. The BAR Grant evaluated underutilized parcels of land along Silver Lane and identified potential redevelopment scenarios. The Silver Lane Corridor Study was initiated to address safety and operational issues on Silver Lane and to assess the impact that the recommended developments would have on the transportation system. Mayor Leclerc then opened the floor to Eileen Buckheit, East Hartford's Director of Development, Emily Hultquist, CRCOG's Director of Policy & Planning, and Casey Hardin, TranSystems' Project Manager.

2. Presentation:

E. Hultquist started the presentation by explaining the nature of corridor studies and the need for them when developing a master transportation plan. She noted the study area and summarized the study's public outreach process. She noted the most recent public meeting was held on June 7, 2018.

C. Hardin summarized the work completed by the study team in the time period since the most recent public meeting. He recapped the existing conditions, noting the lack of bicyclist, pedestrian and transit amenities in the corridor. Existing traffic operations were presented, with Mr. Hardin noting that they are deemed acceptable throughout the corridor, although crash rates are elevated in certain segments and locations.

N. Mandler described the process required to develop future traffic forecasts for the design year (2040). He noted the expected increase in traffic volumes by 2040 is generally about 20-25%, with proposed

developments likely to add additional traffic, particularly in the eastern part of the corridor. The operational analysis indicates the majority of intersections will still operate acceptably. He noted that the Route 15 off-ramp to Silver Lane would likely experience back-ups that would stretch back onto the Route 15 freeway, presenting a safety issue. Based upon the analysis, the study team has evaluated the potential implementation of a road diet, reducing the number of through lanes to one in each direction (from two today). Mr. Mandler presented expected traffic operations under a road diet, noting that they remain acceptable while some locations would experience additional queueing.

Mr. Mandler noted that the study team has proposed a mixed-use path along the north side of Silver Lane from Simmons Road easterly to Main Street. This facility could be used by both bicyclists and pedestrians and would help close a gap in the East Coast Greenway that exists between the Charter Oak Greenway and Great River Park. Elsewhere in the corridor, bicycle lanes are proposed for Silver Lane. Mr. Mandler presented a series of exhibits highlighting the proposed vision for transportation improvements in the corridor.

The vision includes a recommendation to limit Gold Street to one-way northbound at Silver Lane due to the lack of available sight distance looking east from the stop bar location on Gold Street. Vehicles would not be allowed to turn onto Silver Lane from Gold Street, instead using Clement Road to exit to Silver Lane or Simmons Road.

Mr. Hardin returned to summarize recent coordination efforts with Capital Region Development Authority (CRDA) and CTDOT. Silver Lane is scheduled to be repaved during the summer of 2019 and the study team has been coordinating with CTDOT to have a partial implementation of the road diet incorporated into that work. He also noted that funding has been obtained to construct new sidewalk along Silver Lane through the CRDA.

3. Question & Answer

Mr. Hardin fielded several questions from attendees, noting the following:

- Sidewalk work being completed under CRDA funding will look to minimize re-work on Silver Lane, particularly with repaving programmed for the summer of 2019.
- Two attendees noted that they believed the study should be focused on vehicular operations rather than bicyclists and pedestrians.
- Signing and pavement markings for bicycle facilities will be installed as is the industry standard best practice at the time of implementation.
- There was one supporter of the concept for limiting Gold Street to one-way traffic northbound at Silver Lane, and one attendee who opposed the idea.

Mr. Hardin then asked the group to divide into three groups for the three workshop stations.

4. Workshop Stations

The attendees divided into three groups to review the western, central and eastern segments of the corridor. The following represents the feedback received:

- It was suggested that street lighting be improved, particularly in locations that demonstrate a crash history.

- Transit improvements should be more clearly identified on the proposed concepts.
- Narrow the crossing distance for pedestrians crossing Clement Road by using tighter curb radii or bumpouts.
- Should traffic be pushed to Clement Road due to a one-way restriction on Gold Street, traffic calming measures should be evaluated for implementation.
- Evaluate identifying dedicated cyclist and a pedestrian areas within the proposed mixed-use path
- Cyclists encouraged that additional buffer distance between the bike lanes and travel lanes be provided if possible. This could include use of a separated bike lane.
- There is a strong desire for pedestrians to cross Silver Lane from the Pratt & Whitney Aircraft Club towards Rentschler Field. A midblock crossing locations should be explored to facilitate this demand.
- Mid block-crossings should redirect pedestrians so they cannot simply walk straight across both directions of traffic.

5. **Final Q&A Period**

Members of the study team summarized the key feedback they received while moderating the workshop. Then a final question and answer section was initiated. The following represents the feedback received:

- The Town will look to advance engineering and construction for improvements to Silver Lane following completion of the study.

REPORT OF MEETING**Date and Time: Wednesday, October 10, 2019, 7:00 PM****Location: East Hartford Town Hall, 740 Main St, East Hartford, CT 06108****Subject: Silver Lane Corridor Study, Public Meeting #4****Attendees**

NAME	ORGANIZATION	EMAIL ADDRESS
STUDY TEAM		
Emily Hultquist	Capitol Region Council of Governments (CRCOG)	ehultquist@crcog.org
Caitlin Palmer	CRCOG	cpalmer@crcog.org
Patrick Zapatka	Connecticut Department of Transportation (CTDOT)	patrick.zapatka@ct.gov
Eileen Buckheit	Town of East Hartford	ebuckheit@easthartfordct.gov
Jeff Cormier	Town of East Hartford	jcormier@easthartfordct.gov
Casey Hardin	TranSystems	crhardin@transystems.com
Steve Mitchell	TranSystems	sfmitchell@transystems.com
Pat Padlo	TranSystems	ptpadlo@transystems.com

*See attached sign-in sheet and formal P&Z Commission for attendees from the public and Planning & Zoning Commission.

1. Introductions:

Emily Hultquist, CRCOG's Director of Policy & Planning, welcomed everyone to the fourth and final public meeting hosted by the Silver Lane Advisory Committee. She outlined ongoing planning work within the past several years including the Brownfields Area Revitalization (BAR) Planning Grant and the Silver Lane Corridor Study. The BAR Grant evaluated underutilized parcels of land along Silver Lane and identified potential redevelopment scenarios. The Silver Lane Corridor Study was initiated to address safety and operational issues on Silver Lane and to assess the impact that the recommended developments would have on the transportation system.

2. Presentation:

E. Hultquist started the presentation by explaining the nature of corridor studies and the need for them when developing a master transportation plan. She noted the study area and summarized the study's public outreach process. She noted the most recent public meeting was held on April 30, 2019.

C. Hardin summarized the work completed by the study team in the time period since the most recent public meeting. He recapped the existing conditions, noting the lack of bicyclist, pedestrian and transit amenities in the corridor. Existing traffic operations were presented, with Mr. Hardin noting that they are deemed acceptable throughout the corridor, although crash rates are elevated in certain segments and locations.

C. Hardin described the process required to develop future traffic forecasts for the design year (2040). He noted the expected increase in traffic volumes by 2040 is generally about 20-25%, while potential developments would add additional traffic. The operational analysis indicates that the majority of intersections will still operate acceptably. He noted that the Route 15 off-ramp to Silver Lane would likely experience back-ups that would stretch back onto the Route 15 freeway, presenting a safety issue. The study team evaluated the potential implementation of a road diet, reducing the number of through lanes

to one in each direction (from two today). C. Hardin presented expected traffic operations under a road diet, noting that they remain acceptable while some locations would experience additional queueing. Since the last public meeting, C Hardin explained that a road diet has been implemented under the Vendor-in-Place (VIP) pavement rehabilitation program by CTDOT.

C. Hardin noted that the study team has proposed a mixed-use path along both sides of Silver Lane throughout the corridor. This facility could be used by both bicyclists and pedestrians and would help close a gap in the East Coast Greenway that exists between the Charter Oak Greenway and Great River Park. EC. Hardin, presented a series of exhibits highlighting the proposed vision for transportation improvements in the corridor, noting modifications based upon public input from April's Public Information Meeting.

The vision includes a recommendation to limit Gold Street to one-way northbound at Silver Lane due to the lack of available sight distance looking east from the stop bar location on Gold Street. Vehicles would not be allowed to turn onto Silver Lane from Gold Street, instead using Clement Road to exit to Silver Lane or Simmons Road.

Mr. Hardin summarized recent coordination efforts with Capital Region Development Authority (CRDA) and CTDOT. He noted that funding has been obtained to construct new sidewalks along Silver Lane through the CRDA.

3. Question & Answer

Mr. Hardin fielded several questions from attendees, noting the following:

- Sidewalk work being completed under CRDA funding is programmed for the 2020 construction season. CRCOG funded the Silver Lane Study; any follow-on design work, engineering, and construction would require the town of East Hartford to secure additional funding sources.
- One attendee opinion was that the study should have focused more on bicyclists rather than vehicular operations. In addition to bicycle and pedestrian shared path, a continuous wide shoulder should have been designed thru entire study corridor to accommodate experienced cyclists that enjoy higher speed ride.
- One attendee raised concern with current and future design of Roberts Street intersection. He believes it's unsafe with Silver Lane approaches widening to two thru lanes, and within several hundred feet of intersection dropping down to single thru lanes.

MARCIA LECLERC
MAYOR

DEVELOPMENT
DEPARTMENT

TOWN OF EAST HARTFORD

740 Main Street

East Hartford, Connecticut 06108

(860) 291-7300

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www.easthartfordct.com

East Hartford Silver Lane Advisory Committee

Kick-Off Meeting Summary

Thursday, December 15, 2016

2:00 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Frank Collins, Economic Development Commission; Tom York, Goman & York; Robin Pearson, Redevelopment Agency; Todd Andrews, Goodwin College; Marcia Leclerc, Mayor; Dan Matos, The Matos Group; James Matos, The Matos Group; Craig Stevenson, CTC; MaryEllen Dumbrowski, CT River Valley Chamber; Rebecca Augur, Milone & MacBroom, Inc. (MMI); Mike Zuba, MMI; Tim Bockus, DPW Director; Mary Ellen Kowalewski, CRCOG; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner; Casey Hardin, TranSystems

ABSENT – Chad Freitas, Peter Bonzani

CALL TO ORDER

The Mayor called the meeting to order at 2:00 pm.

The Mayor first gave an overview of the Silver Lane BAR grant, history behind it, and the numerous other recent and ongoing efforts in the corridor. These efforts include the Horizon outlet project and second phase development at Rentschler Field, the successful receipt of \$12 million in State Urban Act funding, the completion of the Willowbrook Study, the successful receipt of the U.S. Environmental Protection Agency grant of \$200,000, the BAR grant, the CRCOG Transportation Study, the submission of the Casino RFP package, and the passage of the town referendum items which include \$3 million for development activities on Silver Lane and the City and Town Development Act. The launch of the committee had been delayed in order to realize the synergy provided with the transportation grant from CROG which will study the same area of the corridor. The Mayor explained that one of the goals may be to create a new

redevelopment zone and to this end, she has asked Robin Pearson as the chair of the Redevelopment Agency to chair this committee, and Robin has agreed.

The group made introductions.

Eileen Buckheit and Milone and MacBroom, Inc. (MMI) reviewed the 16-month planning process, milestones and committee's role. The BAR planning process will rely on market, environmental and engineering analyses to identify opportunities and constraints to redevelopment and form the basis for alternative planning concepts. The expected outcome of the plan is a preferred development program with recommendations and strategies that could be adopted and administered by the East Hartford Redevelopment Agency. The BAR plan will dovetail with the ongoing CRCOG Silver Lane transportation corridor study.

The Committee engaged in a SWOT Analysis about the corridor and its potential for redevelopment, which all the committee members contributed comments to and is summarized as follows:

Strengths

- Connectivity - major east-west connector; connect to Hartford, Manchester, connect residential to riverfront
- Greenway/ trail and pedestrian connections.
- Accessibility and visibility – highways, transit, interstate frontage for redevelopment candidates
- Significant employment growth within the corridor – Pratt campus expansion, outlets development
- Diversity of housing along corridor - rental and ownership opportunities
- Existing infrastructure - water, sewer, gas and highway ramp system
- Stable political environment with excellent town staff with long term vision
- Demographic trends to help form identity along cultural aspects
- Undeveloped land
- State Roadway – potential funding for improvements
- Opportunity to acquire and/or presence of properties ripe for redevelopment
- Strength and stability of residential neighborhood east of Forbes to support local businesses
- Phillips Farm as example of quality development
- Portion currently in Enterprise Zone
- CTfastrak expansion
- Town has great ethnic restaurants, cultural diversity to build upon and market

Weaknesses

- Visual/ aesthetics - conditions of properties, visually displeasing
- Demographically challenged
- Current roadway in bad shape – lacks pedestrian infrastructure and connections to trail
- Lack of traffic - Forbes ramp closure and I-384; lack of professional offices; limited traffic counts deter retailers
- Regional competition – Buckland Hills, West Farms – Silver Lane changed into neighborhood based commercial, how can it become regional again?
- Aged infrastructure – may scare off development community
- Drainage issues - development areas below drainage systems; high water table limits infiltration on site
- Individual goals of land owners
- Current businesses - Image and perceptions/low rent; lack of professional office
- Disconnect from CT River
- Disconnect from employment centers
- Tax base – mill rate challenged
- Current zoning – most tightly constrained dimensional requirements in Town
- Limited control of ROW – need for an understanding with the State to support infrastructure

Opportunities

- Rentschler Field – could be better used through better partnerships, but currently draws 20K to the corridor – opportunity to create positive impressions
- Derelict properties - opportunities to acquire and follow through on vision
- Cyclist gateway to Hartford Downtown – build upon
- Public transit linkage and enhancement
- Greater Hartford lacks millennial-friendly assets - opportunity to capture and capitalize on millennials
- CT Center for Advanced Technology (CCAT)
- To increase access and connectivity within corridor – north south feeders, midpoint access - better connect to community
- Recent voter approval of CT City and Town Development Act and funding to implement
- State of CT maintenance garage located – Clement Rd./ interstate frontage

Threats

- Economic climate – regional market share, current underlying commercial demand, state and town fiscal realities – scarce resources
- Number of rental properties
- Lack of site control in corridor
- Zoning limitations
- Watershed, flooding and drainage issues
- Inland wetland regulations a hindrance to development
- Legislative challenges to innovative approaches such as land banking development rights on properties challenged by wetlands/ drainage, etc.
- Uncertainty over potential catalyst projects
- Lack of implementation – don't want this plan to sit on a shelf, need to get decision makers involved now, and focus on feasible, actionable and implementable projects
- Ensure vision is malleable and realistic for the private sector and market – not overly limiting on opportunities or financially infeasible in design guidelines
- Address private sector hurdles
- East Hartford's image statewide
- Lack of overall marketing campaign and strategy

Next steps in the process:

- Data collection and analysis, including field surveys
- Meet in Feb. to review Comprehensive Existing Conditions Analysis, date not determined
- Market Analysis to follow

ADJOURNMENT

Meeting concluded 3:20pm.

MARCIA LECLERC
MAYOR

DEVELOPMENT
DEPARTMENT

TOWN OF EAST HARTFORD

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Tuesday, February 28, 2017

4:00 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Frank Collins, Economic Development Commission; Tom York, Goman & York; Robin Pearson, Redevelopment Agency; Todd Andrews, Goodwin College; Marcia Leclerc, Mayor; Craig Stevenson, CTC; MaryEllen Dombrowski, CT River Valley Chamber; Peter Bonzani, Planning and Zoning Commission; Chad Freitas, Resident Representative; Rebecca Augur, Milone & MacBroom, Inc. (MMI); Pat Gallagher, MMI; Tim Bockus, DPW Director; Mary Ellen Kowalewski, CRCOG; Jillian Massey, CRCOG; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner

ABSENT – Dan Matos, James Matos

CALL TO ORDER

Chair, Robin Pearson called the meeting to order at 4:00 p.m.

Motion by Todd Andrews to approve the minutes of the December 15, 2016 meeting, seconded by Frank Collins. Approved.

Presentation

Rebecca Augur and Pat Gallagher reviewed the research and information gathering which has occurred since the previous meeting. MMI has begun to conduct field surveys, GIS mapping, existing condition analysis, and an inventory of sites. The goal of today's meeting would be to further discuss priority sites for wetland delineation and study and begin our work toward a build-out analysis.

The committee reviewed existing conditions analyses for the corridor, including: land use, zoning, current business inventory, vacancies, residential units, infrastructure, and environmental constraints.

The buildout analysis was discussed. Several assumptions are embedded in the analysis, from environmental constraints to which properties are redevelopment candidates. The Committee discussed several properties that are potential redevelopment candidates, including the Showcase Cinemas, Silver Lane Plaza, remaining residential parcels currently zoned commercial, the bowling alley, Futtner family properties, residential parcels adjacent to the west of Philips Farm, parcels at the entrance to East Hartford Boulevard, and older multi-family developments in the western portion of the corridor. In addition, a few vacant properties were discussed, including 825 Silver Ln, and properties fronting Silver between Mercer and Whitney.

There was discussion around which properties the Committee would like to have graphic wetlands delineations on, with a strong interest in having properties to the south of Silver Lane between Rentschler Field and Philips Farm. MMI indicated they would have to review how much could be delineated within the project budget.

The Committee discussed the need to understand the anticipated impacts of the Horizon Group's outlet center, in particular on transportation and traffic, as well as the market in the corridor. In addition, the Committee discussed the potential for another exit off of 84 within the corridor to serve the cinema and silver lane plaza areas. DOT has previously indicated this was unlikely; however, there may be some willingness to review the idea as plans for CTfastrak East of the River, proceed, and the CROG Silver Lane Transportation Study gets underway.

Next steps in the process:

- Review sites described as priorities for wetland delineation.
- Continue work on refining build-out analysis.
- Begin work on marketing analysis and developers panel.
- Corridor Branding discussion

ADJOURNMENT

Meeting concluded 5:15pm.

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Tuesday, May 23, 2017

4:00 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Frank Collins, Economic Development Commission; Tom York, Goman & York; Robin Pearson, Redevelopment Agency; Todd Andrews, Goodwin College; Craig Stevenson, CTC; Peter Bonzani, Planning and Zoning Commission; Chad Freitas, Resident Representative; Rebecca Augur, Milone & MacBroom, Inc. (MMI); Pat Gallagher, MMI; Tim Bockus, DPW Director; Emily Hultquist, CRCOG; Casey Hardin, Transystems, Paul Mainuli and Nathan Quesnel, Board of Education; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner

VIA PHONE – Dan Matos

ABSENT – Mayor Leclerc, James Matos, MaryEllen Dombrowski

CALL TO ORDER

Chair, Robin Pearson called the meeting to order at 4:00 p.m.

Motion by Frank Collins to approve the minutes of the February 28, 2016 meeting, seconded by Todd Andrews. Approved.

UPDATE

Eileen Buckheit and Paul Mainuli discussed the Working Cities Challenge which is centered around the Silver Lane School neighborhood. The Board of Education and the Town are partnering with community organizations, regional boards and commissions, Goodwin College, CCAT and many others, to define a need in the neighborhood and a “systems change” to address it. East Hartford has been successful in the first round and

awarded \$15,000. The final application is due in October. The land use study and transportation studies will be of great assistance.

Presentation

Rebecca Augur and Pat Gallagher from MMI reviewed the Market Assessment. This includes the market areas, retail market, housing market, and conclusions.

The presentation continued with a discussion of the wetlands investigation which occurred on the south side of Silver Lane.

Rebecca then moved to a discussion of the maps of outlined vacant and potential development sites.

Members broadly discussed the maps, but stated that they did not have enough time to comment in light of the large amount of information presented.

Emily Hultquist from CRCOG introduced the transportation consultant, Casey Hardin from Transystems. They will be looking at the full array of transportation systems along the corridor, including vehicle, bike, and pedestrian. They will work collaborative with Milone and McBroom and utilize information from the land use study. They will be using the Advisory Committee and will be conducting a series of outreach events to gather feedback.

Next steps in the process:

- Rebecca would send out questions to the members for consideration at the next meeting in order to frame the discussion.
- Meeting in next 3 or so weeks to continue opportunity area discussion.

ADJOURNMENT

Meeting concluded 5:30 pm.

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MAYOR

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Wednesday, June 21, 2017

4:00 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Frank Collins, Economic Development Commission; Robin Pearson, Redevelopment Agency; Rebecca Augur, Milone & MacBroom, Inc. (MMI); Pat Gallagher, MMI; Tom Daly, MMI; Emily Hultquist, CRCOG; Casey Hardin, Transystems, Mayor Leclerc, James Matos, The Matos Group; Dan Matos, The Matos Group; Matt Larson Senior Secretary Office of the Mayor; MaryEllen Dombrowski, CT River Valley Chamber; Patrick Zapatka, CT Department of Transportation (CT DOT); Peter Brazaitis, CT DOT; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner

ABSENT – Tom York, Peter Bonzani, Craig Stevenson, Tim Bockus, Chad Freitas, Todd Andrews

CALL TO ORDER

Chair, Robin Pearson called the meeting to order at 4:00 p.m.

Motion by Frank Collins to approve the minutes of the February 28, 2016 meeting, seconded by Mayor Leclerc. Approved.

Presentation

Rebecca Augur and Pat Gallagher from MMI introduced Tom Daly from MMI, an engineer specializing in site design and stormwater management. Tom Daly reviewed the conditions and delineation work MMI completed along the south portions of Silver Lane. He concluded that the amount of study and stormwater technology required to facilitate development in this area would require a significant investment that might

exceed the anticipated return given a limited market. The presentation continued with a discussion of the wetlands investigation which occurred on the south side of Silver Lane.

Rebecca then moved to a discussion reviewing the results of the market analysis and short and long-term visions for the corridor, including the stated vision in the Plan on Conservation and Development. Rebecca described that MMI also looked closer at UTC job and supplier expansions, Outlet Shoppes, and CTfastrak impacts.

Rebecca and Patrick proposed a vision statement. The group agreed it was a good start but needed some wording changes including to note the corridor's connection to Hartford.

MMI discussed opportunity sites in the neighborhood node, "Renstschler Gateway", and the commercial core.

Next steps in the process:

- A doodle poll will be sent out for another meeting this summer.
- Next meeting will include a developers panel.

ADJOURNMENT

Meeting concluded 5:30 pm.

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MAYOR

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Wednesday, August 23, 2017

4:00 pm

Town Council Chambers

PRESENT - Frank Collins, Economic Development Commission; Robin Pearson, Redevelopment Agency; Todd Andrews, Goodwin College; Rebecca Augur, Milone & MacBroom, Inc. (MMI); Pat Gallagher, MMI; Emily Hultquist, CRCOG; Casey Hardin, Transystems, Mayor Leclerc, James Matos, The Matos Group; Dan Matos, The Matos Group; Eileen Buckheit, Development Director; Rich Gentile, Asst. Corporation Counsel; Paul Mainuli, Board of Education

ABSENT – Tom York, Peter Bonzani, Craig Stevenson, Chad Freitas, Mary Ellen Dombrowski, Tim Bockus, Jeff Cormier

DEVELOPER PANEL GUESTS - Michael Freimuth, Capital Region Development Authority; Mark Forlenza, Spinnaker Residential; Mike Goman, Goman + York; John Milone, Milone and MacBroom, Inc.

CALL TO ORDER

Chair, Robin Pearson called the meeting to order at 4:05 p.m.

Presentation

The committee panelists offered the following opinions and insights regarding opportunities and constraints in the Silver Lane Corridor based on their collective experience in development.

- Retail in general is overbuilt/ under-demolished.
- Office market in the region is not currently strong.

- Industrial uses present an opportunity because of Pratt; however, makes more sense closer to Pratt/ Main Street/ Goodwin, not on the eastern end of the corridor. Pratt has 80 acres reserved on its campus for vendors.
- There is opportunity for market-rate residential in the corridor. Three-story walk-up product that is amenity-rich (both within units and within complex) and creates a sense of place.
 - Investors turning are currently getting higher financial yields on this type of suburban residential
 - Rents would need to achieve about \$225 per square foot
 - Developer would likely look for 25-35 units per acre
 - Hartford apartment development is a different market from the more suburban, low-rise product that would make sense in the corridor
 - Explore opportunities related to changing demographics
- Financial institutions currently not proponents of residential condominium products. Fee simple is preferred, and there is some latent millennial demand for fee-simple housing product
- Opportunity for food and beverage – locally-owned regional chain restaurants (like a Max's group), or neighborhood restaurant – not a lot of developers active in the region on re-using old strip style retail for multi-tenant restaurant, but it's happening elsewhere, and there's opportunity here. Food and beverage and contribute to sense of place and stimulate activity. Incorporating co-working space also happening in these types of redevelopments.
- Opportunity for sports and recreation uses – indoor fitness centers/ fields, sports, and related uses – they are amenities that contribute to sense of place, and help attract residential development. Fits in with trail, Cabela's and stadium in the corridor.
- Long-term opportunity for medical in the corridor. Current market is in flux due to uncertainty at federal level; however, the need exists and will continue to increase due to aging demographic.
- Property assemblage is the most difficult part of redevelopment. If the Town has the will to do a Redevelopment Plan and assemble properties to market a project of some scale – 60 or 70+ acres – that opportunity would stand out in the marketplace, as it is hard to find in the region. That also would enable the Town to push the development that it wants to see in the corridor.
- Hartford residential developments are not seen as an impediment to residential development in this corridor.

- Focus on simplifying the regulatory process as much as possible. Developers like streamlining approval process, zoning regulations, and certainty of approvals and schedule.
- Concentrate on overall “placemaking”. Residential and sense of place issues should be looked at simultaneously.
- Recommend pursuing CTfastrak station in the corridor aggressively.

Next steps in the process:

- A doodle poll will be sent out for a September meeting.
- Next meeting will focus on transportation.

ADJOURNMENT

Meeting concluded 5:30 pm.

MARCIA LECLERC
MAYOR

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Wednesday, September 27, 2017

4:00 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Mayor Leclerc ; Frank Collins, Economic Development Commission; Tom York, Goman & York; Robin Pearson, Redevelopment Agency; Todd Andrews, Goodwin College; Chad Freitas, Resident Representative; Dan Matos and James Matos, The Matos Group; Rebecca Augur, Milone & MacBroom, Inc. (MMI); Tim Bockus, DPW Director; Emily Hultquist, Jillian Massey, and Mary Ellen Kowalewski, CRCOG; Casey Hardin and Kim Rudy, Transystems,; Paul Mainuli, Board of Education; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner; Rich Gentile, Assistant Corporation Counsel; Patrick Zapatka, DOT

ABSENT – Peter Bonzani, MaryEllen Dombrowski, Craig Stevenson

CALL TO ORDER

Meeting was called to order at 4:00 p.m.

UPDATE

Rebecca Augur provided a developers panel recap for the committee. There was a confirmation by the panel that market-rate residential is a good opportunity for the corridor. They should be amenity rich and create a sense of place. It is different that the market from Downtown Hartford, more of a suburban, low-rise model. Developers would look for 25-35 units per acre. Good opportunity for food and beverage industry, sports and recreation, and medical. Property assemblage more difficult, but would create a standout opportunity in the region. CTfastrak should be aggressively pursued.

Presentation

Emily Hultquist provided some background on the transportation study, including the scope of work and timeline. The study is integrated with the land-use planning being conducted by MMI. Casey Hardin explained first step is an existing conditions analysis. He provided details on how the current corridor operates with daily traffic, crash data, bus routes and stops, bicycles and pedestrians, and a detailed look at each segment of the corridor.

Next steps in the process:

- Next AC meeting will be in October
- First public meeting will be in near future
- Newsletter

ADJOURNMENT

Meeting concluded 5:30 pm.

MARCIA LECLERC
MAYOR

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Wednesday, December 6, 2017

4:00 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Mayor Leclerc ; Robin Pearson, Redevelopment Agency; Tom York, Goman & York; Dan Matos, The Matos Group; Todd Andrews, Goodwin College; Rebecca Augur and Patrick Gallagher, Milone & MacBroom, Inc. (MMI); Tim Bockus, DPW Director; Emily Hultquist, CRCOG; Casey Hardin, Transystems; Paul Mainuli, Board of Education; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner; Rich Gentile, Assistant Corporation Counsel; Patrick Zapatka, DOT; Inessa Dayrdora, Jimmy Burt, and Jeremiah O'Leary, Digital Surgeons.

ABSENT – Chad Freitas, Mary Ellen Dombrowski, James Matos, Peter Bonzani, Frank Collins

CALL TO ORDER

Meeting was called to order at 4:05 p.m.

Transportation

Casey Hardin began with a discussion with a review of the assumptions of the transportation no-build scenario. This is a scenario which reflects what could reasonably occur in the foreseeable future if the transportation project were not to proceed. This scenario includes background growth and development slated to move ahead. The outlet shops will remain included, square footage for additional development at Rentschler Field (either second phase of outlets or residential units), new employees at Pratt & Whitney, increased occupancy at Silver Lane Plaza, and

development at Showcase Cinemas. The parameters are development to the year 2040. Casey and Emily also reviewed their outreach meetings status.

Conceptual Redevelopment Plan

Rebecca Augur and Patrick and update to a series of concepts for mixed-use redevelopment of large areas of the corridor. The concepts use maximum development potential, assuming revised zoning and transportation issues will be investigated. These plans are also for the year 2040. The Committee selected 6 sites for engineering feasibility analysis. We are moving toward a public meeting in January.

Branding

Representatives from Digital Solutions provided the Committee with some words to begin visioning and branding for the Corridor.

Next steps in the process:

- One more AC meeting will be held before the public meeting.
- First public meeting will be in January
- Branding issues to continue

ADJOURNMENT

Meeting concluded 5:45 pm.

MARCIA LECLERC
MAYOR

DEVELOPMENT
DEPARTMENT

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740 Main Street

East Hartford, Connecticut 06108

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Wednesday, January 10, 2018

4:00 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Mayor Leclerc; Robin Pearson, Redevelopment Agency; Tom York, Goman & York; James Matos, The Matos Group; Todd Andrews, Goodwin College; Val Povinelli, Planning and Zoning Commission; Frank Collins, Economic Development Commission; Craig Stevenson, CTC; Rebecca Augur and Patrick Gallagher, Milone & MacBroom, Inc. (MMI); Tim Bockus, DPW Director; Emily Hultquist, CRCOG; Casey Hardin, Transystems; Paul Mainuli, Board of Education; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner; Rich Gentile, Assistant Corporation Counsel; Patrick Zapatka, DOT; Inessa Dayrdora, Jimmy Burt, and Jeremiah O'Leary, Digital Surgeons.

ABSENT – Chad Freitas, Mary Ellen Dombrowski, Dan Matos, Peter Bonzani.

CALL TO ORDER

Meeting was called to order at 4:00 p.m.

Prep Session for the public workshop to be held January 30, 2018, at 7 p.m.

Discussion of public outreach which will consist of a newsletter, flyer distribution and a survey. The Town has sent a letter to property owners and will share the list with CRCOG. The Town has sent out a press release and will contact boards and commissions. A direct reach-out will be made to the school, Goodwin College, Bike/Ped Organizations, Phillips Farms, and several business/property owners.

The meeting agenda was reviewed. The meeting will consist of an introduction and background, break out groups and wrap-up/next steps.

The introduction will introduce ongoing studies and efforts, existing conditions review for both land use and transportation. We will then discuss recent developments, underutilized and vacant properties, environmental constraints, and the market study results.

The break-out groups will be 15-20 minutes each. They will include transportation, vision statement, long-term land use vision, and focus areas.

The committee members should spread out among the break out groups, facilitate in keeping the conversation moving and productive, and listen to feedback and questions.

Branding

Representatives from Digital Solutions provided the Committee with Three options for branding. The Committee discussed their top choices.

Next steps in the process:

- Public meeting on January 30, 2018
- Outreach to the public

ADJOURNMENT

Meeting concluded 5:20 pm.

MARCIA LECLERC
MAYOR

DEVELOPMENT
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TOWN OF EAST HARTFORD

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Wednesday, April 4, 2018

4:00 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Mayor Leclerc; Robin Pearson, Redevelopment Agency; Tom York, Goman & York; Dan Matos and James Matos, The Matos Group; Todd Andrews, Goodwin College; Val Povinelli, Planning and Zoning Commission; Frank Collins, Economic Development Commission; Craig Stevenson, CTC; Mary Ellen Dombrowski, CT River Valley Chamber; Rebecca Augur and Patrick Gallagher, Milone & MacBroom, Inc. (MMI); Tim Bockus, DPW Director; Emily Hultquist and Jillian Massey, CRCOG; Casey Hardin and Kimberly Rudy, Transystems; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner; Rich Gentile, Assistant Corporation Counsel; Patrick Zapatka, DOT;

ABSENT – Chad Freitas, Paul Mainuli

CALL TO ORDER

Meeting was called to order at 4:00 p.m.

Short review of the first public meeting in January. Very good attendance and feedback from the participants.

Review of transportation study development assumptions which includes development at Rentschler Field, Pratt Engineering Center, and Silver Lane Plaza. Next steps are to finalize the future conditions and begin alternatives.

Recap given regarding the status of the outlet mall development and urban act grant. In light of these events, a reminder of the market study was given. The market study identified weaknesses in the east end of Silver Lane. The area needs more local

spending power to support retail which can be found with new employment and housing.

Rebecca and Patrick reviewed our vision for the corridor and our initial long-term land use vision. We then reviewed our revisions which we made in January and we also began some discussions regarding zoning changes to reflect our vision. The committee also reviewed our long-term vs. short-term goals.

Engineering feasibility was conducted on six sites which align with our short-term priorities. Each site was reviewed with discussion and feedback.

The committee brainstormed on our three top goals for the corridor and keeping those in mind, were asked to prioritize the top site. Results would be reviewed and presented to the committee.

Next steps in the process:

- Zoning concepts
- Strategies based on the results of April meeting
- Next Advisory Committee meeting in May
- Next public meeting in early June

ADJOURNMENT

Meeting concluded 5:40 pm.

MARCIA LECLERC
MAYOR

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TOWN OF EAST HARTFORD

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Tuesday, May 15, 2018

4:00 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Mayor Leclerc; Robin Pearson, Redevelopment Agency; Dan Matos, The Matos Group; Todd Andrews, Goodwin College; Val Povinelli, Planning and Zoning Commission; Frank Collins, Economic Development Commission; Craig Stevenson, CTC; Patrick Gallagher, Milone & MacBroom, Inc. (MMI); Emily Hultquist and Jillian Massey, CRCOG; Casey Hardin, Transystems; Paul Mainuli, Board of Education; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner; Rich Gentile, Assistant Corporation Counsel;

ABSENT – Mary Ellen Dombrowski, James Matos, Tom York, Chad Freitas

CALL TO ORDER

Meeting was called to order at 4:00 p.m.

Eileen provided a brief review of the recent developments regarding the Showcase Cinemas site. A proposal for the town's purchase of the site was referred to the Town Council for action. It is expected to be referred to the Real Estate Acquisition and Disposition subcommittee.

Review of transportation study development status. The Town, with assistance of Casey, is trying to obtain some assumptions for development at Pratt & Whitney for Rentschler Field. A new UTC representative has indicated that there are no firm plans for the site that they can share at this time. Casey and Emily will discuss ways to move forward including possibly using the OSTA approval from the outlet center.

Patrick reviewed the Committee's prioritized goals and prioritization of objectives. We then reviewed existing zoning and reviewed new zoning possibilities for the corridor. The corridor can be generally separated into residential design district, Silver Lane Business, and Silver Lane Design District. A review of the basics of each district was given.

The Committee reviewed other strategies for development including identifying active developers in the Hartford region, host information session, marketing, and continued outreach to residents.

Committee members were asked to provide feedback on notecards regarding anything they felt was missing from our strategies.

Our next meeting will be a public meeting on June 7th at Silver Lane School. Outreach efforts will include advertising, outreach to previous attendees, and others.

Next steps in the process:

- Zoning concepts
- Next Advisory Committee is public meeting June 7th at Silver Lane School

ADJOURNMENT

Meeting concluded 5:30 pm.

MARCIA LECLERC
MAYOR

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Tuesday, July 24, 2018

4:00 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Mayor Leclerc; Dan Matos and James Matos, The Matos Group; Todd Andrews, Goodwin College; Tom York, Goman and York; Val Povinelli, Planning and Zoning Commission; Frank Collins, Economic Development Commission; Craig Stevenson, CTC; Rebecca Augur, Patrick Gallagher, Milone & MacBroom, Inc. (MMI); Emily Hultquist, CRCOG; Casey Hardin, Transystems; Paul Mainuli, Board of Education; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner; Rich Gentile, Assistant Corporation Counsel; Keith Chapman, Director of Public Works; Amy Peltier, East Hartford CONNects

ABSENT – Robin Pearson, Mary Ellen Dombrowski

CALL TO ORDER

Meeting was called to order at 4:00 p.m.

The results of the public meeting at Silver Lane School on June 7th was reviewed.

Casey Hardin provided an update on the bike meeting which was held to discuss the trail gap and the “Pratt” connection issue. Casey also reviewed the CRDA funding and the preliminary scope of the funding. We are hoping to have another public meeting in the fall of this year.

Patrick provided a summary and recap of the planning study. The report will be finalized and sent to the town.

Eileen stated that Jeff will begin to work with the Planning and Zoning Commission to discuss some rezoning concepts for Silver Lane. We will start with a workshop

Next steps in the process:

- Report finalized
- P & Z workshop

ADJOURNMENT

Meeting concluded 5:15 pm.

MARCIA LECLERC
MAYOR

DEVELOPMENT
DEPARTMENT

TOWN OF EAST HARTFORD

740 Main Street

East Hartford, Connecticut 06108

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www.easthartfordct.com

East Hartford Silver Lane Advisory Committee

Meeting Summary

Tuesday, October 17, 2018

4:00 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Mayor Leclerc; Robin Pearson, Redevelopment Agency; Todd Andrews, Goodwin College; Val Povinelli, Planning and Zoning Commission; Frank Collins, Economic Development Commission; Craig Stevenson, CTC; Emily Hultquist, CRCOG; Casey Hardin, Transystems; Paul Mainuli, Board of Education; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner; Rich Gentile, Assistant Corporation Counsel; Keith Chapman, Director of Public Works; James Kodman, Pratt & Whitney; Patrycja Padlo, Transystems

ABSENT – Dan Matos, James Matos, Tom York, Robin Pearson, Mary Ellen Dombrowski

CALL TO ORDER

Meeting was called to order at 4:00 p.m.

Eileen Buckheit and Mayor Leclerc provided an update on corridor activities, explained the recent developments with state bond commission funding and the Capital Region Development Authority. Eileen explained the Showcase Cinema project status and the due diligence activities underway. Also briefly discussed was the vacant house at Warren and Silver Lane. Jeff described the Planning and Zoning review of Showcase Cinemas and the 8-24 approval which is needed to acquire the building.

Casey provided an update on the transportation study. We briefly reviewed the BAR study recommendations.

Casey and several advisory committee members attended a bike/walk audit of the corridor. The audit was led by Anthony Cherolis from Transport Hartford. This assisted in gaining a greater understanding of pedestrian/bike challenges and existing conditions. Casey reviewed future traffic forecasting. Several sites were reviewed including Mercer Avenue intersection, Warren Drive, Roberts Street, 825 Silver Lane, Showcase Cinemas, and Futtner Farms.

Casey also began discussion about a potential road diet for the corridor. CTDOT will be beginning the process of repaving the corridor in 2019. Casey also reviewed the trail system, the gap, and CRDA streetscape project.

Next steps in the process:

- Finalize future conditions traffic analysis
- Alternatives for development
- CRDA Streetscape design
- Next meeting Dec 5th at 3:00pm

ADJOURNMENT

Meeting concluded 5:30 pm.

MARCIA LECLERC
MAYOR

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TOWN OF EAST HARTFORD

740 Main Street

East Hartford, Connecticut 06108

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Wednesday, December 5, 2018

3:00 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Mayor Leclerc; Robin Pearson, Redevelopment Agency; Dan Matos, James Matos, The Matos Group; Val Povinelli, Planning and Zoning Commission; Tom York, Goman and York; Craig Stevenson, CTC; Emily Hultquist, CRCOG; Casey Hardin, Nicholas Mandler and Samantha Scharpf, Transystems; Paul Mainuli, Board of Education; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner; Rich Gentile, Assistant Corporation Counsel; Keith Chapman, Director of Public Works; James Kodman, Pratt & Whitney; Kim Hart, CRDA; Amy Peltier, East Hartford CONNects;

ABSENT – Todd Andrews, Frank Collins, Mary Ellen Dombrowski

CALL TO ORDER

Meeting was called to order at 3:00 p.m.

Eileen Buckheit and Mayor Leclerc provided an update on Showcase Cinemas and the Town Council approval to move forward on the acquisition. Eileen described the next several steps and our partnership with CRDA. We will also be moving forward on zoning changes for the area.

Presentation by Casey Hardin, Nicholas Mandler and Samantha Scharpf of TranSystems:

- TranSystems (TS) had also been asked to look at traffic issue/crash issues at Gold Street. Existing conditions involve line of sight issues. Possible solution is to make this an "in only" location. CRCOG suggested this could be a good potential for a demonstration project before permanent installation.

- Discussed assessment of future traffic forecasts, with uncertainty about future development, TS evaluated two future scenarios: 1) Manufacturing at Rentschler, and 2) Outlets at Rentschler. Both scenarios yield very similar results.
- Analyze traffic impacts at intersections, mostly okay for urban context, one intersection problematic in both build-out scenarios (Phillips Farm Road)
- Use data to analyze existing roadway geometry, is widening necessary, and/or what can be done with re-timing of signals
- Rt 15 Off-Ramp onto Silver Lane currently backs up, with future build-out this will need to be addressed because ramp cue threatens to back up onto the highway. Possible solution is roundabout at Silver Lane.
 - CRCOG mentioned passing along a roundabout info document
- Roberts Street is already at maximum capacity essentially, adding lanes not a good solution here any improvements would likely be limited to signal retiming.
- Based on analysis, most if not all of corridor could be a candidate for a “road diet” of some variety.
- Initial traffic analysis of restriping done on Burnside reveals potential for Silver Lane
- Questions regarding Burnside Avenue as a “success” ... from traffic standpoint there has been improvement, questionable success from a bicyclist standpoint
- TS went over upcoming DOT Pavement Improvement Program scheduled for 2019 – possibility to restripe corridor to reflect proposed road diet within existing road footprint. Timing might be tricky based on schedule start for that program and completion of this project.
- CRDA - \$750,000 construction budget
- TS went over walk audit results and how pedestrian realm should be improved, thought to use CRDA money to complete some of this work but need to establish priority locations

- TranSystems putting together a preliminary design package to assess costs
- Some consensus that areas that pose a threat to public safety should be the first priority, i.e. school area should be first location for improvements
- South side on east portion should be another priority because there is such a gap - Silver Lane Plaza all the way down to Rentschler
 - Willow Brook – possibly only solution is a pedestrian bridge - culvert ends right at the end of the road - Willow Brook runs parallel for 150-200 feet
- Town Planner and P&Z should look at what needs to be done so as not to deter new developers to come in to invest in the corridor

Next steps in the process:

- Alternatives development
- CRDA Streetscape design
- Next meeting late January/early February 2019
- Next public meeting Feb 2019

ADJOURNMENT

Meeting concluded 4:25 pm.

**MARCIA LECLERC
MAYOR**

**DEVELOPMENT
DEPARTMENT**

TOWN OF EAST HARTFORD

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Wednesday, March 13, 2019

3:30 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Mayor Leclerc; Robin Pearson, Redevelopment Agency; James Matos, The Matos Group; Val Povinelli, Planning and Zoning Commission; Tom York, Goman and York; Craig Stevenson, CTC; Emily Hultquist, Caitlin Palmer, Mike Cipriano, CRCOG; Casey Hardin, Nicholas Mandler and Pat Padlo, Transystems; Paul Mainuli, Board of Education; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner; Rich Gentile, Assistant Corporation Counsel

CALL TO ORDER

Meeting was called to order at 3:30 p.m.

Eileen Buckheit provided an update on Showcase Cinemas. The town successfully has acquired the parcel and is moving along with pre-demo work and has posted an RFQ for developers.

Eileen also provided an update on a meeting that was held with the owners of Charter Oak and Silver Lane Plazas. The town is also exploring making Applegate Lane a city street (potential for EDA funding).

Emily Hultquist provided a brief introduction for the presentation and the work completed by TranSystems since the last Advisory Committee meeting.

Presentation by TranSystems:

- Casey Hardin provided an update on CRDA work and the CTDOT VIP program.

- Nick Mandler explained the potential safety benefits based on research of adding the center two-way left turn lanes.
- Nick described the traffic analysis procedure and results of the future conditions traffic analysis.
- Nick described the potential road configuration options that had been vetted throughout the corridor, which were then discussed in detail during the break out session.

The Advisory Committee broke into three different groups to look at the different sections of the corridor. A summary of all the comments provided during the workshop (report-out at the end of the break-out sessions and comments provided during the workshop) is provided below:

Section 1: From west of Route 15 to Roberts St Intersection

- Since the parcel is wide enough, the Route 15 on-ramp may be shifted farther to the west. Additionally, if the volumes are low enough that the ramp is not needed, its elimination may be considered.
- At the off-ramp, teams considered a roundabout acceptable.
 - It may not be cost-effective compared to signalization.
 - Off-ramp traffic should be slowed approaching the roundabout.
- Whichever treatment is used at the off-ramp, sidewalks on the south side should be kept as far away from the traveled way as practical.
- The diagonal parking shown may make it difficult for westbound traffic to access and exit the site, and should be vetted with business owners before being shown to the public.
- The loss of two parking spots may be more acceptable if nearby parking is made more accessible to pedestrians, e.g. via a mid-block pedestrian crossing.
- Teams agreed with the idea of extending the westbound merge from two lanes to one at least to the Dunkin Donuts driveway.
- The eastbound bike lane approaching Roberts Street should be merged with the sidewalk into the proposed mixed-use path at Clement Road and then continue with the mixed-use path on the far side of the intersection (as opposed to ending bike lanes at the intersection and requiring bicyclists to find the path on the other side).

Section 2: From Roberts St Intersection to approx. Dollar General Driveway

- The mixed-use path on the northern side of the roadway between Roberts St and Simmons should have designations for different modes: pedestrian vs. bike. Potentially including the use of textured concrete/pavement or markings.

- Gold Street: This location will be investigated as a potential demonstration location for restricting the street to one-way southbound by introducing a painted bump out. (If done, public notification required in advance)
- Investigate a mid-block crosswalk between the Pratt & Whitney Aircraft Club and the sidewalk on the south side of Silver Lane.
- A mid-block crosswalk could be warranted with build out of the residential parcel (Futtner Properties Farm)
- Investigate ways to ensure that drivers don't use the two-way left turn lane for passing.
- Evaluate installation of a rumble strips at either side of the shared left turn lane. Similarly, consider using rumble strips to help buffer bike lanes, where width is available. (MUTCD Section 6F.87)
- Consider the following revisions to the road-diet concept:
 - Remove westbound bike path (on north edge) between Clements Road and Roberts. Provide transition at Clements Road from bike path into mixed-use trail. Possibly utilize California intersection style (a shared bike and right-turn lane as opposed to bike lanes continue straight to the left of a right-turn lane).
 - The extra roadway width could allow a longer merge of the two thru lanes and better buffer between bike path and vehicular traffic in eastbound direction.
 - Could provide more snow shelf on the north side of Silver Lane

Section 3: From Dollar General Drive to Forbes

- Consider providing dedicated turn lane to development on south side of Silver Lane just to the west of Applegate Lane
- Would signalizing Applegate Lane reduce the required left-turn storage for eastbound Silver Lane?
- Consider ways to encourage potential Showcase site redevelopment to use shared access with Silver Lane Plaza.
- Look for an example of a similar length corridor where a road diet has been implemented, preferably in a similar environment.
- Identify locations where curbed medians can be provided.
- Ensure roundabout at Silver Lane Plaza could provide fourth entrance to potential development on the south side of Silver Lane (even though the site has environmental constraints).
- Any redevelopment or improvements to the Silver Lane Plaza should include or plan to accommodate for frontage improvements to improve aesthetics along the parking lot edge, such as a landscaped buffer.
- The post office would benefit from better signage / advertising.

- The Forbes Street intersection has high bus volumes due to the school on the east side of the intersection.

General Corridor-Wide Comments:

- All intersections should have 4-crosswalks.
- Include potential mid-block crosswalks
- Change the colors of the mixed-use path, bike lane, and snow shelf on the drawing to more easily distinguish between the bike lanes and the snow shelf.
- Include locations of existing bus stops and proposed bus shelters
- Provide gateway treatments into the corridor – including landscaping and street furniture, etc.
- Make Roberts and other streets more visually appealing
- Investigate usage of median islands to break up the continuous two-way left-turn

Anticipate making changes proposed by the Advisory Committee and showing revised alternatives at public hearing, anticipated late March.

ADJOURNMENT

Meeting concluded 5:15 pm.

MARCIA LECLERC
MAYOR

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East Hartford, Connecticut 06108

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East Hartford Silver Lane Advisory Committee

Meeting Summary

Tuesday, April 23, 2019

3:30 pm

Welling Conference Room – 2nd floor Town Hall

PRESENT - Val Povinelli, Planning and Zoning Commission; Craig Stevenson, CTC; Amy Pelletier, CTConnects; Todd Andrews, Goodwin College; Caitlin Palmer, Emily Hultquist, CRCOG; Casey Hardin, Nicholas Mandler, Transystems; Paul Mainuli, Board of Education; Jeff Cormier, Town Planner; Rich Gentile, Assistant Corporation Counsel; Patrick Zapatka, CTDOT

CALL TO ORDER

Meeting was called to order at 3:30 p.m.

No members of the public were present to make comments

Presentation by TranSystems:

- Casey Hardin provided a brief background on what was accomplished at the last Advisory Committee meeting which was held in workshop style to go over the preliminary 2040 corridor vision.
- Casey Hardin also provided an update on recent coordination with CTDOT on this corridor study and the upcoming VIP pavement improvement project. CRCOG, the Town and TranSystems are working with CTDOT to determine how best to utilize the VIP program to potentially implement some of the near term improvements being discussed as a part of this study.

- Nick Mandler walked the committee members through any changes that had been made to roadway alternatives based upon committee comments that the last advisory committee meeting and through working with CTDOT in the context of the VIP program.
- Several committee member asked about bus pull outs and feasibility on Silver Lane.
- Casey reminded the committee that the public meeting will take place on Tuesday April 30th and asked committee members to reach out to their networks to publicize the meeting.
- Committee members also suggested we be explain clearly to the public what might be done under the VIP project versus the 2040 project vision.
- Emily Hultquist noted some of the other outreach methods that will be employed such as East Hartford Gazette, Facebook, Note to property owners in the Gold Street neighborhood, etc. CRCOG has also produced a newsletter.
- Craig Stevenson suggested that the East Hartford Access TV channel would be a beneficial asset to the meeting to broadcast to members of the public that cannot attend.

ADJOURNMENT

Meeting concluded 4:15 pm.

MARCIA LECLERC
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East Hartford Silver Lane Advisory Committee

Meeting Summary

Wednesday, October 9, 2019

4:00 pm

Welling Conference Room – 2nd floor Town Hall

DRAFT MINUTES

PRESENT - Mayor Leclerc; Robin Pearson, Redevelopment Agency; James Matos, The Matos Group; Val Povinelli, Planning and Zoning Commission; Tom York, Goman and York; Craig Stevenson, CTC; Emily Hultquist, Caitlin Palmer, Mike Cipriano, CRCOG; Casey Hardin, Nicholas Mandler and Pat Padlo, Transystems; Paul Mainuli, Board of Education; Eileen Buckheit, Development Director; Jeff Cormier, Town Planner; Rich Gentile, Assistant Corporation Counsel

CALL TO ORDER

Meeting was called to order at 4:00 p.m.

Eileen Buckheit provided an update on development progress in East Hartford:

- Demolition work has begun at Showcase Cinemas and should be completed within 60 days (contract allows for 90 though).
- Town has hired JCJ Architects to provide a conceptual design for redevelopment of the parcel and will be working to rebrand site as something other than “Showcase Cinemas” site. JCJ’s initial findings confirm the Milone & McBroom recommendation for number of residential units that could be developed there.
- A new gas station development has also been proposed for 249-257 Silver Lane.

Emily Hultquist provided a brief introduction for the presentation and the work completed since the last Advisory Committee meeting. Notably the completion of the VIP repaving opportunity that successfully implemented the “road diet” recommended by the study. Mayor Leclerc confirmed that her office has received positive response on this change from the community.

TranSystems went through the presentation, discussing elements of the final plan and highlighting the changes since the last AC meeting and comments from our DOT meeting, including:

- 10’ wide shared-use path for bicyclists and pedestrians on both sides of the road
- Incorporation of some raised, landscape medians (further to the east to avoid two-lane needs of Rentschler Field area)
- Increase in “buffer” on sidewalk from 2’ to 3’, where possible, per DOT comments to better accommodate snow removal
- The possibility to try to coordinate with DOT on changing the geometry of the Route 15 on-ramp to take advantage of the Charter Oak/91 work
- Potential for roundabout received positively by DOT to reduce future queueing issues on the Route 15 off-ramp onto Silver Lane
- Potential for on-street, parallel parking solution on Silver Lane opposite side of Carl’s BBQ to offset a reduction in parking immediately in front of Carl’s to provide improved pedestrian facilities and angled parking
- Shifting some midblock crossings to existing intersections where that makes sense
- Incorporation of bus pull-off locations for the four CTfastrak stops, which was supported by DOT, particularly in light of the new traffic lane configuration

Emily Hultquist provided a brief overview on possible funding sources/opportunities that the Town could apply for in order to get the final plan constructed.

Consultant and CRCOG answered questions pertaining to the design. Some key takeaways from this final feedback were:

- Potential for additional work/analysis – how to connect and make East River Drive more desirable for bikes and pedestrians (possible to explore a road diet extension); Main Street is wide and what can be done there to facilitate bicyclist and pedestrian mobility; a connection to Founders Plaza is sorely needed

- Can TranSystems provide to the Town some information/studies demonstrating how lane reduction and shared center turn lane improve traffic safety and operations
- The Town should ensure that CTDOT takes similar measurements (like Brewer Street roadway changes) to collect before/after data for Silver Lane

Advisory Committee was invited to attend final public meeting and open house scheduled that evening at the Planning & Zoning Commission meeting.

ADJOURNMENT

Meeting concluded 5:05 pm.

Silver Lane Corridor Study – Stakeholder Meeting Summaries

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The Matos Group – June 13, 2017

Dan Matos, James Matos (TMG); Eileen Buckheit (East Hartford); Emily Hultquist (CRCOG); Casey Hardin (TranSystems); Rebecca Augur, Patrick Gallagher (Milone & MacBroom)

The Matos Group is a real estate investment firm representing the Rentschler Field site, which has an overall area of 1,000 acres. The stadium area consists of 150 acres, 140 acres is reserved for conservation, and 400 acres have been identified for potential development.

The overarching goal for development in this area is to attract people to work and play in this area of East Hartford. Currently, the Matos Group has Office of the State Traffic Administration (OSTA) approval for 15 million square feet of development. A master plan includes gateway style buildings up to 20 stories tall at the Silver Lane and Roberts Street intersections.

Development could include additional design and manufacturing buildings within the site and opportunities to house workers on-site in market rate apartments. Also planned are the Rentschler Field Outlets development.* Construction is slated to begin in July/August 2017 with the retail sites scheduled to open in 2018. A housing development would be following in 2019 and an entertainment complex in 2020. The proposed outlet development would include complete streets measures through the site and interest was indicated for a possible multi-use trail through the development if feasible and the potential benefits of a CTfastrak stop within the campus was also discussed.

** Subsequent to the meeting, the start of construction on the Rentschler Field Outlets was delayed and formally cancelled by the end of 2017.*

Town of East Hartford – July 12, 2017

Tim Bockus, Eileen Buckheit, Jeffrey Cormier, Michael Daniels, Denise Horan (East Hartford); Emily Hultquist (CRCOG); Casey Hardin, Kim Rudy (TranSystems)

The Town detailed concerns existing in corridor today including narrow pavement width, poor access management of commercial driveways, and insufficient drainage (high water table and drainage infrastructure capacity). Without changes to the drainage infrastructure, it is possible that development of key sites could be cost-prohibitive. The narrow travel lanes, lack of shoulders, and numerous curb cuts are not conducive to non-motorized travel.

The Town added that they would like to close the existing sidewalk gaps in the corridor, to provide additional sidewalk width where possible and to provide bicycle lanes or off-road multi-use facilities as appropriate. The Town confirmed they would like to investigate connecting the Charter Oak Greenway from its current terminus at Simmons Road to the Great River Park Trail as part of the East Coast Greenway network.

The group discussed a potential road diet for Silver Lane east of Rentschler Field but that this strategy would need to maintain adequate capacity to support future development. TranSystems added that many corridors with characteristics similar to Silver Lane have chosen to incorporate a two-way left turn lane as a way to increase space for bicycle lanes, sidewalks, and other streetscape features while still maintaining access to businesses, and that changes can be made to improve the environment for users (all modes) on a day-to-day basis, without sacrificing the ability of the roadway to provide access and egress for significant events at Rentschler Field.

The group discussed a frequently asked question by the public regarding restoring the on- and off-ramps to Forbes Street to/from I-84 eastbound because members of the public feel that the loss of these ramps has stifled development on Silver Lane. The likely process and requirements to reintroduce the ramps was discussed, the proximity of the new I-384 interchange was noted as a likely, significant challenge.

The Town explained their desire to improve bicycle and pedestrian conditions along the corridor. The Town believes there is also strong potential for a CTfastrak station and additional transit service. Attendees discussed potentially having two CTfastrak stations on Silver Lane to serve the diverse needs of the corridor.

The group discussed the Matos Group outlet proposal and if there were plans for the Showcase Cinema site.

Additional concerns and/or discussion had that TranSystems confirmed could be reviewed during the study were: the location of the existing bus stop on Silver Lane at Main Street, the difficult pedestrian environment on the west end of Silver Lane, safety near the elementary school, traffic signals at Silver Lane Plaza, and parking.

Goodwin College – August 1, 2017

Todd Andrews, Gary Minor (Goodwin College); Eileen Buckheit (East Hartford); Emily Hultquist (CRCOG); Casey Hardin, Kim Rudy (TranSystems)

Goodwin has plans to connect to the South Meadows Nature trail from the campus along the CT River to the Putnam Bridge. Goodwin reported that CTDOT plans to connect the trail to Wethersfield/Glastonbury in 2018/2019. In addition, Goodwin College has a bike share program on the campus with locations on Main Street and on Riverside Drive.

While there have been a few concepts proposed to connect the South Meadows Nature Trail to the Charter Oak Greenway, however, the existing right-of-way on Brewer Street cannot accommodate bike lanes or a trail. Defining a route may make more sense once the plan for the outlet shopping center and other campus plans for UTC/P&W are defined.

The current master plan for the Goodwin campus centers on a campus gateway at Main Street at Ensign Street. The master plan also supports development on and adjacent to the campus. Goodwin indicated that they have expressed interest in supporting CTfastrak expansion to the East and connections to the campus including a stop or a station on Riverside Drive or Main Street at Ensign Street during the CTfastrak East planning process. Goodwin noted that the majority of their students live in East Hartford, Hartford, New Britain, and South Windsor and many commute along the Route 2 corridor. Goodwin also draws students from Massachusetts. Goodwin has a 35-person trolley that circulates through the campus.

Without access through Willow Street (now closed due to UTC development), students need to use Main Street to get to the Silver Lane businesses or the potential outlets development. Goodwin recommended supporting home ownership along the Silver Lane corridor to complement the rentals adjacent to the campus. Goodwin suggested that the employers (UTC/Pratt & Whitney) may serve as a hub for transit service along with the campus.

Phillips Farm – August 1, 2017

Tim Bockus (East Hartford); Emily Hultquist (CRCOG); Casey Hardin, Kim Rudy (TranSystems) and several residents.

Background on Phillips Farm; was developed in 2006.

Residents view the bus stop on Silver Lane as an asset to the community. One attendee suggested that the traffic light at Silver Lane/Philips Farm should be flashing, not a full traffic signal.

One attendee was stridently anti-bicyclist and felt that bicyclists cause a lot of safety issues.

The group was in general supportive of having more restaurants on Silver Lane and having a CTfastrak station. They also all agree that the lack/gap in sidewalks is a problem and want the network to be completed.

Capital Region Development Authority – August 21, 2017

Tony Lazzaro (CRDA); Tim Bockus, Eileen Buckheit (East Hartford); Emily Hultquist (CRCOG); Casey Hardin, Pat Padlo (TranSystems); Rebecca Augur, Pat Gallagher (Milone & MacBroom)

The Capital Region Development Authority (CRDA) oversees the day-to-day stadium operations of Rentschler Field, OPM owns the stadium, and UConn is the primary tenant of the stadium. Pratt & Whitney donated over 140 acres of land to the state for the stadium and parking needs (parking managed by Laz).

Access points to Rentschler Field and traffic conditions during major events was discussed. The primary access is via Silver Lane at Roberts Street and also at Simmons Road. Willow Street previously provided access to the west but has since been closed to facilitate development on the UTC campus.

The potential for a parking structure was discussed, although CRDA explained that a structure was cost prohibitive, not conducive to tailgating culture, and would not be filled for every event (capacity issues only arise several times a year). CRDA noted that they would be willing to work with a developer to share parking facilities between developments (i.e. proposed outlets) but pedestrian accommodations would have to be made. Additionally, CRDA mentioned that UTC has considered development of hotel and restaurant on parcel located to the west of Rentschler Field/east of E. Hartford Blvd where extra parking is currently provided on an as-needed basis.

The Town discussed desire to improve bike and pedestrian conditions along the corridor/beyond, focusing on the sidewalk gap along Rentschler Field and the Charter Oak Greenway/ECG trail gap.

Use of CTtransit for games was discussed but does not currently appear well utilized. The potential benefits of a new CTfastrak station within the UTC/P&W campus were discussed.

Silver Lane Elementary – December 4, 2017

Joseph LaBarbera (Silver Lane Elementary) and elementary school families; Emily Hultquist, Jillian Massey (CRCOG); Casey Hardin, Pat Padlo, Kim Rudy (TranSystems); Rory Fitzgerald (Fitzgerald & Halliday)

Meeting with Silver Lane Elementary Principal LaBarbera and 10-15 elementary school families. After a brief presentation of the study and existing conditions, the attendees were split into two groups to discuss questions or concerns. The issues discussed are summarized below by topic.

General Comments:

- No school zone sign on Silver Lane approaching the elementary school or speed reduction
- Suggest one-way operations from Mercer Avenue into the neighborhood to simplify vehicular and pedestrian access to the school on Mercer Avenue
- Pedestrian access/sidewalk condition is very important since the school is a walking school (no school buses), district is approx. one-half mile radius
- Peak for the school is 8:30-9:30 AM and 3-4 PM, school hours are 8:45 AM – 3:20 PM
- Closing of Willow Street seems to have increased traffic in the neighborhoods

Pedestrian & Walkability Comments:

- Pedestrian phase comes on every cycle at the traffic signal by Aldi/Silver Lane Plaza
- Suggest speed limit reduction on Silver Lane in the area of Mercer Avenue to Main Street

- Observed difficulty of the crossing guard to manage vehicles due to high speeds on Silver Lane
- Lighting is an issue for all sidewalks, especially under the Route 15 crossing
- Sidewalk is not clearly delineated under the Route 15 crossing
- Suggest a mid-block crossing on Silver Lane with additional safety features (raised crosswalk, flashing beacon, traffic signal, or speed reduction) near the intersection of the Route 15 on- and off-ramps, including Lawrence Street
- Sidewalks are narrow with no shoulders, feels unsafe/busy, difficult in the winter with limited space for snow

Transit Comments:

- Difficulty understanding how routes connect to major destinations such as hospitals
- Unreliable arrival and departure times on Silver Lane
- Bus bunching with CTfastrak which leads to unpredictable arrival order of buses
- Desire for CTfastrak station with shelter is preferred at empty lot at 255 Silver Lane (adjacent to Mercer Avenue) rather than a location serving UTC/Pratt & Whitney
- Interest in better amenities at stops (shelter, concrete pad to board the bus, signage, ADA/stroller access, etc.)

CTtransit and CTDOT – December 11, 2017

Maureen Lawrence, Lisa Rivers, Ricardo Almeida, Alejandro Almodovar (CTDOT); Josh Rickman (CTtransit); Tim Bockus (East Hartford); Emily Hultquist, Jillian Massey (CROG); Casey Hardin, Pat Padlo (TranSystems)

Additional plans for bus rapid transit (BRT) east of the river were discussed, study findings have been posted on the CTfastrak website. The CTfastrak East Expansion Study study (by WSP) proposed changes along the corridor including but not limited to a reduction of the number of stops, more amenities (shelters, seating/benches, WiFi, lighting, information systems, trash receptacles, etc.), prepayment using smart cards, and preemption at traffic signals. A BRT expansion along Silver Lane would likely occur at three possible locations. Currently, there is no funding for expansion due to State budgetary constraints.

Public comments and challenges identified by users of the public transit system were discussed.

Proposed alignments of the Charter Oak Greenway and East Coast Greenway were also discussed.

Transport Hartford – July 12, 2018

Emily Hultquist (CROG); Casey Hardin (TranSystems); Ken Livingston (Fitzgerald & Halliday); interested cyclists primarily

The meeting was organized by Transport Hartford and targeted cyclists in the East Hartford area, and many attendees came due to their connection as employees of Pratt & Whitney.

Panelist discussion focused on micromobility, the East Coast Greenway gap, and the possibility of closing the gap on P&W property. *Panelists: Holly Parker – LimeBike, Emily Hultquist (CRCOG), and Chaz Nobiliski (P&W)*

Q&A and informal discussion followed the panel discussion. Consensus seemed to be reached on the desire to complete more of a bicycle “network” than a “spine” through the corridor.

Pratt & Whitney – December 6, 2018

Craig Matava, Debbie Vergara, Eric Davis, Zaraida Ferguson, Daniel Sevarino, Jim Kodman, Biean Chlebowski (P&W); Kevin Grechika (UTC); Emily Hultquist, Caitlin Palmer (CRCOG); Casey Hardin, Pat Padlo (TranSystems)

P&W described existing traffic operations at their primary campus access points at Silver Lane/Roberts Street and Main Street/Willow Street, noting that Silver Lane/Roberts is heavily congested.

P&W will be conducting their own traffic study within the campus in 2019. One issue they would like to study is the accessibility of the UTC northeastern extent of the campus. A one-way access road connected to East Hartford Boulevard results in vehicles entering by mistake and driving the wrong way to exit. P&W also noted that their Brewer Street access point will be closed off to the general public in 2019 for badge access only.

Most workers arrive using personal, single-occupant vehicles and there is limited transit use since the campus is so large (requiring transit users to walk to either Main Street or Silver Lane). P&W has not yet considered its relationship with enhanced CTfastrak service and if shuttle services could be provided to their employees (still security issues to possibly address).










The East Coast Greenway gap was discussed, and while P&W noted they have had some internal discussion about establishing a trail through the campus, there are certainly security and access concerns.

P&W stated that they don’t anticipate any significant increases in trip generation (i.e. campus/jobs expansion), only in-kind replacements of retirees with younger employees.

A.2. APPENDIX 2 - TRAFFIC ANALYSIS










Lanes, Volumes, Timings
101: CT 15 On-Ramp & Silver Ln

01/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	491	10	293	436	0	0
Future Volume (vph)	491	10	293	436	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	370		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997					
Flt Protected			0.950			
Satd. Flow (prot)	1744	0	1662	1749	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	1744	0	1662	1749	0	0
Link Speed (mph)	40			40	50	
Link Distance (ft)	781			759	593	
Travel Time (s)	13.3			12.9	8.1	
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	534	11	318	474	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	545	0	318	474	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	66.3%			ICU Level of Service C		
Analysis Period (min)	15					

Lanes, Volumes, Timings
102: CT 15 Off-Ramp & Silver Ln

01/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	491	0	0	718	11	342
Future Volume (vph)	491	0	0	718	11	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.869	
Flt Protected					0.998	
Satd. Flow (prot)	1749	0	0	1749	1517	0
Flt Permitted					0.998	
Satd. Flow (perm)	1749	0	0	1749	1517	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	759			463	1125	
Travel Time (s)	12.9			7.9	25.6	
Confl. Peds. (#/hr)					1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	534	0	0	780	12	372
Shared Lane Traffic (%)						
Lane Group Flow (vph)	534	0	0	780	384	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	11	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	66.3%			ICU Level of Service C		
Analysis Period (min)	15					







Lanes, Volumes, Timings
103: Roberts St & I-84 EB On-Ramp

01/13/2020

	↑	↗	↘	↓	↙	↖
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations	↑↑↘	↗		↓↓↓↓		
Traffic Volume (vph)	529	774	0	693	0	0
Future Volume (vph)	529	774	0	693	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		1	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	1.00	0.86	1.00	1.00
Frt	0.939	0.850				
Flt Protected						
Satd. Flow (prot)	2989	1353	0	6017	0	0
Flt Permitted						
Satd. Flow (perm)	2989	1353	0	6017	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	268			202	622	
Travel Time (s)	4.6			3.4	14.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	575	841	0	753	0	0
Shared Lane Traffic (%)		47%				
Lane Group Flow (vph)	970	446	0	753	0	0
Enter Blocked Intersection	Yes	No	No	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		30	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	35.3%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings
104: P&W Connector & E Hartford Blvd N

























01/13/2020

						
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑↑↑	↑↑	↗		
Traffic Volume (vph)	0	1182	100	39	0	0
Future Volume (vph)	0	1182	100	39	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	0	4775	3323	1487	0	0
Flt Permitted						
Satd. Flow (perm)	0	4775	3323	1487	0	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		753	253		432	
Travel Time (s)		14.7	4.9		9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1285	109	42	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1285	109	42	0	0
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(ft)		24	11		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 26.2%						
ICU Level of Service A						
Analysis Period (min) 15						

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	275	507	53	22	285	116	169	903	110	284	64	345
Future Volume (vph)	275	507	53	22	285	116	169	903	110	284	64	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		140	160		160	150		200	150		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	0.99								
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3224	3323	1487	1662	3323	1487	3224	4775	1487	3224	3323	1487
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3224	3323	1463	1645	3323	1487	3224	4775	1487	3224	3323	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173			168			225			375
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		385			2540			253			268	
Travel Time (s)		6.6			43.3			4.9			4.6	
Confl. Peds. (#/hr)			3	3								
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)	299	551	58	24	310	126	184	982	120	309	70	375
Shared Lane Traffic (%)												
Lane Group Flow (vph)	299	551	58	24	310	126	184	982	120	309	70	375
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(ft)		22			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	10.5	21.3	21.3	11.0	21.0	21.0	11.0	21.0	21.0	11.0	21.0	21.0
Total Split (s)	21.0	31.0	31.0	11.0	21.0	21.0	18.0	37.0	37.0	21.0	40.0	40.0
Total Split (%)	17.5%	25.8%	25.8%	9.2%	17.5%	17.5%	15.0%	30.8%	30.8%	17.5%	33.3%	33.3%
Maximum Green (s)	15.5	24.7	24.7	5.0	15.0	15.0	12.0	31.0	31.0	15.0	34.0	34.0
Yellow Time (s)	3.0	4.3	4.3	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	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	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.3	6.3	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	4.0	4.0	2.0	4.0	4.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	14.2	28.1	28.1	5.0	15.3	15.3	11.2	51.0	51.0	15.9	55.8	55.8
Actuated g/C Ratio	0.12	0.23	0.23	0.04	0.13	0.13	0.09	0.42	0.42	0.13	0.46	0.46
v/c Ratio	0.78	0.71	0.12	0.35	0.73	0.38	0.61	0.48	0.16	0.72	0.05	0.42
Control Delay	66.3	48.7	0.5	69.8	61.4	6.0	61.0	26.7	0.4	66.6	17.0	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	66.3	48.7	0.5	69.8	61.4	6.0	61.0	26.7	0.4	66.6	17.0	2.9
LOS	E	D	A	E	E	A	E	C	A	E	B	A
Approach Delay		51.4			46.6			29.1			30.3	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 64 (53%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 37.7

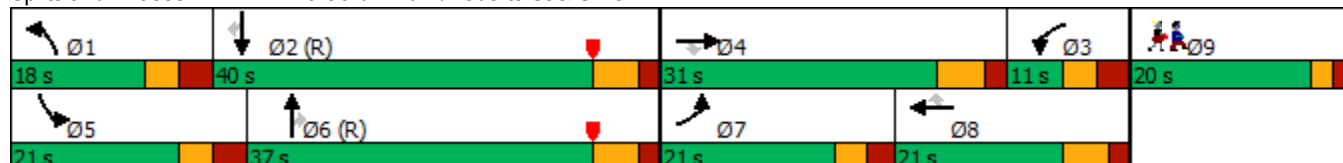
Intersection LOS: D

Intersection Capacity Utilization 65.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 222: E Hartford Blvd N/Roberts St & Silver Ln




















Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	20.0
Total Split (s)	20.0
Total Split (%)	17%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	756	10	4	393	76	1	1	2	120	0	13
Future Volume (vph)	54	756	10	4	393	76	1	1	2	120	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00				1.00	
Frt		0.998			0.976			0.900			0.987	
Flt Protected		0.997					0.950				0.957	
Satd. Flow (prot)	0	3307	0	0	3229	0	1662	1574	0	0	1649	0
Flt Permitted		0.888			0.949		0.750				0.745	
Satd. Flow (perm)	0	2945	0	0	3064	0	1307	1574	0	0	1284	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			29			2			73	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		2540			2556			982			825	
Travel Time (s)		43.3			43.6			22.3			18.8	
Confl. Peds. (#/hr)	7					7	3					3
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)	59	822	11	4	427	83	1	1	2	130	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	892	0	0	514	0	1	3	0	0	144	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left	Thru	
Leading Detector (ft)	20	266		20	266		20	100		20	100	
Trailing Detector (ft)	0	130		0	130		0	0		0	0	
Detector 1 Position(ft)	0	130		0	130		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	8.0		0.0	0.0	
Detector 2 Position(ft)		260			260			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	

Lanes, Volumes, Timings
223: Rentschler Field/Simmons Rd & Silver Ln













01/13/2020

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	






Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		10.0	10.0		9.0	9.0	
Minimum Split (s)	23.3	23.3		23.3	23.3		20.0	20.0		13.0	13.0	
Total Split (s)	45.0	45.0		45.0	45.0		20.0	20.0		20.0	20.0	
Total Split (%)	47.9%	47.9%		47.9%	47.9%		21.3%	21.3%		21.3%	21.3%	
Maximum Green (s)	39.7	39.7		39.7	39.7		15.0	15.0		16.0	16.0	
Yellow Time (s)	4.3	4.3		4.3	4.3		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.3			5.3		5.0	5.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		28.1			28.1		11.9	11.9			12.5	
Actuated g/C Ratio		0.57			0.57		0.24	0.24			0.25	
v/c Ratio		0.53			0.29		0.00	0.01			0.38	
Control Delay		12.6			9.6		23.0	19.3			15.6	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		12.6			9.6		23.0	19.3			15.6	
LOS		B			A		C	B			B	
Approach Delay		12.6			9.6			20.3			15.6	
Approach LOS		B			A			C			B	
Intersection Summary												
Area Type:	Other											
Cycle Length: 94												
Actuated Cycle Length: 49.5												
Natural Cycle: 80												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.53												
Intersection Signal Delay: 11.9				Intersection LOS: B								
Intersection Capacity Utilization 64.1%				ICU Level of Service C								
Analysis Period (min) 15												





















Splits and Phases: 223: Rentschler Field/Simmons Rd & Silver Ln

 Ø2	 Ø4	 Ø9
20 s	45 s	29 s
 Ø6	 Ø8	
20 s	45 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	31%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
224: Forbes St & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	530	233	108	315	81	162	157	106	120	202	65
Future Volume (vph)	80	530	233	108	315	81	162	157	106	120	202	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370		0	190		0	350		0	330		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Frt		0.954			0.969			0.940			0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3148	0	1662	3205	0	1662	1635	0	1662	1678	0
Flt Permitted	0.492			0.160			0.270			0.478		
Satd. Flow (perm)	859	3148	0	280	3205	0	472	1635	0	835	1678	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		769			1106			1073			978	
Travel Time (s)		13.1			18.9			24.4			22.2	
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
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)	87	576	253	117	342	88	176	171	115	130	220	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	829	0	117	430	0	176	286	0	130	291	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left	Thru		Left	Thru	
Leading Detector (ft)	20	326		20	326		20	100		20	100	
Trailing Detector (ft)	0	160		0	160		0	0		0	0	
Detector 1 Position(ft)	0	160		0	160		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		320			320			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
224: Forbes St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		
Detector Phase	7	4		3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	10.0		3.0	10.0	
Minimum Split (s)	7.0	20.5		7.0	21.3		7.0	20.0		7.0	20.0	
Total Split (s)	10.0	49.0		12.0	51.0		16.0	43.0		10.0	37.0	
Total Split (%)	6.8%	33.3%		8.2%	34.7%		10.9%	29.3%		6.8%	25.2%	
Maximum Green (s)	6.0	43.5		8.0	45.6		12.0	38.1		6.0	32.1	
Yellow Time (s)	3.0	4.4		3.0	4.3		3.0	3.6		3.0	3.6	
All-Red Time (s)	1.0	1.1		1.0	1.1		1.0	1.3		1.0	1.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.5		4.0	5.4		4.0	4.9		4.0	4.9	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	40.6	32.8		44.9	37.3		39.0	27.9		30.3	22.9	
Actuated g/C Ratio	0.41	0.33		0.45	0.38		0.39	0.28		0.31	0.23	
v/c Ratio	0.22	0.80		0.49	0.36		0.55	0.62		0.42	0.75	
Control Delay	21.2	38.6		28.0	26.7		31.7	40.7		30.9	51.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.2	38.6		28.0	26.7		31.7	40.7		30.9	51.5	
LOS	C	D		C	C		C	D		C	D	
Approach Delay		37.0			27.0			37.3			45.1	
Approach LOS		D			C			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 147

Actuated Cycle Length: 99.1

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 36.1










Intersection LOS: D

Intersection Capacity Utilization 67.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 224: Forbes St & Silver Ln





















 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
16 s	37 s	12 s	49 s	33 s
 Ø5	 Ø6	 Ø7	 Ø8	
10 s	43 s	10 s	51 s	

Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	22%
Maximum Green (s)	29.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	8
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	700	7	10	271	83	2	0	5	131	3	128
Future Volume (vph)	148	700	7	10	271	83	2	0	5	131	3	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0	180		150	0		0	0		110
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.904				0.850
Flt Protected	0.950			0.950				0.986			0.953	
Satd. Flow (prot)	1662	3317	0	1662	3323	1487	0	1559	0	0	1667	1487
Flt Permitted	0.524			0.360				0.941			0.726	
Satd. Flow (perm)	917	3317	0	630	3323	1487	0	1488	0	0	1270	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				125		150				139
Link Speed (mph)		40			40			20			30	
Link Distance (ft)		1041			769			594			549	
Travel Time (s)		17.7			13.1			20.3			12.5	
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)	161	761	8	11	295	90	2	0	5	142	3	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	161	769	0	11	295	90	0	7	0	0	145	139
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4		3	8			6			2	7
Permitted Phases	4			8		8	6			2		2

Lanes, Volumes, Timings
236: Phillips Farm Rd/Charter Oak Mall & Silver Ln













01/13/2020

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	6	6		2	2	7
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	21.0		9.0	21.0	21.0	9.2	9.2		9.2	9.2	9.0
Total Split (s)	11.0	25.0		9.0	23.0	23.0	15.0	15.0		15.0	15.0	11.0
Total Split (%)	13.8%	31.3%		11.3%	28.8%	28.8%	18.8%	18.8%		18.8%	18.8%	13.8%
Maximum Green (s)	7.0	19.0		5.0	17.0	17.0	10.8	10.8		10.8	10.8	7.0
Yellow Time (s)	3.0	4.3		3.0	4.3	4.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.7		1.0	1.7	1.7	1.2	1.2		1.2	1.2	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0		4.2			4.2	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	1.5		2.0	1.5	1.5	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	57.1	53.3		51.0	43.9	43.9		14.7			14.7	26.1
Actuated g/C Ratio	0.71	0.67		0.64	0.55	0.55		0.18			0.18	0.33
v/c Ratio	0.22	0.35		0.02	0.16	0.10		0.02			0.62	0.24
Control Delay	6.8	9.2		4.9	10.3	1.5		0.0			41.4	4.1
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	6.8	9.2		4.9	10.3	1.5		0.0			41.4	4.1
LOS	A	A		A	B	A		A			D	A
Approach Delay		8.8			8.2						23.2	
Approach LOS		A			A						C	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 1 (1%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 11.1

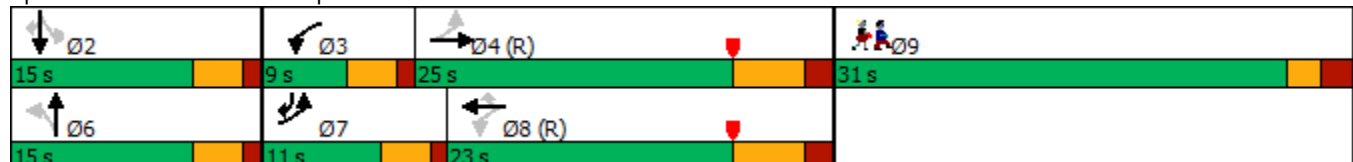
Intersection LOS: B

Intersection Capacity Utilization 49.7%

ICU Level of Service A

Analysis Period (min) 15












Splits and Phases: 236: Phillips Farm Rd/Charter Oak Mall & Silver Ln



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	39%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	385	378	0	529	315	92
Future Volume (vph)	385	378	0	529	315	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370	370	0			0
Storage Lanes	1	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950					
Satd. Flow (prot)	1662	2617	0	3323	3323	1487
Flt Permitted	0.950					
Satd. Flow (perm)	1662	2617	0	3323	3323	1487
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		411				100
Link Speed (mph)	60			40	40	
Link Distance (ft)	663			202	1149	
Travel Time (s)	7.5			3.4	19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	411	0	575	342	100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	411	0	575	342	100
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	1
Detector Template	Left	Right				Right
Leading Detector (ft)	20	20		26	26	20
Trailing Detector (ft)	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0
Detector 1 Size(ft)	20	20		6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)				20	20	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	Free
Protected Phases	4			6	2	
Permitted Phases		4				Free

Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		6	2	
Switch Phase						
Minimum Initial (s)	9.0	9.0		15.0	15.0	
Minimum Split (s)	13.2	13.2		19.8	19.8	
Total Split (s)	70.0	70.0		50.0	50.0	
Total Split (%)	58.3%	58.3%		41.7%	41.7%	
Maximum Green (s)	65.8	65.8		45.2	45.2	
Yellow Time (s)	3.0	3.0		4.3	4.3	
All-Red Time (s)	1.2	1.2		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.2	4.2		4.8	4.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5	1.5		2.0	2.0	
Recall Mode	None	None		C-Min	C-Min	
Act Effect Green (s)	37.4	37.4		73.6	73.6	120.0
Actuated g/C Ratio	0.31	0.31		0.61	0.61	1.00
v/c Ratio	0.81	0.37		0.28	0.17	0.07
Control Delay	49.6	3.2		2.4	11.6	0.1
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay	49.6	3.2		2.4	11.6	0.1
LOS	D	A		A	B	A
Approach Delay	26.6			2.4	9.0	
Approach LOS	C			A	A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 14.8

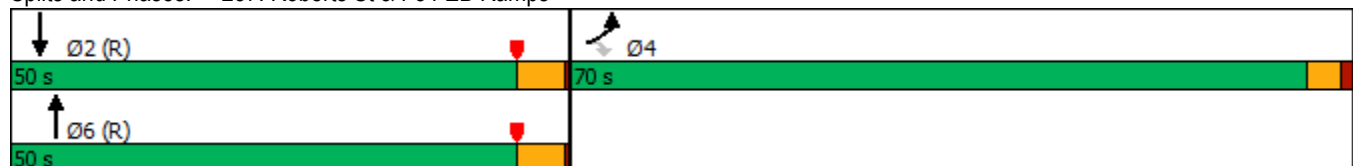
Intersection LOS: B

Intersection Capacity Utilization 43.5%

ICU Level of Service A





















Analysis Period (min) 15

Splits and Phases: 257: Roberts St & I-84 EB Ramps



Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	778	34	111	648	5	35	7	115	3	5	36
Future Volume (vph)	21	778	34	111	648	5	35	7	115	3	5	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	0		170	0		150
Storage Lanes	1		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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00	0.98		1.00	0.98
Frt		0.994			0.999				0.850			0.850
Flt Protected	0.950			0.950				0.960			0.982	
Satd. Flow (prot)	1662	1737	0	1662	1747	0	0	1679	1487	0	1718	1487
Flt Permitted	0.393			0.150				0.758			0.891	
Satd. Flow (perm)	687	1737	0	262	1747	0	0	1322	1452	0	1557	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2							125			77
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		463			289			670			630	
Travel Time (s)		7.9			4.9			18.3			14.3	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		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)	23	846	37	121	704	5	38	8	125	3	5	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	883	0	121	709	0	0	46	125	0	8	39
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	8.0	0.0	0.0	8.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8			6			2	
Permitted Phases	4			8			6		6	2		2
Detector Phase	4	4		3	8		6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	15.0	15.0		5.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	20.0	13.0	13.0	13.0
Total Split (s)	60.0	60.0		18.0	60.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	47.2%	47.2%		14.2%	47.2%		19.7%	19.7%	19.7%	19.7%	19.7%	19.7%
Maximum Green (s)	55.0	55.0		15.0	55.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	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	0.0
Total Lost Time (s)	5.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	2.0		2.0	2.0	2.0	3.0	3.0	3.0
Recall Mode	Min	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	56.6	56.6		69.9	67.8		8.3	8.3	8.3	8.3	8.3	8.3
Actuated g/C Ratio	0.63	0.63		0.78	0.75		0.09	0.09	0.09	0.09	0.09	0.09
v/c Ratio	0.05	0.81		0.37	0.54		0.38	0.51	0.51	0.06	0.19	0.19
Control Delay	11.6	23.1		7.4	8.6		50.7	16.0	16.0	42.6	3.5	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	23.1		7.4	8.6		50.7	16.0	16.0	42.6	3.5	3.5
LOS	B	C		A	A		D	B	B	D	A	A
Approach Delay		22.8			8.4		25.3			10.2		
Approach LOS		C			A		C			B		

Intersection Summary

Area Type: Other

Cycle Length: 127

Actuated Cycle Length: 90

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 16.6

Intersection LOS: B

Intersection Capacity Utilization 69.8%

ICU Level of Service C

Analysis Period (min) 15


















Splits and Phases: 258: Mercer Ave/HOV Ramps & Silver Ln



Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	19%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	4
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	740	63	49	375	3	22	0	83	9	0	9
Future Volume (vph)	18	740	63	49	375	3	22	0	83	9	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98				0.98	
Frt		0.989			0.999			0.850			0.932	
Flt Protected		0.999			0.994		0.950				0.976	
Satd. Flow (prot)	0	3284	0	0	3300	0	1662	1487	0	0	1566	0
Flt Permitted		0.890			0.790		0.744				0.796	
Satd. Flow (perm)	0	2925	0	0	2623	0	1276	1487	0	0	1277	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		14			1			463				
Link Speed (mph)		40			40			20			20	
Link Distance (ft)		2556			394			450			463	
Travel Time (s)		43.6			6.7			15.3			15.8	
Confl. Peds. (#/hr)	1					1	7					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)	20	804	68	53	408	3	24	0	90	10	0	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	892	0	0	464	0	24	90	0	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	

Lane Group	Ø1	Ø2	Ø9
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln

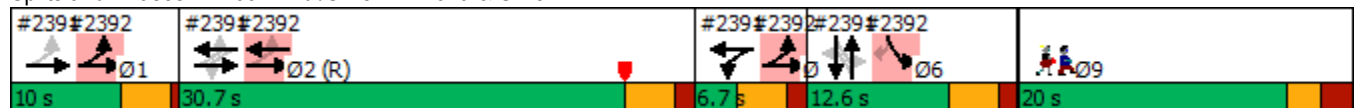
01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1 2		5	2 5			6			6	
Permitted Phases	1 2			2			6			6		
Detector Phase	1 2	1 2		5	2 5		6	6		6	6	
Switch Phase												
Minimum Initial (s)				5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)				9.2			9.2	9.2		9.2	9.2	
Total Split (s)				6.7			12.6	12.6		12.6	12.6	
Total Split (%)				8.4%			15.8%	15.8%		15.8%	15.8%	
Maximum Green (s)				2.5			8.4	8.4		8.4	8.4	
Yellow Time (s)				3.0			3.0	3.0		3.0	3.0	
All-Red Time (s)				1.2			1.2	1.2		1.2	1.2	
Lost Time Adjust (s)							0.0	0.0			0.0	
Total Lost Time (s)							4.2	4.2			4.2	
Lead/Lag				Lead			Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0			3.0	3.0		3.0	3.0	
Recall Mode				Max			None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		56.6		29.0			6.9	6.9			6.9	
Actuated g/C Ratio		0.71		0.36			0.09	0.09			0.09	
v/c Ratio		0.43		0.48			0.22	0.16			0.18	
Control Delay		8.0		3.1			38.3	0.6			37.2	
Queue Delay		0.0		0.0			0.0	0.0			0.0	
Total Delay		8.0		3.1			38.3	0.6			37.2	
LOS		A		A			D	A			D	
Approach Delay		8.0		3.1				8.6			37.2	
Approach LOS		A		A				A			D	

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.48
 Intersection Signal Delay: 6.9
 Intersection LOS: A
 Intersection Capacity Utilization 53.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2391: Aldi/Silver Ln Plaza & Silver Ln



Lane Group	Ø1	Ø2	Ø9
Protected Phases	1	2	9
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	7.0
Minimum Split (s)	9.5	9.2	20.0
Total Split (s)	10.0	30.7	20.0
Total Split (%)	13%	38%	25%
Maximum Green (s)	6.5	26.5	16.0
Yellow Time (s)	3.0	3.0	2.0
All-Red Time (s)	0.5	1.2	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?			
Vehicle Extension (s)	2.0	3.0	2.0
Recall Mode	Max	C-Max	None
Walk Time (s)			7.0
Flash Dont Walk (s)			9.0
Pedestrian Calls (#/hr)			7
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø1	Ø5	Ø9
Lane Configurations		↕↕	↕↕		↕	↕			
Traffic Volume (vph)	10	830	413	15	13	10			
Future Volume (vph)	10	830	413	15	13	10			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00			
Ped Bike Factor		1.00	1.00						
Frt			0.995			0.850			
Flt Protected		0.999			0.950				
Satd. Flow (prot)	0	3320	3303	0	1662	1487			
Flt Permitted		0.955			0.950				
Satd. Flow (perm)	0	3174	3303	0	1662	1487			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)			5			11			
Link Speed (mph)		40	40		20				
Link Distance (ft)		394	1041		467				
Travel Time (s)		6.7	17.7		15.9				
Confl. Peds. (#/hr)	7			7					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	11	902	449	16	14	11			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	913	465	0	14	11			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Left	Left	Right	Left	Right			
Median Width(ft)		0	0		30				
Link Offset(ft)		0	0		0				
Crosswalk Width(ft)		16	16		16				
Two way Left Turn Lane									
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04			
Turning Speed (mph)	15			9	15	9			
Number of Detectors	1	2	2		1	1			
Detector Template	Left	Thru	Thru		Left	Right			
Leading Detector (ft)	20	100	100		20	20			
Trailing Detector (ft)	0	0	0		0	0			
Detector 1 Position(ft)	0	0	0		0	0			
Detector 1 Size(ft)	20	6	6		20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0			
Detector 2 Position(ft)		94	94						
Detector 2 Size(ft)		6	6						
Detector 2 Type		Cl+Ex	Cl+Ex						
Detector 2 Channel									
Detector 2 Extend (s)		0.0	0.0						
Turn Type	D.P+P	NA	NA		Prot	Perm			
Protected Phases	1 5	1 2 5	2		6		1	5	9
Permitted Phases	2					6			
Detector Phase	1 5	1 2 5	2		6	6			

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø1	Ø5	Ø9
Switch Phase									
Minimum Initial (s)			5.0		5.0	5.0	6.0	5.0	7.0
Minimum Split (s)			9.2		9.2	9.2	9.5	9.2	20.0
Total Split (s)			30.7		12.6	12.6	10.0	6.7	20.0
Total Split (%)			38.4%		15.8%	15.8%	13%	8%	25%
Maximum Green (s)			26.5		8.4	8.4	6.5	2.5	16.0
Yellow Time (s)			3.0		3.0	3.0	3.0	3.0	2.0
All-Red Time (s)			1.2		1.2	1.2	0.5	1.2	2.0
Lost Time Adjust (s)			0.0		0.0	0.0			
Total Lost Time (s)			4.2		4.2	4.2			
Lead/Lag			Lag		Lag	Lag	Lead	Lead	
Lead-Lag Optimize?									
Vehicle Extension (s)			3.0		3.0	3.0	2.0	3.0	2.0
Recall Mode			C-Max		None	None	Max	Max	None
Walk Time (s)									7.0
Flash Dont Walk (s)									9.0
Pedestrian Calls (#/hr)									7
Act Effect Green (s)		57.0	26.5		6.9	6.9			
Actuated g/C Ratio		0.71	0.33		0.09	0.09			
v/c Ratio		0.39	0.42		0.10	0.08			
Control Delay		1.4	16.3		34.5	19.2			
Queue Delay		0.0	0.0		0.0	0.0			
Total Delay		1.4	16.3		34.5	19.2			
LOS		A	B		C	B			
Approach Delay		1.4	16.3		27.7				
Approach LOS		A	B		C				

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 6.8

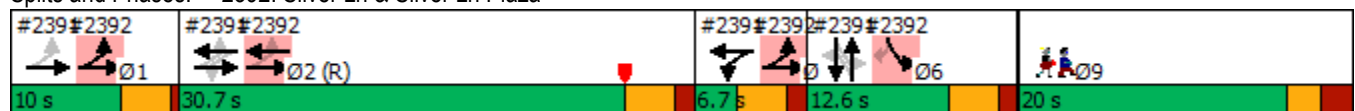
Intersection LOS: A

Intersection Capacity Utilization 41.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2392: Silver Ln & Silver Ln Plaza













Lanes, Volumes, Timings
101: CT 15 On-Ramp & Silver Ln

01/13/2020

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗		↖	↗		
Traffic Volume (vph)	620	13	370	498	0	0
Future Volume (vph)	620	13	370	498	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	370		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997					
Flt Protected			0.950			
Satd. Flow (prot)	1744	0	1662	1749	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	1744	0	1662	1749	0	0
Link Speed (mph)	40			40	50	
Link Distance (ft)	781			759	593	
Travel Time (s)	13.3			12.9	8.1	
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	14	402	541	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	688	0	402	541	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	78.6%			ICU Level of Service D		
Analysis Period (min)	15					










Lanes, Volumes, Timings
102: CT 15 Off-Ramp & Silver Ln

01/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations					 	
Traffic Volume (vph)	613	0	0	862	14	415
Future Volume (vph)	613	0	0	862	14	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.869	
Flt Protected					0.998	
Satd. Flow (prot)	1749	0	0	1749	1517	0
Flt Permitted					0.998	
Satd. Flow (perm)	1749	0	0	1749	1517	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	759			463	1125	
Travel Time (s)	12.9			7.9	25.6	
Confl. Peds. (#/hr)					1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	666	0	0	937	15	451
Shared Lane Traffic (%)						
Lane Group Flow (vph)	666	0	0	937	466	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	11	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	78.6%			ICU Level of Service D		
Analysis Period (min)	15					







Lanes, Volumes, Timings
103: Roberts St & I-84 EB On-Ramp

01/13/2020

						
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	637	999	0	768	0	0
Future Volume (vph)	637	999	0	768	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		1	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	1.00	0.86	1.00	1.00
Frt	0.935	0.850				
Flt Protected						
Satd. Flow (prot)	2977	1353	0	6017	0	0
Flt Permitted						
Satd. Flow (perm)	2977	1353	0	6017	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	268			202	622	
Travel Time (s)	4.6			3.4	14.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	692	1086	0	835	0	0
Shared Lane Traffic (%)		49%				
Lane Group Flow (vph)	1224	554	0	835	0	0
Enter Blocked Intersection	Yes	No	No	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		30	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.6%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings
104: P&W Connector & E Hartford Blvd N

























01/13/2020

						
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑↑↑	↑↑	↗		
Traffic Volume (vph)	0	1182	100	39	0	0
Future Volume (vph)	0	1182	100	39	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	0	4775	3323	1487	0	0
Flt Permitted						
Satd. Flow (perm)	0	4775	3323	1487	0	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		753	253		432	
Travel Time (s)		14.7	4.9		9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1285	109	42	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1285	109	42	0	0
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(ft)		24	11		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.2%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	363	588	66	25	337	137	213	1136	122	292	71	405
Future Volume (vph)	363	588	66	25	337	137	213	1136	122	292	71	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		140	160		160	150		200	150		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	0.99								
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3224	3323	1487	1662	3323	1487	3224	4775	1487	3224	3323	1487
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3224	3323	1461	1647	3323	1487	3224	4775	1487	3224	3323	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173			168			225			440
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		385			2540			253			268	
Travel Time (s)		6.6			43.3			4.9			4.6	
Confl. Peds. (#/hr)			3	3								
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)	395	639	72	27	366	149	232	1235	133	317	77	440
Shared Lane Traffic (%)												
Lane Group Flow (vph)	395	639	72	27	366	149	232	1235	133	317	77	440
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(ft)		22			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0	5.0	10.0	10.0
Minimum Split (s)	10.5	21.3	21.3	11.0	21.0	21.0	11.0	21.0	21.0	11.0	21.0	21.0
Total Split (s)	17.0	27.0	27.0	11.0	21.0	21.0	19.0	34.0	34.0	15.0	30.0	30.0
Total Split (%)	14.2%	22.5%	22.5%	9.2%	17.5%	17.5%	15.8%	28.3%	28.3%	12.5%	25.0%	25.0%
Maximum Green (s)	11.5	20.7	20.7	5.0	15.0	15.0	13.0	28.0	28.0	9.0	24.0	24.0
Yellow Time (s)	3.0	4.3	4.3	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	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	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.3	6.3	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	4.0	4.0	2.0	4.0	4.0
Recall Mode	None	Min	Min	None	Min	Min	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	11.5	25.1	25.1	5.0	15.0	15.0	12.9	48.2	48.2	21.8	57.1	57.1
Actuated g/C Ratio	0.10	0.21	0.21	0.04	0.12	0.12	0.11	0.40	0.40	0.18	0.48	0.48
v/c Ratio	1.28	0.92	0.16	0.39	0.88	0.45	0.67	0.64	0.18	0.54	0.05	0.47
Control Delay	192.9	66.9	0.8	72.5	74.7	9.7	61.0	30.6	0.5	54.0	16.3	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	192.9	66.9	0.8	72.5	74.7	9.7	61.0	30.6	0.5	54.0	16.3	2.9
LOS	F	E	A	E	E	A	E	C	A	D	B	A
Approach Delay		107.6			56.7			32.5			23.6	
Approach LOS		F			E			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.28

Intersection Signal Delay: 54.2

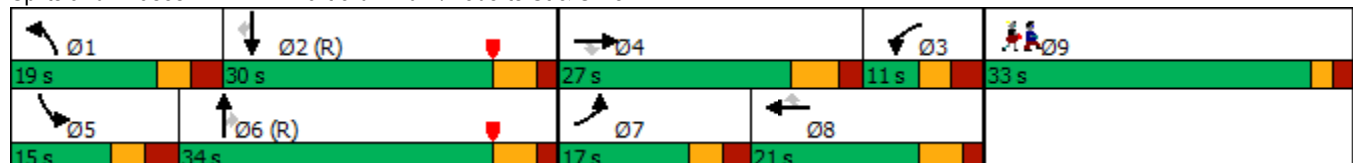
Intersection LOS: D

Intersection Capacity Utilization 72.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 222: E Hartford Blvd N/Roberts St & Silver Ln




















Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	28%
Maximum Green (s)	29.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	35.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	927	10	10	460	91	1	1	4	130	0	13
Future Volume (vph)	54	927	10	10	460	91	1	1	4	130	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00				1.00	
Frt		0.998			0.976			0.880			0.988	
Flt Protected		0.997			0.999		0.950				0.956	
Satd. Flow (prot)	0	3307	0	0	3226	0	1662	1539	0	0	1650	0
Flt Permitted		0.886			0.932		0.739				0.742	
Satd. Flow (perm)	0	2938	0	0	3009	0	1288	1539	0	0	1280	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			30			4			73	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		2540			2556			982			825	
Travel Time (s)		43.3			43.6			22.3			18.8	
Confl. Peds. (#/hr)	7					7	3					3
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)	59	1008	11	11	500	99	1	1	4	141	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1078	0	0	610	0	1	5	0	0	155	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left	Thru	
Leading Detector (ft)	20	266		20	266		20	100		20	100	
Trailing Detector (ft)	0	130		0	130		0	0		0	0	
Detector 1 Position(ft)	0	130		0	130		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	8.0		0.0	0.0	
Detector 2 Position(ft)		260			260			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	

Lanes, Volumes, Timings
223: Rentschler Field/Simmons Rd & Silver Ln













01/13/2020

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	





Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		10.0	10.0		9.0	9.0	
Minimum Split (s)	23.3	23.3		23.3	23.3		20.0	20.0		13.0	13.0	
Total Split (s)	45.0	45.0		45.0	45.0		20.0	20.0		20.0	20.0	
Total Split (%)	47.9%	47.9%		47.9%	47.9%		21.3%	21.3%		21.3%	21.3%	
Maximum Green (s)	39.7	39.7		39.7	39.7		15.0	15.0		16.0	16.0	
Yellow Time (s)	4.3	4.3		4.3	4.3		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.3			5.3		5.0	5.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		28.7			28.7		11.6	11.6			12.7	
Actuated g/C Ratio		0.52			0.52		0.21	0.21			0.23	
v/c Ratio		0.70			0.39		0.00	0.02			0.44	
Control Delay		15.5			10.2		25.0	19.0			17.9	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		15.5			10.2		25.0	19.0			17.9	
LOS		B			B		C	B			B	
Approach Delay		15.5			10.2			20.0			17.9	
Approach LOS		B			B			B			B	
Intersection Summary												
Area Type:	Other											
Cycle Length: 94												
Actuated Cycle Length: 55.1												
Natural Cycle: 90												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.70												
Intersection Signal Delay: 14.0				Intersection LOS: B								
Intersection Capacity Utilization 70.4%				ICU Level of Service C								
Analysis Period (min) 15												





















Splits and Phases: 223: Rentschler Field/Simmons Rd & Silver Ln

 Ø2	 Ø4	 Ø9
20 s	45 s	29 s
 Ø6	 Ø8	
20 s	45 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	31%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
224: Forbes St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	662	302	111	430	81	220	157	106	120	202	85
Future Volume (vph)	92	662	302	111	430	81	220	157	106	120	202	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370		0	190		0	350		0	330		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Frt		0.953			0.976			0.940			0.956	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3144	0	1662	3232	0	1662	1635	0	1662	1665	0
Flt Permitted	0.383			0.105			0.217			0.466		
Satd. Flow (perm)	669	3144	0	184	3232	0	379	1635	0	814	1665	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		769			1106			1073			978	
Travel Time (s)		13.1			18.9			24.4			22.2	
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
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)	100	720	328	121	467	88	239	171	115	130	220	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	1048	0	121	555	0	239	286	0	130	312	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left	Thru		Left	Thru	
Leading Detector (ft)	20	326		20	326		20	100		20	100	
Trailing Detector (ft)	0	160		0	160		0	0		0	0	
Detector 1 Position(ft)	0	160		0	160		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		320			320			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	













No Build Conditions PM Peak
NCM

Synchro 10 Report
Page 13

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
224: Forbes St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		
Detector Phase	7	4		3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	10.0		3.0	10.0	
Minimum Split (s)	7.0	20.5		7.0	21.3		7.0	20.0		7.0	20.0	
Total Split (s)	10.0	49.0		12.0	51.0		16.0	43.0		10.0	37.0	
Total Split (%)	6.8%	33.3%		8.2%	34.7%		10.9%	29.3%		6.8%	25.2%	
Maximum Green (s)	6.0	43.5		8.0	45.6		12.0	38.1		6.0	32.1	
Yellow Time (s)	3.0	4.4		3.0	4.3		3.0	3.6		3.0	3.6	
All-Red Time (s)	1.0	1.1		1.0	1.1		1.0	1.3		1.0	1.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.5		4.0	5.4		4.0	4.9		4.0	4.9	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	51.9	44.3		56.1	46.6		42.7	31.6		32.5	25.5	
Actuated g/C Ratio	0.46	0.39		0.49	0.41		0.37	0.28		0.29	0.22	
v/c Ratio	0.28	0.86		0.62	0.42		0.86	0.63		0.47	0.84	
Control Delay	21.8	41.7		34.9	28.0		57.0	44.7		35.0	63.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.8	41.7		34.9	28.0		57.0	44.7		35.0	63.6	
LOS	C	D		C	C		E	D		D	E	
Approach Delay		40.0			29.2			50.3			55.2	
Approach LOS		D			C			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 147

Actuated Cycle Length: 114

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 41.7










Intersection LOS: D

Intersection Capacity Utilization 77.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 224: Forbes St & Silver Ln





















 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
16 s	37 s	12 s	49 s	33 s
 Ø5	 Ø6	 Ø7	 Ø8	
10 s	43 s	10 s	51 s	

Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	22%
Maximum Green (s)	29.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	8
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	825	7	15	346	145	3	0	7	197	4	192
Future Volume (vph)	222	825	7	15	346	145	3	0	7	197	4	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0	180		150	0		0	0		110
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999				0.850		0.902				0.850
Flt Protected	0.950			0.950				0.987			0.953	
Satd. Flow (prot)	1662	3320	0	1662	3323	1487	0	1557	0	0	1667	1487
Flt Permitted	0.465			0.315				0.948			0.722	
Satd. Flow (perm)	813	3320	0	551	3323	1487	0	1496	0	0	1263	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				158		150				209
Link Speed (mph)		40			40			20			30	
Link Distance (ft)		1041			769			594			549	
Travel Time (s)		17.7			13.1			20.3			12.5	
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)	241	897	8	16	376	158	3	0	8	214	4	209
Shared Lane Traffic (%)												
Lane Group Flow (vph)	241	905	0	16	376	158	0	11	0	0	218	209
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4		3	8			6			2	7
Permitted Phases	4			8		8	6			2		2

No Build Conditions PM Peak
NCM

Synchro 10 Report
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Lanes, Volumes, Timings
236: Phillips Farm Rd/Charter Oak Mall & Silver Ln













01/13/2020

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	6	6		2	2	7
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	21.0		9.0	21.0	21.0	9.2	9.2		9.2	9.2	9.0
Total Split (s)	11.0	25.0		9.0	23.0	23.0	15.0	15.0		15.0	15.0	11.0
Total Split (%)	13.8%	31.3%		11.3%	28.8%	28.8%	18.8%	18.8%		18.8%	18.8%	13.8%
Maximum Green (s)	7.0	19.0		5.0	17.0	17.0	10.8	10.8		10.8	10.8	7.0
Yellow Time (s)	3.0	4.3		3.0	4.3	4.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.7		1.0	1.7	1.7	1.2	1.2		1.2	1.2	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0		4.2			4.2	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	1.5		2.0	1.5	1.5	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	46.9	43.0		37.5	30.4	30.4		24.9			24.9	39.6
Actuated g/C Ratio	0.59	0.54		0.47	0.38	0.38		0.31			0.31	0.50
v/c Ratio	0.41	0.51		0.05	0.30	0.24		0.02			0.55	0.25
Control Delay	12.0	15.7		7.5	18.2	4.2		0.1			30.2	2.5
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	12.0	15.7		7.5	18.2	4.2		0.1			30.2	2.5
LOS	B	B		A	B	A		A			C	A
Approach Delay		14.9			13.9			0.1			16.6	
Approach LOS		B			B			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 73 (91%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 14.9

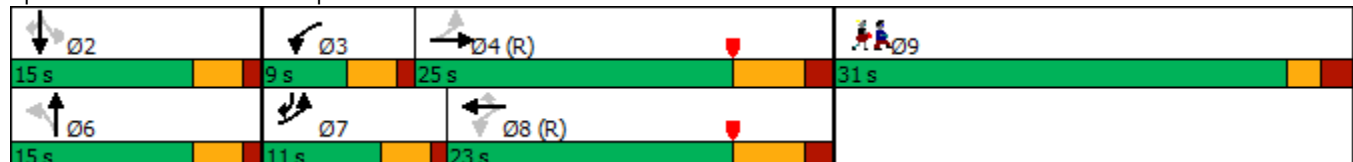
Intersection LOS: B

Intersection Capacity Utilization 56.8%

ICU Level of Service B

Analysis Period (min) 15











Splits and Phases: 236: Phillips Farm Rd/Charter Oak Mall & Silver Ln



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	39%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	385	383	0	637	385	92
Future Volume (vph)	385	383	0	637	385	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370	370	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	0.95
Frt		0.850			0.971	
Flt Protected	0.950					
Satd. Flow (prot)	1662	2617	0	3323	3227	0
Flt Permitted	0.950					
Satd. Flow (perm)	1662	2617	0	3323	3227	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		416			33	
Link Speed (mph)	60			40	40	
Link Distance (ft)	663			202	1149	
Travel Time (s)	7.5			3.4	19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	416	0	692	418	100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	416	0	692	518	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right				
Leading Detector (ft)	20	20		26	26	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				20	20	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			6	2	
Permitted Phases		4				

No Build Conditions PM Peak
NCM

Synchro 10 Report
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Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		6	2	
Switch Phase						
Minimum Initial (s)	9.0	9.0		15.0	15.0	
Minimum Split (s)	13.2	13.2		19.8	19.8	
Total Split (s)	59.0	59.0		61.0	61.0	
Total Split (%)	49.2%	49.2%		50.8%	50.8%	
Maximum Green (s)	54.8	54.8		56.2	56.2	
Yellow Time (s)	3.0	3.0		4.3	4.3	
All-Red Time (s)	1.2	1.2		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.2	4.2		4.8	4.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5	1.5		2.0	2.0	
Recall Mode	None	None		C-Min	C-Min	
Act Effect Green (s)	36.0	36.0		75.0	75.0	
Actuated g/C Ratio	0.30	0.30		0.62	0.62	
v/c Ratio	0.84	0.39		0.33	0.26	
Control Delay	53.9	3.4		2.4	10.8	
Queue Delay	0.0	0.0		0.3	0.0	
Total Delay	53.9	3.4		2.7	10.8	
LOS	D	A		A	B	
Approach Delay	28.7			2.7	10.8	
Approach LOS	C			A	B	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 70 (58%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 15.4

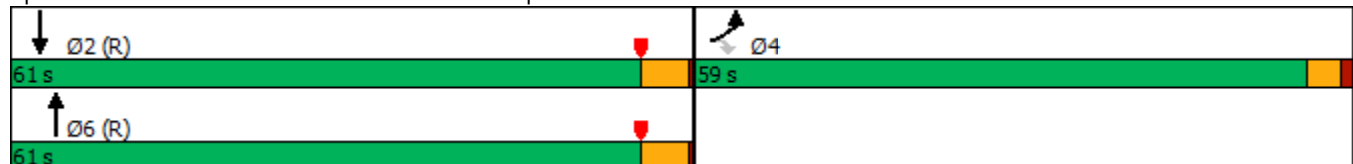
Intersection LOS: B

Intersection Capacity Utilization 46.4%

ICU Level of Service A





















Analysis Period (min) 15

Splits and Phases: 257: Roberts St & I-84 EB Ramps



Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	966	36	120	784	6	36	7	121	4	5	43
Future Volume (vph)	26	966	36	120	784	6	36	7	121	4	5	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	0		170	0		150
Storage Lanes	1		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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00	0.98		1.00	0.98
Frt		0.995			0.999				0.850			0.850
Flt Protected	0.950			0.950				0.960			0.978	
Satd. Flow (prot)	1662	1739	0	1662	1747	0	0	1679	1487	0	1711	1487
Flt Permitted	0.302			0.067				0.756			0.871	
Satd. Flow (perm)	528	1739	0	117	1747	0	0	1319	1452	0	1522	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1				132			77
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		463			289			670			630	
Travel Time (s)		7.9			4.9			18.3			14.3	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		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)	28	1050	39	130	852	7	39	8	132	4	5	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	1089	0	130	859	0	0	47	132	0	9	47
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	8.0	0.0	0.0	8.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm

No Build Conditions PM Peak
NCM

Synchro 10 Report
Page 23

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln

01/13/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8			6			2	
Permitted Phases	4			8			6		6	2		2
Detector Phase	4	4		3	8		6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	15.0	15.0		5.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	20.0	13.0	13.0	13.0
Total Split (s)	60.0	60.0		18.0	60.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	47.2%	47.2%		14.2%	47.2%		19.7%	19.7%	19.7%	19.7%	19.7%	19.7%
Maximum Green (s)	55.0	55.0		15.0	55.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	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	0.0
Total Lost Time (s)	5.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	2.0		2.0	2.0	2.0	3.0	3.0	3.0
Recall Mode	Min	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	56.3	56.3		69.8	67.8		8.4	8.4	8.4	8.4	8.4	8.4
Actuated g/C Ratio	0.63	0.63		0.78	0.75		0.09	0.09	0.09	0.09	0.09	0.09
v/c Ratio	0.09	1.00		0.55	0.65		0.38	0.52	0.52	0.06	0.23	0.23
Control Delay	12.2	47.7		23.0	11.0		51.1	15.9	15.9	42.9	6.3	6.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	47.7		23.0	11.0		51.1	15.9	15.9	42.9	6.3	6.3
LOS	B	D		C	B		D	B	B	D	A	A
Approach Delay		46.8			12.6		25.2			12.2		
Approach LOS		D			B		C			B		

Intersection Summary

Area Type: Other

Cycle Length: 127

Actuated Cycle Length: 90

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 29.9

Intersection LOS: C

Intersection Capacity Utilization 80.4%

ICU Level of Service D

Analysis Period (min) 15


















Splits and Phases: 258: Mercer Ave/HOV Ramps & Silver Ln



Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	19%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	4
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	902	90	49	463	5	37	0	84	17	0	29
Future Volume (vph)	53	902	90	49	463	5	37	0	84	17	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98				0.98	
Frt		0.987			0.999			0.850			0.914	
Flt Protected		0.997			0.995		0.950				0.982	
Satd. Flow (prot)	0	3270	0	0	3303	0	1662	1487	0	0	1538	0
Flt Permitted		0.646			0.777		0.917				0.844	
Satd. Flow (perm)	0	2119	0	0	2579	0	1575	1487	0	0	1322	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		16			1			476				
Link Speed (mph)		40			40			20			20	
Link Distance (ft)		2556			394			450			463	
Travel Time (s)		43.6			6.7			15.3			15.8	
Confl. Peds. (#/hr)	1					1	7					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)	58	980	98	53	503	5	40	0	91	18	0	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1136	0	0	561	0	40	91	0	0	50	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	













No Build Conditions PM Peak
NCM

Synchro 10 Report
Page 27

Lane Group	Ø1	Ø2	Ø9
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1 2		5	2 5			6			6	
Permitted Phases	1 2			2			6			6		
Detector Phase	1 2	1 2		5	2 5		6	6		6	6	
Switch Phase												
Minimum Initial (s)				5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)				9.2			9.2	9.2		9.2	9.2	
Total Split (s)				9.2			12.6	12.6		12.6	12.6	
Total Split (%)				11.5%			15.8%	15.8%		15.8%	15.8%	
Maximum Green (s)				5.0			8.4	8.4		8.4	8.4	
Yellow Time (s)				3.0			3.0	3.0		3.0	3.0	
All-Red Time (s)				1.2			1.2	1.2		1.2	1.2	
Lost Time Adjust (s)							0.0	0.0			0.0	
Total Lost Time (s)							4.2	4.2			4.2	
Lead/Lag				Lead			Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0			3.0	3.0		3.0	3.0	
Recall Mode				Max			None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		53.5		23.3			7.5	7.5			7.5	
Actuated g/C Ratio		0.67		0.29			0.09	0.09			0.09	
v/c Ratio		0.80		0.70			0.27	0.16			0.41	
Control Delay		18.9		10.3			38.1	0.6			43.9	
Queue Delay		0.0		0.0			0.0	0.0			0.0	
Total Delay		18.9		10.3			38.1	0.6			43.9	
LOS		B		B			D	A			D	
Approach Delay		18.9		10.3				12.0			43.9	
Approach LOS		B		B				B			D	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 16.5










Intersection LOS: B

Intersection Capacity Utilization 63.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2391: Aldi/Silver Ln Plaza & Silver Ln

  Ø1	  Ø2 (R)	  Ø5	  Ø6	 Ø9
15.7 s	22.5 s	9.2 s	12.6 s	20 s

Lane Group	Ø1	Ø2	Ø9
Protected Phases	1	2	9
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	7.0
Minimum Split (s)	9.5	9.2	20.0
Total Split (s)	15.7	22.5	20.0
Total Split (%)	20%	28%	25%
Maximum Green (s)	12.2	18.3	16.0
Yellow Time (s)	3.0	3.0	2.0
All-Red Time (s)	0.5	1.2	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?			
Vehicle Extension (s)	2.0	3.0	2.0
Recall Mode	Max	C-Max	None
Walk Time (s)			7.0
Flash Dont Walk (s)			9.0
Pedestrian Calls (#/hr)			7
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø1	Ø5	Ø9
Lane Configurations		↕↕	↕↕		↕	↕			
Traffic Volume (vph)	18	1028	496	50	40	19			
Future Volume (vph)	18	1028	496	50	40	19			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00			
Ped Bike Factor		1.00	1.00						
Frt			0.986			0.850			
Flt Protected		0.999			0.950				
Satd. Flow (prot)	0	3320	3267	0	1662	1487			
Flt Permitted		0.955			0.950				
Satd. Flow (perm)	0	3174	3267	0	1662	1487			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)			12			21			
Link Speed (mph)		40	40		20				
Link Distance (ft)		394	1041		467				
Travel Time (s)		6.7	17.7		15.9				
Confl. Peds. (#/hr)	7			7					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	20	1117	539	54	43	21			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	1137	593	0	43	21			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Left	Left	Right	Left	Right			
Median Width(ft)		0	0		30				
Link Offset(ft)		0	0		0				
Crosswalk Width(ft)		16	16		16				
Two way Left Turn Lane									
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04			
Turning Speed (mph)	15			9	15	9			
Number of Detectors	1	2	2		1	1			
Detector Template	Left	Thru	Thru		Left	Right			
Leading Detector (ft)	20	100	100		20	20			
Trailing Detector (ft)	0	0	0		0	0			
Detector 1 Position(ft)	0	0	0		0	0			
Detector 1 Size(ft)	20	6	6		20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0			
Detector 2 Position(ft)		94	94						
Detector 2 Size(ft)		6	6						
Detector 2 Type		Cl+Ex	Cl+Ex						
Detector 2 Channel									
Detector 2 Extend (s)		0.0	0.0						
Turn Type	D.P+P	NA	NA		Prot	Perm			
Protected Phases	1 5	1 2 5	2		6		1	5	9
Permitted Phases	2					6			
Detector Phase	1 5	1 2 5	2		6	6			

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø1	Ø5	Ø9
Switch Phase									
Minimum Initial (s)			5.0		5.0	5.0	6.0	5.0	7.0
Minimum Split (s)			9.2		9.2	9.2	9.5	9.2	20.0
Total Split (s)			22.5		12.6	12.6	15.7	9.2	20.0
Total Split (%)			28.1%		15.8%	15.8%	20%	12%	25%
Maximum Green (s)			18.3		8.4	8.4	12.2	5.0	16.0
Yellow Time (s)			3.0		3.0	3.0	3.0	3.0	2.0
All-Red Time (s)			1.2		1.2	1.2	0.5	1.2	2.0
Lost Time Adjust (s)			0.0		0.0	0.0			
Total Lost Time (s)			4.2		4.2	4.2			
Lead/Lag			Lag		Lag	Lag	Lead	Lead	
Lead-Lag Optimize?									
Vehicle Extension (s)			3.0		3.0	3.0	2.0	3.0	2.0
Recall Mode			C-Max		None	None	Max	Max	None
Walk Time (s)									7.0
Flash Dont Walk (s)									9.0
Pedestrian Calls (#/hr)									7
Act Effect Green (s)		56.4	18.3		7.5	7.5			
Actuated g/C Ratio		0.70	0.23		0.09	0.09			
v/c Ratio		0.49	0.78		0.28	0.13			
Control Delay		2.8	26.7		38.0	16.4			
Queue Delay		0.0	0.0		0.0	0.0			
Total Delay		2.8	26.7		38.0	16.4			
LOS		A	C		D	B			
Approach Delay		2.8	26.7		30.9				
Approach LOS		A	C		C				

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 11.7

Intersection LOS: B

Intersection Capacity Utilization 52.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2392: Silver Ln & Silver Ln Plaza

#239#2392 	#239#2392 	#239#2392 	#239#2392 	#239#2392
15.7 s	22.5 s	9.2 s	12.6 s	20 s










Lanes, Volumes, Timings
101: CT 15 On-Ramp & Silver Ln

01/13/2020

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗		↖	↗		
Traffic Volume (vph)	656	14	374	512	0	0
Future Volume (vph)	656	14	374	512	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	370		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997					
Flt Protected			0.950			
Satd. Flow (prot)	1744	0	1662	1749	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	1744	0	1662	1749	0	0
Link Speed (mph)	40			40	50	
Link Distance (ft)	781			759	593	
Travel Time (s)	13.3			12.9	8.1	
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	713	15	407	557	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	728	0	407	557	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	80.7%			ICU Level of Service D		
Analysis Period (min)	15					










Lanes, Volumes, Timings
102: CT 15 Off-Ramp & Silver Ln

01/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	653	0	0	881	14	433
Future Volume (vph)	653	0	0	881	14	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.869	
Flt Protected					0.998	
Satd. Flow (prot)	1749	0	0	1749	1517	0
Flt Permitted					0.998	
Satd. Flow (perm)	1749	0	0	1749	1517	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	759			463	1125	
Travel Time (s)	12.9			7.9	25.6	
Confl. Peds. (#/hr)					1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	710	0	0	958	15	471
Shared Lane Traffic (%)						
Lane Group Flow (vph)	710	0	0	958	486	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	11	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	80.7%			ICU Level of Service D		
Analysis Period (min)	15					







Lanes, Volumes, Timings
103: Roberts St & I-84 EB On-Ramp

01/13/2020

						
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	677	1052	0	827	0	0
Future Volume (vph)	677	1052	0	827	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		1	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	1.00	0.86	1.00	1.00
Frt	0.936	0.850				
Flt Protected						
Satd. Flow (prot)	2980	1353	0	6017	0	0
Flt Permitted						
Satd. Flow (perm)	2980	1353	0	6017	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	268			202	622	
Travel Time (s)	4.6			3.4	14.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	736	1143	0	899	0	0
Shared Lane Traffic (%)		48%				
Lane Group Flow (vph)	1285	594	0	899	0	0
Enter Blocked Intersection	Yes	No	No	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		30	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	46.8%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings
104: P&W Connector & E Hartford Blvd N

























01/13/2020

						
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑↑↑	↑↑	↗		
Traffic Volume (vph)	0	1182	100	39	0	0
Future Volume (vph)	0	1182	100	39	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	0	4775	3323	1487	0	0
Flt Permitted						
Satd. Flow (perm)	0	4775	3323	1487	0	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		753	253		432	
Travel Time (s)		14.7	4.9		9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1285	109	42	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1285	109	42	0	0
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(ft)		24	11		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.2%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	621	66	25	347	158	213	1171	122	329	72	426
Future Volume (vph)	400	621	66	25	347	158	213	1171	122	329	72	426
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		140	160		160	150		200	150		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	0.99								
Flt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3224	3323	1487	1662	3323	1487	3224	4775	1487	3224	3323	1487
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3224	3323	1462	1648	3323	1487	3224	4775	1487	3224	3323	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173			172			225			463
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		385			2540			253			268	
Travel Time (s)		6.6			43.3			4.9			4.6	
Confl. Peds. (#/hr)			3	3								
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)	435	675	72	27	377	172	232	1273	133	358	78	463
Shared Lane Traffic (%)												
Lane Group Flow (vph)	435	675	72	27	377	172	232	1273	133	358	78	463
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(ft)		22			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	10.5	21.3	21.3	11.0	21.0	21.0	11.0	21.0	21.0	11.0	21.0	21.0
Total Split (s)	18.0	28.0	28.0	11.0	21.0	21.0	17.0	32.0	32.0	16.0	31.0	31.0
Total Split (%)	15.0%	23.3%	23.3%	9.2%	17.5%	17.5%	14.2%	26.7%	26.7%	13.3%	25.8%	25.8%
Maximum Green (s)	12.5	21.7	21.7	5.0	15.0	15.0	11.0	26.0	26.0	10.0	25.0	25.0
Yellow Time (s)	3.0	4.3	4.3	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	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	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.3	6.3	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	4.0	4.0	2.0	4.0	4.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	12.5	26.1	26.1	5.0	15.0	15.0	13.2	45.0	45.0	24.0	55.8	55.8
Actuated g/C Ratio	0.10	0.22	0.22	0.04	0.12	0.12	0.11	0.38	0.38	0.20	0.46	0.46
v/c Ratio	1.30	0.93	0.16	0.39	0.91	0.51	0.65	0.71	0.19	0.56	0.05	0.49
Control Delay	197.1	68.0	0.7	72.5	78.4	12.8	59.9	34.3	0.6	51.5	17.6	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	197.1	68.0	0.7	72.5	78.4	12.8	59.9	34.3	0.6	51.5	17.6	3.9
LOS	F	E	A	E	E	B	E	C	A	D	B	A
Approach Delay		111.4			58.6			35.2			24.1	
Approach LOS		F			E			D			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.30

Intersection Signal Delay: 57.0

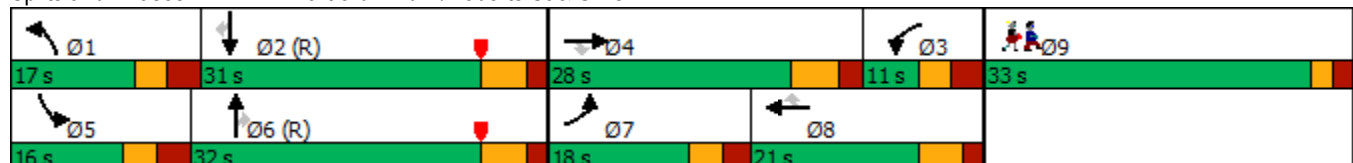
Intersection LOS: E

Intersection Capacity Utilization 75.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 222: E Hartford Blvd N/Roberts St & Silver Ln




Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	28%
Maximum Green (s)	29.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	35.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↗	↘			↕	
Traffic Volume (vph)	54	1019	10	11	482	94	1	1	4	130	0	13
Future Volume (vph)	54	1019	10	11	482	94	1	1	4	130	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00				1.00	
Frt		0.999			0.976			0.880			0.988	
Flt Protected		0.998			0.999		0.950				0.956	
Satd. Flow (prot)	0	3314	0	0	3226	0	1662	1539	0	0	1650	0
Flt Permitted		0.888			0.928		0.757				0.742	
Satd. Flow (perm)	0	2948	0	0	2997	0	1320	1539	0	0	1280	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			29			4			73	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		2540			2556			982			825	
Travel Time (s)		43.3			43.6			22.3			18.8	
Confl. Peds. (#/hr)	7					7	3					3
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)	59	1108	11	12	524	102	1	1	4	141	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1178	0	0	638	0	1	5	0	0	155	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left	Thru	
Leading Detector (ft)	20	266		20	266		20	100		20	100	
Trailing Detector (ft)	0	130		0	130		0	0		0	0	
Detector 1 Position(ft)	0	130		0	130		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	8.0		0.0	0.0	
Detector 2 Position(ft)		260			260			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	

Lanes, Volumes, Timings
223: Rentschler Field/Simmons Rd & Silver Ln













01/13/2020

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	






Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		10.0	10.0		9.0	9.0	
Minimum Split (s)	23.3	23.3		23.3	23.3		20.0	20.0		13.0	13.0	
Total Split (s)	45.0	45.0		45.0	45.0		20.0	20.0		20.0	20.0	
Total Split (%)	47.9%	47.9%		47.9%	47.9%		21.3%	21.3%		21.3%	21.3%	
Maximum Green (s)	39.7	39.7		39.7	39.7		15.0	15.0		16.0	16.0	
Yellow Time (s)	4.3	4.3		4.3	4.3		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.3			5.3		5.0	5.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		34.1			34.1		11.3	11.3			12.3	
Actuated g/C Ratio		0.57			0.57		0.19	0.19			0.20	
v/c Ratio		0.70			0.37		0.00	0.02			0.48	
Control Delay		15.3			9.7		27.0	19.8			20.0	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		15.3			9.7		27.0	19.8			20.0	
LOS		B			A		C	B			C	
Approach Delay		15.3			9.7			21.0			20.0	
Approach LOS		B			A			C			C	
Intersection Summary												
Area Type:	Other											
Cycle Length: 94												
Actuated Cycle Length: 60.1												
Natural Cycle: 90												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.70												
Intersection Signal Delay: 13.9				Intersection LOS: B								
Intersection Capacity Utilization 73.7%				ICU Level of Service D								
Analysis Period (min) 15												





















Splits and Phases: 223: Rentschler Field/Simmons Rd & Silver Ln

 Ø2	 Ø4	 Ø9
20 s	45 s	29 s
 Ø6	 Ø8	
20 s	45 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	31%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
224: Forbes St & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	692	324	111	447	81	237	157	106	120	202	90
Future Volume (vph)	95	692	324	111	447	81	237	157	106	120	202	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370		0	190		0	350		0	330		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	1.00		1.00	0.99		1.00	1.00	
Frt		0.952			0.977			0.940			0.954	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3140	0	1662	3235	0	1662	1635	0	1662	1661	0
Flt Permitted	0.360			0.089			0.212			0.477		
Satd. Flow (perm)	629	3140	0	156	3235	0	371	1635	0	833	1661	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		769			1106			1073			978	
Travel Time (s)		13.1			18.9			24.4			22.2	
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
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)	103	752	352	121	486	88	258	171	115	130	220	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	1104	0	121	574	0	258	286	0	130	318	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left	Thru		Left	Thru	
Leading Detector (ft)	20	326		20	326		20	100		20	100	
Trailing Detector (ft)	0	160		0	160		0	0		0	0	
Detector 1 Position(ft)	0	160		0	160		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		320			320			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
224: Forbes St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		
Detector Phase	7	4		3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	10.0		3.0	10.0	
Minimum Split (s)	7.0	20.5		7.0	21.3		7.0	20.0		7.0	20.0	
Total Split (s)	10.0	48.0		11.0	49.0		16.0	45.0		10.0	39.0	
Total Split (%)	6.8%	32.7%		7.5%	33.3%		10.9%	30.6%		6.8%	26.5%	
Maximum Green (s)	6.0	42.5		7.0	43.6		12.0	40.1		6.0	34.1	
Yellow Time (s)	3.0	4.4		3.0	4.3		3.0	3.6		3.0	3.6	
All-Red Time (s)	1.0	1.1		1.0	1.1		1.0	1.3		1.0	1.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.5		4.0	5.4		4.0	4.9		4.0	4.9	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	51.0	43.4		53.2	44.6		42.5	31.4		32.3	25.3	
Actuated g/C Ratio	0.46	0.39		0.48	0.40		0.38	0.28		0.29	0.23	
v/c Ratio	0.30	0.91		0.71	0.44		0.91	0.62		0.46	0.85	
Control Delay	22.7	45.3		45.5	28.8		65.3	43.2		33.4	63.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.7	45.3		45.5	28.8		65.3	43.2		33.4	63.4	
LOS	C	D		D	C		E	D		C	E	
Approach Delay		43.4			31.7			53.7			54.7	
Approach LOS		D			C			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 147

Actuated Cycle Length: 111.9

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 44.3

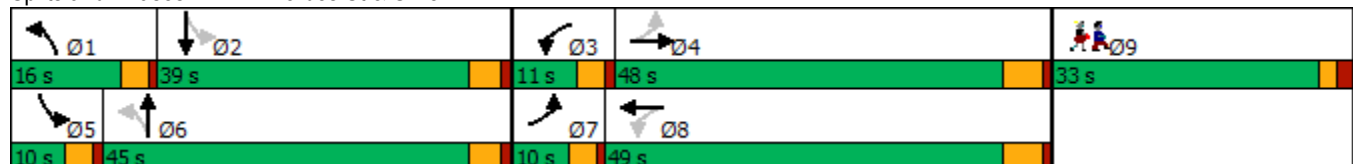
Intersection LOS: D

Intersection Capacity Utilization 80.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 224: Forbes St & Silver Ln























Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	22%
Maximum Green (s)	29.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	8
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	266	949	9	18	444	182	3	0	8	236	5	230
Future Volume (vph)	266	949	9	18	444	182	3	0	8	236	5	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0	180		150	0		0	0		110
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999				0.850		0.899				0.850
Flt Protected	0.950			0.950				0.988			0.953	
Satd. Flow (prot)	1662	3320	0	1662	3323	1487	0	1554	0	0	1667	1487
Flt Permitted	0.331			0.244				0.952			0.722	
Satd. Flow (perm)	579	3320	0	427	3323	1487	0	1497	0	0	1263	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				198		150				250
Link Speed (mph)		40			40			20			30	
Link Distance (ft)		1041			769			594			549	
Travel Time (s)		17.7			13.1			20.3			12.5	
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)	289	1032	10	20	483	198	3	0	9	257	5	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	289	1042	0	20	483	198	0	12	0	0	262	250
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4		3	8			6			2	7
Permitted Phases	4			8		8	6			2		2

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	6	6		2	2	7
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	21.0		9.0	21.0	21.0	9.2	9.2		9.2	9.2	9.0
Total Split (s)	11.0	25.0		9.0	23.0	23.0	15.0	15.0		15.0	15.0	11.0
Total Split (%)	13.8%	31.3%		11.3%	28.8%	28.8%	18.8%	18.8%		18.8%	18.8%	13.8%
Maximum Green (s)	7.0	19.0		5.0	17.0	17.0	10.8	10.8		10.8	10.8	7.0
Yellow Time (s)	3.0	4.3		3.0	4.3	4.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.7		1.0	1.7	1.7	1.2	1.2		1.2	1.2	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0		4.2			4.2	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	1.5		2.0	1.5	1.5	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	41.5	35.7		28.4	21.2	21.2		30.3			30.3	48.8
Actuated g/C Ratio	0.52	0.45		0.36	0.26	0.26		0.38			0.38	0.61
v/c Ratio	0.59	0.70		0.09	0.55	0.37		0.02			0.55	0.25
Control Delay	18.8	22.1		9.7	27.4	5.6		0.1			26.9	1.8
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	18.8	22.1		9.7	27.4	5.6		0.1			26.9	1.8
LOS	B	C		A	C	A		A			C	A
Approach Delay		21.4			20.7			0.1			14.7	
Approach LOS		C			C			A			B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 73 (91%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 19.8

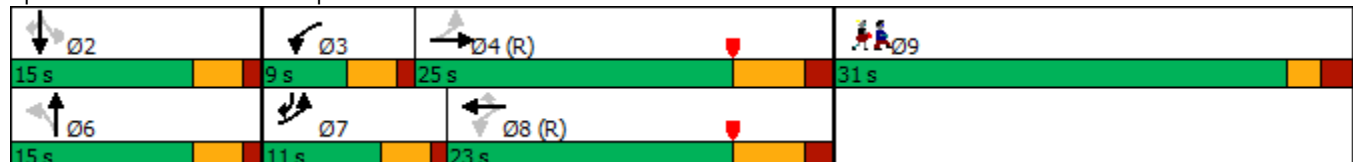
Intersection LOS: B

Intersection Capacity Utilization 62.5%

ICU Level of Service B

Analysis Period (min) 15











Splits and Phases: 236: Phillips Farm Rd/Charter Oak Mall & Silver Ln



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	39%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	385	436	0	677	391	92
Future Volume (vph)	385	436	0	677	391	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370	370	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	0.95
Frt		0.850			0.971	
Flt Protected	0.950					
Satd. Flow (prot)	1662	2617	0	3323	3227	0
Flt Permitted	0.950					
Satd. Flow (perm)	1662	2617	0	3323	3227	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		474			30	
Link Speed (mph)	60			40	40	
Link Distance (ft)	663			202	1149	
Travel Time (s)	7.5			3.4	19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	474	0	736	425	100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	474	0	736	525	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right				
Leading Detector (ft)	20	20		26	26	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				20	20	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			6	2	
Permitted Phases		4				

Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020



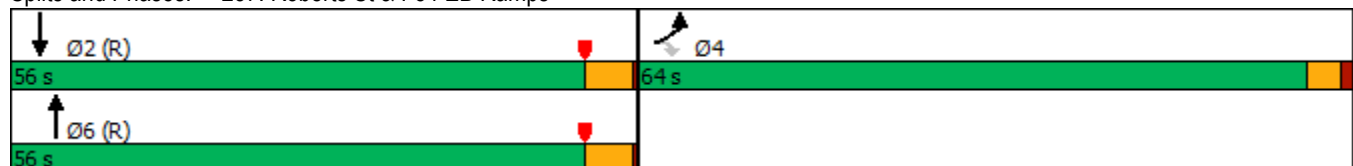
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		6	2	
Switch Phase						
Minimum Initial (s)	9.0	9.0		15.0	15.0	
Minimum Split (s)	13.2	13.2		19.8	19.8	
Total Split (s)	64.0	64.0		56.0	56.0	
Total Split (%)	53.3%	53.3%		46.7%	46.7%	
Maximum Green (s)	59.8	59.8		51.2	51.2	
Yellow Time (s)	3.0	3.0		4.3	4.3	
All-Red Time (s)	1.2	1.2		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.2	4.2		4.8	4.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5	1.5		2.0	2.0	
Recall Mode	None	None		C-Min	C-Min	
Act Effect Green (s)	36.6	36.6		74.4	74.4	
Actuated g/C Ratio	0.30	0.30		0.62	0.62	
v/c Ratio	0.82	0.42		0.36	0.26	
Control Delay	51.9	3.4		3.2	11.3	
Queue Delay	0.0	0.0		0.3	0.0	
Total Delay	51.9	3.4		3.5	11.3	
LOS	D	A		A	B	
Approach Delay	26.1			3.5	11.3	
Approach LOS	C			A	B	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 70 (58%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 14.8
Intersection Capacity Utilization 47.5%
Analysis Period (min) 15





















Intersection LOS: B
ICU Level of Service A

Splits and Phases: 257: Roberts St & I-84 EB Ramps



Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	1023	38	123	810	6	36	7	122	4	5	43
Future Volume (vph)	27	1023	38	123	810	6	36	7	122	4	5	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	0		170	0		150
Storage Lanes	1		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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			0.99	0.97		1.00	0.97
Frt		0.995			0.999				0.850			0.850
Flt Protected	0.950			0.950				0.960			0.978	
Satd. Flow (prot)	1662	1739	0	1662	1747	0	0	1679	1487	0	1711	1487
Flt Permitted	0.274			0.062				0.756			0.860	
Satd. Flow (perm)	479	1739	0	108	1747	0	0	1315	1447	0	1500	1447
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			1				133			89
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		463			289			670			630	
Travel Time (s)		7.9			4.9			18.3			14.3	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		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)	29	1112	41	134	880	7	39	8	133	4	5	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	1153	0	134	887	0	0	47	133	0	9	47
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	8.0	0.0	0.0	8.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8			6			2	
Permitted Phases	4			8			6		6	2		2
Detector Phase	4	4		3	8		6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	15.0	15.0		5.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0		8.0	20.0		13.0	13.0	13.0	13.0	13.0	13.0
Total Split (s)	65.0	65.0		8.0	73.0		13.0	13.0	13.0	13.0	13.0	13.0
Total Split (%)	59.1%	59.1%		7.3%	66.4%		11.8%	11.8%	11.8%	11.8%	11.8%	11.8%
Maximum Green (s)	60.0	60.0		5.0	68.0		8.0	8.0	8.0	8.0	8.0	8.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	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	0.0
Total Lost Time (s)	5.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	2.0		2.0	2.0	2.0	3.0	3.0	3.0
Recall Mode	Min	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	61.0	61.0		71.1	69.1		7.5	7.5	7.5	7.5	7.5	7.5
Actuated g/C Ratio	0.67	0.67		0.78	0.76		0.08	0.08	0.08	0.08	0.08	0.08
v/c Ratio	0.09	0.98		0.78	0.67		0.43	0.55	0.55	0.07	0.23	0.23
Control Delay	8.7	40.1		46.9	10.8		54.7	17.4	17.4	43.5	4.3	4.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.7	40.1		46.9	10.8		54.7	17.4	17.4	43.5	4.3	4.3
LOS	A	D		D	B		D	B	B	D	A	A
Approach Delay		39.3			15.5		27.2				10.6	
Approach LOS		D			B		C				B	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 90.7

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 27.8

Intersection LOS: C

Intersection Capacity Utilization 83.7%

ICU Level of Service E

Analysis Period (min) 15


















Splits and Phases: 258: Mercer Ave/HOV Ramps & Silver Ln



Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	22%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	4
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	902	243	108	466	5	104	0	221	17	0	30
Future Volume (vph)	53	902	243	108	466	5	104	0	221	17	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98				0.98	
Frt		0.970			0.999			0.850			0.913	
Flt Protected		0.998			0.991		0.950				0.983	
Satd. Flow (prot)	0	3217	0	0	3290	0	1662	1487	0	0	1538	0
Flt Permitted		0.640			0.598		0.876				0.322	
Satd. Flow (perm)	0	2063	0	0	1985	0	1505	1487	0	0	504	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		50			1			476				
Link Speed (mph)		40			40			20			20	
Link Distance (ft)		2556			394			450			463	
Travel Time (s)		43.6			6.7			15.3			15.8	
Confl. Peds. (#/hr)	1					1	7					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)	58	980	264	117	507	5	113	0	240	18	0	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1302	0	0	629	0	113	240	0	0	51	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	

Lane Group	Ø1	Ø2	Ø9
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1 2		5	2 5			6			6	
Permitted Phases	1 2			2			6			6		
Detector Phase	1 2	1 2		5	2 5		6	6		6	6	
Switch Phase												
Minimum Initial (s)				5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)				9.2			9.2	9.2		9.2	9.2	
Total Split (s)				9.2			12.6	12.6		12.6	12.6	
Total Split (%)				11.5%			15.8%	15.8%		15.8%	15.8%	
Maximum Green (s)				5.0			8.4	8.4		8.4	8.4	
Yellow Time (s)				3.0			3.0	3.0		3.0	3.0	
All-Red Time (s)				1.2			1.2	1.2		1.2	1.2	
Lost Time Adjust (s)							0.0	0.0			0.0	
Total Lost Time (s)							4.2	4.2			4.2	
Lead/Lag				Lead			Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0			3.0	3.0		3.0	3.0	
Recall Mode				Max			None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		50.7		23.3			8.4	8.4			8.4	
Actuated g/C Ratio		0.63		0.29			0.10	0.10			0.10	
v/c Ratio		0.98		0.95			0.72	0.41			0.98	
Control Delay		37.6		35.1			61.1	2.2			162.6	
Queue Delay		0.7		0.0			0.0	0.0			0.0	
Total Delay		38.3		35.1			61.1	2.2			162.6	
LOS		D		D			E	A			F	
Approach Delay		38.3		35.1				21.0			162.6	
Approach LOS		D		D				C			F	










Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 37.5
 Intersection Capacity Utilization 79.6%
 Analysis Period (min) 15

Intersection LOS: D

ICU Level of Service D

Splits and Phases: 2391: Aldi/Silver Ln Plaza & Silver Ln

  Ø1	  Ø2 (R)	  Ø5	  Ø6	 Ø9
15.7 s	22.5 s	9.2 s	12.6 s	20 s

Lane Group	Ø1	Ø2	Ø9
Protected Phases	1	2	9
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	7.0
Minimum Split (s)	9.5	9.2	20.0
Total Split (s)	15.7	22.5	20.0
Total Split (%)	20%	28%	25%
Maximum Green (s)	12.2	18.3	16.0
Yellow Time (s)	3.0	3.0	2.0
All-Red Time (s)	0.5	1.2	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?			
Vehicle Extension (s)	2.0	3.0	2.0
Recall Mode	Max	C-Max	None
Walk Time (s)			7.0
Flash Dont Walk (s)			9.0
Pedestrian Calls (#/hr)			7
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø1	Ø5	Ø9
Lane Configurations		↕↕	↕↕		↕	↕			
Traffic Volume (vph)	19	1114	523	50	40	20			
Future Volume (vph)	19	1114	523	50	40	20			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00			
Ped Bike Factor		1.00	1.00						
Frt			0.987			0.850			
Flt Protected		0.999			0.950				
Satd. Flow (prot)	0	3320	3270	0	1662	1487			
Flt Permitted		0.955			0.950				
Satd. Flow (perm)	0	3174	3270	0	1662	1487			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)			12			22			
Link Speed (mph)		40	40		20				
Link Distance (ft)		394	1041		467				
Travel Time (s)		6.7	17.7		15.9				
Confl. Peds. (#/hr)	7			7					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	21	1211	568	54	43	22			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	1232	622	0	43	22			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Left	Left	Right	Left	Right			
Median Width(ft)		0	0		30				
Link Offset(ft)		0	0		0				
Crosswalk Width(ft)		16	16		16				
Two way Left Turn Lane									
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04			
Turning Speed (mph)	15			9	15	9			
Number of Detectors	1	2	2		1	1			
Detector Template	Left	Thru	Thru		Left	Right			
Leading Detector (ft)	20	100	100		20	20			
Trailing Detector (ft)	0	0	0		0	0			
Detector 1 Position(ft)	0	0	0		0	0			
Detector 1 Size(ft)	20	6	6		20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0			
Detector 2 Position(ft)		94	94						
Detector 2 Size(ft)		6	6						
Detector 2 Type		Cl+Ex	Cl+Ex						
Detector 2 Channel									
Detector 2 Extend (s)		0.0	0.0						
Turn Type	D.P+P	NA	NA		Prot	Perm			
Protected Phases	1 5	1 2 5	2		6		1	5	9
Permitted Phases	2					6			
Detector Phase	1 5	1 2 5	2		6	6			

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø1	Ø5	Ø9
Switch Phase									
Minimum Initial (s)			5.0		5.0	5.0	6.0	5.0	7.0
Minimum Split (s)			9.2		9.2	9.2	9.5	9.2	20.0
Total Split (s)			22.5		12.6	12.6	15.7	9.2	20.0
Total Split (%)			28.1%		15.8%	15.8%	20%	12%	25%
Maximum Green (s)			18.3		8.4	8.4	12.2	5.0	16.0
Yellow Time (s)			3.0		3.0	3.0	3.0	3.0	2.0
All-Red Time (s)			1.2		1.2	1.2	0.5	1.2	2.0
Lost Time Adjust (s)			0.0		0.0	0.0			
Total Lost Time (s)			4.2		4.2	4.2			
Lead/Lag			Lag		Lag	Lag	Lead	Lead	
Lead-Lag Optimize?									
Vehicle Extension (s)			3.0		3.0	3.0	2.0	3.0	2.0
Recall Mode			C-Max		None	None	Max	Max	None
Walk Time (s)									7.0
Flash Dont Walk (s)									9.0
Pedestrian Calls (#/hr)									7
Act Effect Green (s)		52.9	18.3		8.4	8.4			
Actuated g/C Ratio		0.66	0.23		0.10	0.10			
v/c Ratio		0.57	0.82		0.25	0.13			
Control Delay		3.3	25.6		36.9	16.1			
Queue Delay		0.0	0.0		0.0	0.0			
Total Delay		3.4	25.6		36.9	16.1			
LOS		A	C		D	B			
Approach Delay		3.4	25.6		29.8				
Approach LOS		A	C		C				

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 11.5

Intersection LOS: B

Intersection Capacity Utilization 55.3%

ICU Level of Service B










Analysis Period (min) 15

Splits and Phases: 2392: Silver Ln & Silver Ln Plaza

#239#2392 	#239#2392 	#239#2392 	#239#2392 	
15.7 s	22.5 s	9.2 s	12.6 s	20 s










Lanes, Volumes, Timings
101: CT 15 On-Ramp & Silver Ln

01/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	656	14	374	512	0	0
Future Volume (vph)	656	14	374	512	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	370		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997					
Flt Protected			0.950			
Satd. Flow (prot)	1744	0	1662	1749	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	1744	0	1662	1749	0	0
Link Speed (mph)	40			40	50	
Link Distance (ft)	781			759	593	
Travel Time (s)	13.3			12.9	8.1	
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	713	15	407	557	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	728	0	407	557	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	80.7%			ICU Level of Service D		
Analysis Period (min)	15					










Lanes, Volumes, Timings
102: CT 15 Off-Ramp & Silver Ln

01/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	653	0	0	881	14	433
Future Volume (vph)	653	0	0	881	14	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.869	
Flt Protected					0.998	
Satd. Flow (prot)	1749	0	0	1749	1517	0
Flt Permitted					0.998	
Satd. Flow (perm)	1749	0	0	1749	1517	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	759			463	1125	
Travel Time (s)	12.9			7.9	25.6	
Confl. Peds. (#/hr)					1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	710	0	0	958	15	471
Shared Lane Traffic (%)						
Lane Group Flow (vph)	710	0	0	958	486	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	11	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Yield			Yield	Yield	
Intersection Summary						
Area Type:	Other					
Control Type:	Roundabout					
Intersection Capacity Utilization	80.7%			ICU Level of Service D		
Analysis Period (min)	15					







Lanes, Volumes, Timings
103: Roberts St & I-84 EB On-Ramp

01/13/2020

						
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	677	1052	0	827	0	0
Future Volume (vph)	677	1052	0	827	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		1	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	1.00	0.86	1.00	1.00
Frt	0.936	0.850				
Flt Protected						
Satd. Flow (prot)	2980	1353	0	6017	0	0
Flt Permitted						
Satd. Flow (perm)	2980	1353	0	6017	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	268			202	622	
Travel Time (s)	4.6			3.4	14.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	736	1143	0	899	0	0
Shared Lane Traffic (%)		48%				
Lane Group Flow (vph)	1285	594	0	899	0	0
Enter Blocked Intersection	Yes	No	No	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		30	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	46.8%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings
104: P&W Connector & E Hartford Blvd N

























01/13/2020

						
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑↑↑	↑↑	↗		
Traffic Volume (vph)	0	1182	100	39	0	0
Future Volume (vph)	0	1182	100	39	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	0	4775	3323	1487	0	0
Flt Permitted						
Satd. Flow (perm)	0	4775	3323	1487	0	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		753	253		432	
Travel Time (s)		14.7	4.9		9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1285	109	42	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1285	109	42	0	0
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(ft)		24	11		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 26.2%				ICU Level of Service A		
Analysis Period (min) 15						

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	400	621	66	25	347	158	213	1171	122	329	72	426
Future Volume (vph)	400	621	66	25	347	158	213	1171	122	329	72	426
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		140	160		160	150		200	150		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	0.99								
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3224	3323	1487	1662	3323	1487	3224	4775	1487	3224	3323	1487
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3224	3323	1462	1648	3323	1487	3224	4775	1487	3224	3323	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173			172			225			463
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		385			2540			253			268	
Travel Time (s)		6.6			43.3			4.9			4.6	
Confl. Peds. (#/hr)			3	3								
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)	435	675	72	27	377	172	232	1273	133	358	78	463
Shared Lane Traffic (%)												
Lane Group Flow (vph)	435	675	72	27	377	172	232	1273	133	358	78	463
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(ft)		22			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	10.5	21.3	21.3	11.0	21.0	21.0	11.0	21.0	21.0	11.0	21.0	21.0
Total Split (s)	18.0	28.0	28.0	11.0	21.0	21.0	17.0	32.0	32.0	16.0	31.0	31.0
Total Split (%)	15.0%	23.3%	23.3%	9.2%	17.5%	17.5%	14.2%	26.7%	26.7%	13.3%	25.8%	25.8%
Maximum Green (s)	12.5	21.7	21.7	5.0	15.0	15.0	11.0	26.0	26.0	10.0	25.0	25.0
Yellow Time (s)	3.0	4.3	4.3	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	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	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.3	6.3	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	4.0	4.0	2.0	4.0	4.0
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	12.5	28.3	28.3	5.0	15.0	15.0	10.2	26.0	26.0	10.0	25.8	25.8
Actuated g/C Ratio	0.14	0.33	0.33	0.06	0.17	0.17	0.12	0.30	0.30	0.11	0.30	0.30
v/c Ratio	0.94	0.62	0.12	0.28	0.66	0.43	0.62	0.89	0.22	0.97	0.08	0.60
Control Delay	67.7	29.5	0.4	47.2	39.9	9.0	44.0	38.6	0.9	79.7	22.8	6.3
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	67.7	29.5	0.4	47.2	39.9	9.0	44.0	38.6	0.9	79.7	22.8	6.3
LOS	E	C	A	D	D	A	D	D	A	E	C	A
Approach Delay		41.8			31.0			36.3			37.0	
Approach LOS		D			C			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 87

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 37.3

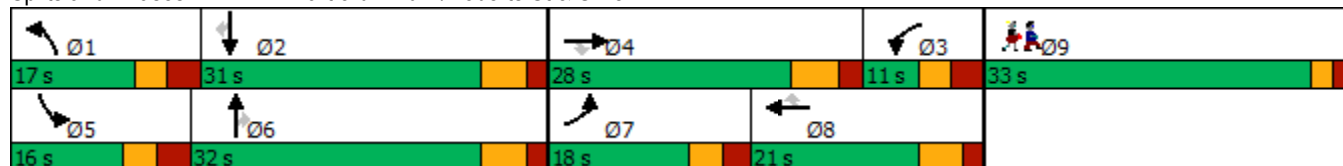
Intersection LOS: D

Intersection Capacity Utilization 75.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 222: E Hartford Blvd N/Roberts St & Silver Ln






















Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	28%
Maximum Green (s)	29.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	35.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	1019	10	11	482	94	1	1	4	130	0	13
Future Volume (vph)	54	1019	10	11	482	94	1	1	4	130	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00		1.00				1.00	
Frt		0.999			0.976			0.880			0.988	
Flt Protected	0.950			0.950			0.950				0.956	
Satd. Flow (prot)	1662	1747	0	1662	1700	0	1662	1539	0	0	1650	0
Flt Permitted	0.389			0.125			0.834				0.742	
Satd. Flow (perm)	679	1747	0	219	1700	0	1454	1539	0	0	1280	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			35			4			39	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		2540			2556			982			825	
Travel Time (s)		43.3			43.6			22.3			18.8	
Confl. Peds. (#/hr)	7					7	3					3
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)	59	1108	11	12	524	102	1	1	4	141	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	1119	0	12	626	0	1	5	0	0	155	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left	Thru	
Leading Detector (ft)	20	266		20	266		20	100		20	100	
Trailing Detector (ft)	0	130		0	130		0	0		0	0	
Detector 1 Position(ft)	0	130		0	130		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	8.0		0.0	0.0	
Detector 2 Position(ft)		260			260			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	

Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020






















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	23.3	23.3		23.3	23.3		13.0	13.0		13.0	13.0	
Total Split (s)	50.0	50.0		50.0	50.0		15.0	15.0		15.0	15.0	
Total Split (%)	76.9%	76.9%		76.9%	76.9%		23.1%	23.1%		23.1%	23.1%	
Maximum Green (s)	44.7	44.7		44.7	44.7		10.0	10.0		11.0	11.0	
Yellow Time (s)	4.3	4.3		4.3	4.3		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		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)	5.3	5.3		5.3	5.3		5.0	5.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)	44.4	44.4		44.4	44.4		9.3	9.3			10.1	
Actuated g/C Ratio	0.75	0.75		0.75	0.75		0.16	0.16			0.17	
v/c Ratio	0.12	0.85		0.07	0.49		0.00	0.02			0.62	
Control Delay	4.1	17.4		4.6	5.8		23.0	17.4			32.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	4.1	17.4		4.6	5.8		23.0	17.4			32.3	
LOS	A	B		A	A		C	B			C	
Approach Delay		16.7			5.8			18.3			32.3	
Approach LOS		B			A			B			C	
Intersection Summary												
Area Type:	Other											
Cycle Length: 65												
Actuated Cycle Length: 58.9												
Natural Cycle: 70												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.85												
Intersection Signal Delay: 14.4					Intersection LOS: B							
Intersection Capacity Utilization 76.7%					ICU Level of Service D							
Analysis Period (min) 15												

Splits and Phases: 223: Rentschler Field/Simmons Rd & Silver Ln















Lanes, Volumes, Timings
224: Forbes St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	692	324	111	447	81	237	157	106	120	202	90
Future Volume (vph)	95	692	324	111	447	81	237	157	106	120	202	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370		200	190		0	350		0	330		0
Storage Lanes	1		1	1		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00		0.99	1.00	1.00		0.99	0.99		0.99	0.99	
Frt			0.850		0.977			0.940			0.954	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3323	1487	1662	3241	0	3224	3103	0	1662	3144	0
Flt Permitted	0.397			0.281			0.950			0.950		
Satd. Flow (perm)	694	3323	1467	491	3241	0	3189	3103	0	1651	3144	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		769			1106			1073			978	
Travel Time (s)		13.1			18.9			24.4			22.2	
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
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)	103	752	352	121	486	88	258	171	115	130	220	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	752	352	121	574	0	258	286	0	130	318	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left		Right	Left			Left	Thru		Left	Thru	
Leading Detector (ft)	20	326	20	20	326		20	100		20	100	
Trailing Detector (ft)	0	160	0	0	160		0	0		0	0	
Detector 1 Position(ft)	0	160	0	0	160		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		320			320			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	

Lanes, Volumes, Timings
224: Forbes St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8								
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0		3.0	10.0		3.0	10.0	
Minimum Split (s)	7.0	20.5	20.5	7.0	21.3		6.0	20.0		6.0	20.0	
Total Split (s)	10.0	64.0	64.0	9.0	63.0		9.0	18.0		9.0	18.0	
Total Split (%)	10.0%	64.0%	64.0%	9.0%	63.0%		9.0%	18.0%		9.0%	18.0%	
Maximum Green (s)	6.0	58.5	58.5	5.0	57.6		6.0	13.1		6.0	13.1	
Yellow Time (s)	3.0	4.4	4.4	3.0	4.3		2.0	3.6		2.0	3.6	
All-Red Time (s)	1.0	1.1	1.1	1.0	1.1		1.0	1.3		1.0	1.3	
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)	4.0	5.5	5.5	4.0	5.4		3.0	4.9		3.0	4.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None	
Act Effect Green (s)	53.8	45.7	45.7	54.9	47.8		16.6	13.4		16.7	13.5	
Actuated g/C Ratio	0.54	0.46	0.46	0.55	0.48		0.17	0.13		0.17	0.14	
v/c Ratio	0.24	0.50	0.53	0.35	0.37		0.48	0.69		0.47	0.75	
Control Delay	10.2	21.8	23.9	12.6	18.0		41.8	50.4		44.6	53.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.2	21.8	23.9	12.6	18.0		41.8	50.4		44.6	53.3	
LOS	B	C	C	B	B		D	D		D	D	
Approach Delay		21.5			17.0			46.3			50.8	
Approach LOS		C			B			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 29.6

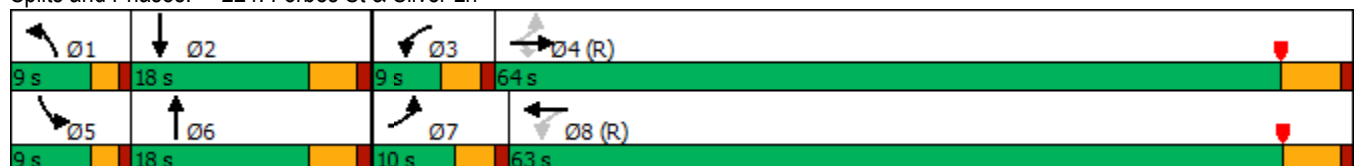
Intersection LOS: C

Intersection Capacity Utilization 55.9%

ICU Level of Service B

Analysis Period (min) 15






















Splits and Phases: 224: Forbes St & Silver Ln



Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	266	949	9	18	444	182	3	0	8	236	5	230
Future Volume (vph)	266	949	9	18	444	182	3	0	8	236	5	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0	180		769	0		0	0		110
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.999				0.850		0.899				0.850
Flt Protected	0.950			0.950				0.988		0.950	0.954	
Satd. Flow (prot)	1662	1747	0	1662	1749	1487	0	1554	0	1579	1585	1487
Flt Permitted	0.426			0.124				0.988		0.950	0.954	
Satd. Flow (perm)	745	1747	0	217	1749	1487	0	1554	0	1579	1585	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				198		111				250
Link Speed (mph)		40			40			20			30	
Link Distance (ft)		1041			769			594			549	
Travel Time (s)		17.7			13.1			20.3			12.5	
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)	289	1032	10	20	483	198	3	0	9	257	5	250
Shared Lane Traffic (%)										49%		
Lane Group Flow (vph)	289	1042	0	20	483	198	0	12	0	131	131	250
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	custom	custom	NA		custom	NA	custom
Protected Phases	7	4		3	8	2 8	1	1		2	2	2 7
Permitted Phases	4			8		8	1	1		2	2	2

Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	2 8	1	1		2	2	2 7
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	6.0	21.0		9.0	21.0		9.2	9.2		9.2	9.2	
Total Split (s)	6.0	74.8		6.0	74.8		9.2	9.2		10.0	10.0	
Total Split (%)	6.0%	74.8%		6.0%	74.8%		9.2%	9.2%		10.0%	10.0%	
Maximum Green (s)	3.0	68.8		3.0	68.8		5.0	5.0		5.8	5.8	
Yellow Time (s)	2.0	4.3		2.0	4.3		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.7		1.0	1.7		1.2	1.2		1.2	1.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0			4.2		4.2	4.2	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	1.5		2.0	1.5		2.0	2.0		2.0	2.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effect Green (s)	76.6	72.4		74.8	68.8	87.1		5.0		13.2	13.2	19.2
Actuated g/C Ratio	0.77	0.72		0.75	0.69	0.87		0.05		0.13	0.13	0.19
v/c Ratio	0.48	0.82		0.10	0.40	0.15		0.07		0.63	0.63	0.51
Control Delay	6.8	16.5		3.8	8.3	1.1		0.7		58.3	58.1	9.4
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	6.8	16.5		3.8	8.3	1.1		0.7		58.3	58.1	9.4
LOS	A	B		A	A	A		A		E	E	A
Approach Delay		14.4			6.1			0.7			34.3	
Approach LOS		B			A			A			C	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 60 (60%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 16.1

Intersection LOS: B

Intersection Capacity Utilization 79.0%

ICU Level of Service D






Analysis Period (min) 15

Splits and Phases: 236: Phillips Farm Rd/Charter Oak Mall & Silver Ln



Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	385	436	0	677	391	92
Future Volume (vph)	385	436	0	677	391	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370	370	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	0.95
Frt		0.850			0.971	
Flt Protected	0.950					
Satd. Flow (prot)	1662	2617	0	3323	3227	0
Flt Permitted	0.950					
Satd. Flow (perm)	1662	2617	0	3323	3227	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		458			56	
Link Speed (mph)	60			40	40	
Link Distance (ft)	663			202	1149	
Travel Time (s)	7.5			3.4	19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	474	0	736	425	100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	474	0	736	525	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right				
Leading Detector (ft)	20	20		26	26	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				20	20	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			6	2	
Permitted Phases		4				

Lanes, Volumes, Timings

257: Roberts St & I-84 EB Ramps

01/13/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		6	2	
Switch Phase						
Minimum Initial (s)	9.0	9.0		15.0	15.0	
Minimum Split (s)	13.2	13.2		19.8	19.8	
Total Split (s)	32.0	32.0		28.0	28.0	
Total Split (%)	53.3%	53.3%		46.7%	46.7%	
Maximum Green (s)	27.8	27.8		23.2	23.2	
Yellow Time (s)	3.0	3.0		4.3	4.3	
All-Red Time (s)	1.2	1.2		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.2	4.2		4.8	4.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5	1.5		2.0	2.0	
Recall Mode	None	None		Max	Max	
Act Effect Green (s)	15.8	15.8		23.5	23.5	
Actuated g/C Ratio	0.33	0.33		0.49	0.49	
v/c Ratio	0.77	0.41		0.46	0.33	
Control Delay	24.6	2.7		10.6	8.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	24.6	2.7		10.6	8.6	
LOS	C	A		B	A	
Approach Delay	13.0			10.6	8.6	
Approach LOS	B			B	A	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 48.4

Natural Cycle: 40

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 11.1

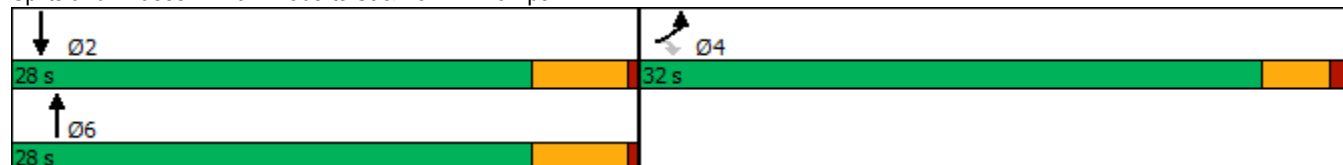
Intersection LOS: B

Intersection Capacity Utilization 47.5%

ICU Level of Service A





















Analysis Period (min) 15

Splits and Phases: 257: Roberts St & I-84 EB Ramps















Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	1023	38	123	810	6	36	7	122	4	5	43
Future Volume (vph)	27	1023	38	123	810	6	36	7	122	4	5	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	0		170	0		150
Storage Lanes	1		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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00	0.98		1.00	0.98
Frt		0.995			0.999				0.850			0.850
Flt Protected	0.950			0.950				0.960			0.978	
Satd. Flow (prot)	1662	1739	0	1662	1747	0	0	1679	1487	0	1711	1487
Flt Permitted	0.282			0.164				0.756			0.888	
Satd. Flow (perm)	493	1739	0	287	1747	0	0	1317	1450	0	1550	1450
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			2				133			47
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		463			289			670			630	
Travel Time (s)		7.9			4.9			18.3			14.3	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		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)	29	1112	41	134	880	7	39	8	133	4	5	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	1153	0	134	887	0	0	47	133	0	9	47
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	8.0	0.0	0.0	8.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm

Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6		6	2		2
Detector Phase	4	4		8	8		6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	15.0	15.0		14.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0		20.0	20.0		10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	69.0	69.0		69.0	69.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (%)	86.3%	86.3%		86.3%	86.3%		13.8%	13.8%	13.8%	13.8%	13.8%	13.8%
Maximum Green (s)	64.0	64.0		64.0	64.0		8.0	8.0	8.0	8.0	8.0	8.0
Yellow Time (s)	3.0	3.0		3.0	3.0		2.0	2.0	2.0	2.0	2.0	2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		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	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0			3.0	3.0		3.0	3.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		2.0	2.0		2.0	2.0	2.0	3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None	None	None	None	None
Act Effect Green (s)	53.8	53.8		53.8	53.8			7.6	7.6		7.6	7.6
Actuated g/C Ratio	0.82	0.82		0.82	0.82			0.12	0.12		0.12	0.12
v/c Ratio	0.07	0.81		0.57	0.62			0.31	0.47		0.05	0.22
Control Delay	2.2	10.8		15.3	5.4			37.5	13.1		32.6	14.0
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	2.2	10.8		15.3	5.4			37.5	13.1		32.6	14.0
LOS	A	B		B	A			D	B		C	B
Approach Delay		10.6			6.7			19.5			17.0	
Approach LOS		B			A			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 65.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 9.8

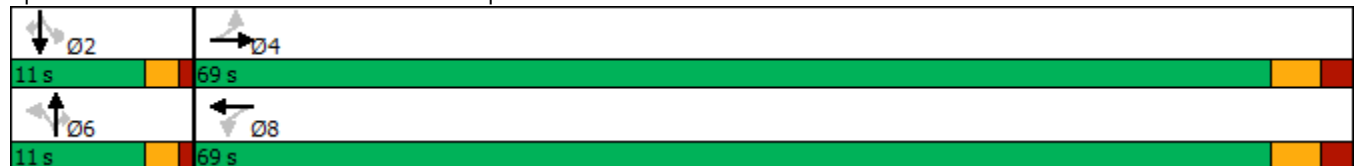
Intersection LOS: A

Intersection Capacity Utilization 88.5%

ICU Level of Service E






















Analysis Period (min) 15

Splits and Phases: 258: Mercer Ave/HOV Ramps & Silver Ln















Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	902	243	108	466	5	104	0	221	17	0	30
Future Volume (vph)	53	902	243	108	466	5	104	0	221	17	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		500	200		0	100		0	0		0
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			0.99				0.98
Frt			0.850		0.999				0.850			0.850
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1662	1749	1487	1662	1747	0	0	1662	1487	0	1662	1487
Flt Permitted	0.422			0.167				0.746			0.591	
Satd. Flow (perm)	738	1749	1487	292	1747	0	0	1286	1487	0	1034	1452
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			264		1				173			
Link Speed (mph)		40			40			20			20	
Link Distance (ft)		2556			394			450			463	
Travel Time (s)		43.6			6.7			15.3			15.8	
Confl. Peds. (#/hr)	1					1	7					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)	58	980	264	117	507	5	113	0	240	18	0	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	980	264	117	512	0	0	113	240	0	18	33
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	custom	pm+pt	NA		Perm	NA	custom	Perm	NA	custom

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	6	6	5	2			4	4 5		4	1 4
Permitted Phases	6		6	2			4		4	4		4
Detector Phase	1	6	6	5	2		4	4	4 5	4	4	1 4
Switch Phase												
Minimum Initial (s)	6.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	9.2	9.2	9.2	9.2		9.2	9.2		9.2	9.2	
Total Split (s)	8.0	74.0	74.0	8.0	74.0		18.0	18.0		18.0	18.0	
Total Split (%)	8.0%	74.0%	74.0%	8.0%	74.0%		18.0%	18.0%		18.0%	18.0%	
Maximum Green (s)	4.5	69.8	69.8	3.8	69.8		13.8	13.8		13.8	13.8	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.5	1.2	1.2	1.2	1.2		1.2	1.2		1.2	1.2	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.5	4.2	4.2	4.2	4.2			4.2			4.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	None	None	Max	C-Max		None	None		None	None	
Act Effct Green (s)	76.5	69.8	69.8	75.1	69.8			12.3	21.8		12.3	22.5
Actuated g/C Ratio	0.76	0.70	0.70	0.75	0.70			0.12	0.22		0.12	0.22
v/c Ratio	0.09	0.80	0.24	0.40	0.42			0.72	0.52		0.14	0.10
Control Delay	2.8	17.0	1.2	8.6	2.9			67.1	15.2		40.9	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.2			0.0	0.2		0.0	0.0
Total Delay	2.8	17.0	1.2	8.6	3.1			67.1	15.5		40.9	31.8
LOS	A	B	A	A	A			E	B		D	C
Approach Delay		13.1			4.1			32.0			35.0	
Approach LOS		B			A			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 81 (81%), Referenced to phase 2:WBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 14.0

Intersection LOS: B

Intersection Capacity Utilization 76.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2391: Aldi/Silver Ln Plaza & Silver Ln



Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	1114	523	50	40	20
Future Volume (vph)	19	1114	523	50	40	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		1.00			
Frt			0.988			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1662	1749	1725	0	1662	1487
Flt Permitted	0.376				0.950	
Satd. Flow (perm)	657	1749	1725	0	1662	1487
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			13			22
Link Speed (mph)		40	40		20	
Link Distance (ft)		394	1041		467	
Travel Time (s)		6.7	17.7		15.9	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	1211	568	54	43	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	1211	622	0	43	22
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	D.P+P	NA	NA		Prot	Perm
Protected Phases	1	1 2	2		4	
Permitted Phases	2					4
Detector Phase	1	1 2	2		4	4

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)	6.0		5.0		5.0	5.0
Minimum Split (s)	9.5		9.2		9.2	9.2
Total Split (s)	10.0		78.0		12.0	12.0
Total Split (%)	10.0%		78.0%		12.0%	12.0%
Maximum Green (s)	6.5		73.8		7.8	7.8
Yellow Time (s)	3.0		3.0		3.0	3.0
All-Red Time (s)	0.5		1.2		1.2	1.2
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	3.5		4.2		4.2	4.2
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		3.0		3.0	3.0
Recall Mode	None		C-Max		None	None
Act Effct Green (s)	83.6	87.8	75.4		7.1	7.1
Actuated g/C Ratio	0.84	0.88	0.75		0.07	0.07
v/c Ratio	0.03	0.79	0.48		0.36	0.17
Control Delay	1.4	6.1	3.9		52.9	20.9
Queue Delay	0.0	0.2	0.0		0.0	0.0
Total Delay	1.4	6.3	3.9		52.9	20.9
LOS	A	A	A		D	C
Approach Delay		6.2	3.9		42.1	
Approach LOS		A	A		D	

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 75 (75%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 6.7
Intersection Capacity Utilization 69.6%
Analysis Period (min) 15

Intersection LOS: A
ICU Level of Service C

Splits and Phases: 2392: Silver Ln & Silver Ln Plaza












Lanes, Volumes, Timings
101: CT 15 On-Ramp & Silver Ln

01/13/2020

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰		↱	↱		
Traffic Volume (vph)	358	7	220	368	0	0
Future Volume (vph)	358	7	220	368	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	370		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997					
Flt Protected			0.950			
Satd. Flow (prot)	1744	0	1662	1749	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	1744	0	1662	1749	0	0
Link Speed (mph)	40			40	50	
Link Distance (ft)	781			759	593	
Travel Time (s)	13.3			12.9	8.1	
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	389	8	239	400	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	397	0	239	400	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	50.4%			ICU Level of Service A		
Analysis Period (min)	15					










Lanes, Volumes, Timings
102: CT 15 Off-Ramp & Silver Ln

01/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	358	0	0	588	1	203
Future Volume (vph)	358	0	0	588	1	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.866	
Flt Protected						
Satd. Flow (prot)	1749	0	0	1749	1515	0
Flt Permitted						
Satd. Flow (perm)	1749	0	0	1749	1515	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	759			463	1125	
Travel Time (s)	12.9			7.9	25.6	
Confl. Peds. (#/hr)					1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	389	0	0	639	1	221
Shared Lane Traffic (%)						
Lane Group Flow (vph)	389	0	0	639	222	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	11	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	50.4%			ICU Level of Service A		
Analysis Period (min)	15					







Lanes, Volumes, Timings
103: Roberts St & I-84 EB On-Ramp

01/13/2020

						
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	315	174	0	634	0	0
Future Volume (vph)	315	174	0	634	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		1	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	1.00	0.86	1.00	1.00
Frt	0.989	0.850				
Flt Protected						
Satd. Flow (prot)	3149	1353	0	6017	0	0
Flt Permitted						
Satd. Flow (perm)	3149	1353	0	6017	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	268			202	622	
Travel Time (s)	4.6			3.4	14.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	342	189	0	689	0	0
Shared Lane Traffic (%)		15%				
Lane Group Flow (vph)	370	161	0	689	0	0
Enter Blocked Intersection	Yes	No	No	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		30	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.9%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings
104: P&W Connector & E Hartford Blvd N

























01/13/2020

						
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑↑↑	↑↑	↗		
Traffic Volume (vph)	0	1182	100	39	0	0
Future Volume (vph)	0	1182	100	39	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	0	4775	3323	1487	0	0
Flt Permitted						
Satd. Flow (perm)	0	4775	3323	1487	0	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		753	253		432	
Travel Time (s)		14.7	4.9		9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1285	109	42	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1285	109	42	0	0
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(ft)		24	11		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 26.2%				ICU Level of Service A		
Analysis Period (min) 15						

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	335	58	39	284	113	72	169	44	214	204	216
Future Volume (vph)	171	335	58	39	284	113	72	169	44	214	204	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		140	160		160	150		200	150		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	0.99								
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3224	3323	1487	1662	3323	1487	3224	4775	1487	3224	3323	1487
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3224	3323	1461	1650	3323	1487	3224	4775	1487	3224	3323	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187			183			230			235
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		385			2540			253			268	
Travel Time (s)		6.6			43.3			4.9			4.6	
Confl. Peds. (#/hr)			3	3								
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)	186	364	63	42	309	123	78	184	48	233	222	235
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	364	63	42	309	123	78	184	48	233	222	235
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(ft)		22			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	10.5	21.3	21.3	11.0	21.0	21.0	11.0	21.0	21.0	11.0	21.0	21.0
Total Split (s)	21.0	31.0	31.0	17.0	27.0	27.0	15.0	28.0	28.0	24.0	37.0	37.0
Total Split (%)	14.4%	21.2%	21.2%	11.6%	18.5%	18.5%	10.3%	19.2%	19.2%	16.4%	25.3%	25.3%
Maximum Green (s)	15.5	24.7	24.7	11.0	21.0	21.0	9.0	22.0	22.0	18.0	31.0	31.0
Yellow Time (s)	3.0	4.3	4.3	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	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	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.3	6.3	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	4.0	4.0	2.0	4.0	4.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	12.6	24.8	24.8	9.0	19.8	19.8	7.9	75.3	75.3	14.9	82.2	82.2
Actuated g/C Ratio	0.09	0.17	0.17	0.06	0.14	0.14	0.05	0.52	0.52	0.10	0.56	0.56
v/c Ratio	0.67	0.65	0.16	0.41	0.69	0.34	0.45	0.07	0.05	0.71	0.12	0.25
Control Delay	76.7	62.8	0.8	77.2	68.3	3.5	74.6	19.3	0.1	75.3	16.1	2.7
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	76.7	62.8	0.8	77.2	68.3	3.5	74.6	19.3	0.1	75.3	16.1	2.7
LOS	E	E	A	E	E	A	E	B	A	E	B	A
Approach Delay		60.6			52.3			30.3			31.6	
Approach LOS		E			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 146

Actuated Cycle Length: 146

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

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 44.6

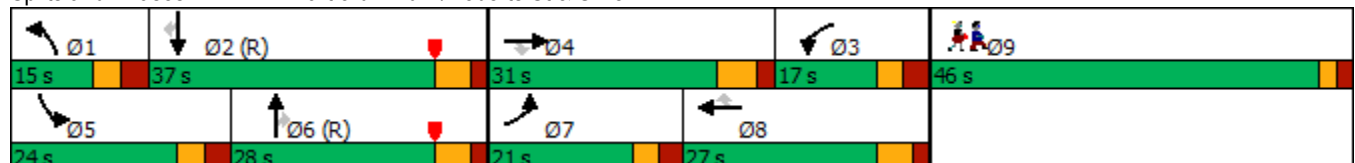
Intersection LOS: D

Intersection Capacity Utilization 55.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 222: E Hartford Blvd N/Roberts St & Silver Ln




















Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	7.0
Total Split (s)	46.0
Total Split (%)	32%
Maximum Green (s)	42.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	466	5	1	442	65	4	0	1	41	0	39
Future Volume (vph)	28	466	5	1	442	65	4	0	1	41	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00				0.99	
Frt		0.999			0.981			0.850			0.935	
Flt Protected		0.997					0.950				0.975	
Satd. Flow (prot)	0	3310	0	0	3249	0	1662	1487	0	0	1581	0
Flt Permitted		0.909			0.954		0.831				0.850	
Satd. Flow (perm)	0	3017	0	0	3099	0	1447	1487	0	0	1379	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			21			561			73	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		2540			2556			982			825	
Travel Time (s)		43.3			43.6			22.3			18.8	
Confl. Peds. (#/hr)	7					7	3					3
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)	30	507	5	1	480	71	4	0	1	45	0	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	542	0	0	552	0	4	1	0	0	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left	Thru	
Leading Detector (ft)	20	266		20	266		20	100		20	100	
Trailing Detector (ft)	0	130		0	130		0	0		0	0	
Detector 1 Position(ft)	0	130		0	130		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	8.0		0.0	0.0	
Detector 2 Position(ft)		260			260			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	

Lanes, Volumes, Timings
223: Rentschler Field/Simmons Rd & Silver Ln













01/13/2020

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	




Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		10.0	10.0		9.0	9.0	
Minimum Split (s)	23.3	23.3		23.3	23.3		20.0	20.0		13.0	13.0	
Total Split (s)	45.0	45.0		45.0	45.0		20.0	20.0		20.0	20.0	
Total Split (%)	47.9%	47.9%		47.9%	47.9%		21.3%	21.3%		21.3%	21.3%	
Maximum Green (s)	39.7	39.7		39.7	39.7		15.0	15.0		16.0	16.0	
Yellow Time (s)	4.3	4.3		4.3	4.3		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.3			5.3		5.0	5.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		28.0			28.0		10.6	10.6			11.1	
Actuated g/C Ratio		0.58			0.58		0.22	0.22			0.23	
v/c Ratio		0.31			0.31		0.01	0.00			0.23	
Control Delay		10.7			10.2		19.5	0.0			9.3	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		10.7			10.2		19.5	0.0			9.3	
LOS		B			B		B	A			A	
Approach Delay		10.7			10.2			15.6			9.3	
Approach LOS		B			B			B			A	
Intersection Summary												
Area Type:	Other											
Cycle Length: 94												
Actuated Cycle Length: 48.3												
Natural Cycle: 75												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.31												
Intersection Signal Delay: 10.4				Intersection LOS: B								
Intersection Capacity Utilization 53.3%				ICU Level of Service A								
Analysis Period (min) 15												





















Splits and Phases: 223: Rentschler Field/Simmons Rd & Silver Ln

 Ø2	 Ø4	 Ø9
20 s	45 s	29 s
 Ø6	 Ø8	
20 s	45 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	31%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
224: Forbes St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	252	151	54	216	80	112	119	67	77	123	46
Future Volume (vph)	65	252	151	54	216	80	112	119	67	77	123	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370		0	190		0	350		0	330		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	
Frt		0.944			0.959			0.946			0.959	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3110	0	1662	3167	0	1662	1646	0	1662	1670	0
Flt Permitted	0.493			0.498			0.496			0.631		
Satd. Flow (perm)	861	3110	0	870	3167	0	866	1646	0	1102	1670	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		769			1106			1073			978	
Travel Time (s)		13.1			18.9			24.4			22.2	
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
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)	71	274	164	59	235	87	122	129	73	84	134	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	438	0	59	322	0	122	202	0	84	184	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left	Thru		Left	Thru	
Leading Detector (ft)	20	326		20	326		20	100		20	100	
Trailing Detector (ft)	0	160		0	160		0	0		0	0	
Detector 1 Position(ft)	0	160		0	160		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		320			320			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	













Existing Conditions Sat Peak
NCM

Synchro 10 Report
Page 13

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
224: Forbes St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		
Detector Phase	7	4		3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	10.0		3.0	10.0	
Minimum Split (s)	7.0	20.5		7.0	21.3		7.0	20.0		7.0	20.0	
Total Split (s)	10.0	38.0		8.0	36.0		11.0	28.0		8.0	25.0	
Total Split (%)	8.7%	33.0%		7.0%	31.3%		9.6%	24.3%		7.0%	21.7%	
Maximum Green (s)	6.0	32.5		4.0	30.6		7.0	23.1		4.0	20.1	
Yellow Time (s)	3.0	4.4		3.0	4.3		3.0	3.6		3.0	3.6	
All-Red Time (s)	1.0	1.1		1.0	1.1		1.0	1.3		1.0	1.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.5		4.0	5.4		4.0	4.9		4.0	4.9	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	26.1	21.1		22.6	17.9		21.7	15.4		17.3	13.2	
Actuated g/C Ratio	0.42	0.34		0.36	0.29		0.35	0.25		0.28	0.21	
v/c Ratio	0.16	0.42		0.16	0.36		0.31	0.50		0.24	0.53	
Control Delay	16.8	22.5		17.7	24.2		20.3	30.0		20.9	33.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.8	22.5		17.7	24.2		20.3	30.0		20.9	33.4	
LOS	B	C		B	C		C	C		C	C	
Approach Delay		21.7			23.2			26.3			29.5	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 62.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 24.5

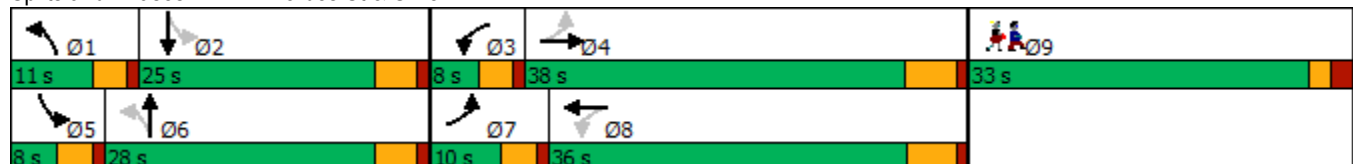
Intersection LOS: C

Intersection Capacity Utilization 46.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 224: Forbes St & Silver Ln























Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	29%
Maximum Green (s)	29.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	8
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	357	11	14	325	147	4	4	14	142	2	184
Future Volume (vph)	157	357	11	14	325	147	4	4	14	142	2	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0	180		150	0		0	0		110
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995				0.850		0.912				0.850
Flt Protected	0.950			0.950				0.991			0.953	
Satd. Flow (prot)	1662	3307	0	1662	3323	1487	0	1581	0	0	1667	1487
Flt Permitted	0.493			0.516				0.958			0.712	
Satd. Flow (perm)	862	3307	0	903	3323	1487	0	1528	0	0	1245	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				160		15				200
Link Speed (mph)		40			40			20			30	
Link Distance (ft)		1041			769			594			549	
Travel Time (s)		17.7			13.1			20.3			12.5	
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)	171	388	12	15	353	160	4	4	15	154	2	200
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	400	0	15	353	160	0	23	0	0	156	200
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4		3	8			6			2	7
Permitted Phases	4			8		8	6			2		2

Existing Conditions Sat Peak
NCM

Synchro 10 Report
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Lanes, Volumes, Timings
236: Phillips Farm Rd/Charter Oak Mall & Silver Ln













01/13/2020

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	

Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	6	6		2	2	7
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	21.0		9.0	21.0	21.0	9.2	9.2		9.2	9.2	9.0
Total Split (s)	11.0	25.0		9.0	23.0	23.0	15.0	15.0		15.0	15.0	11.0
Total Split (%)	13.8%	31.3%		11.3%	28.8%	28.8%	18.8%	18.8%		18.8%	18.8%	13.8%
Maximum Green (s)	7.0	19.0		5.0	17.0	17.0	10.8	10.8		10.8	10.8	7.0
Yellow Time (s)	3.0	4.3		3.0	4.3	4.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.7		1.0	1.7	1.7	1.2	1.2		1.2	1.2	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0		4.2			4.2	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	1.5		2.0	1.5	1.5	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	55.5	51.6		49.0	42.0	42.0		16.3			16.3	28.0
Actuated g/C Ratio	0.69	0.64		0.61	0.52	0.52		0.20			0.20	0.35
v/c Ratio	0.25	0.19		0.02	0.20	0.19		0.07			0.62	0.31
Control Delay	7.5	9.2		5.2	11.5	2.9		15.0			39.3	3.7
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	7.5	9.2		5.2	11.5	2.9		15.0			39.3	3.7
LOS	A	A		A	B	A		B			D	A
Approach Delay		8.7			8.7			15.0			19.3	
Approach LOS		A			A			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 11.4

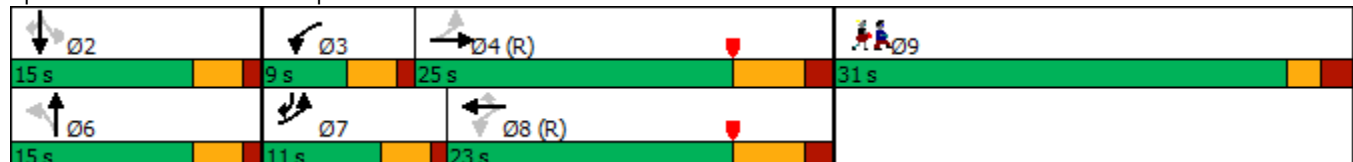
Intersection LOS: B

Intersection Capacity Utilization 47.7%

ICU Level of Service A

Analysis Period (min) 15












Splits and Phases: 236: Phillips Farm Rd/Charter Oak Mall & Silver Ln



Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	39%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	217	292	0	315	272	109
Future Volume (vph)	217	292	0	315	272	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370	370	0			0
Storage Lanes	1	1	0			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950					
Satd. Flow (prot)	1662	2617	0	3323	3323	1487
Flt Permitted	0.950					
Satd. Flow (perm)	1662	2617	0	3323	3323	1487
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		317				118
Link Speed (mph)	60			40	40	
Link Distance (ft)	663			202	1149	
Travel Time (s)	7.5			3.4	19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	236	317	0	342	296	118
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	317	0	342	296	118
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	1
Detector Template	Left	Right				Right
Leading Detector (ft)	20	20		26	26	20
Trailing Detector (ft)	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0
Detector 1 Size(ft)	20	20		6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)				20	20	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	Free
Protected Phases	4			6	2	
Permitted Phases		4				Free

Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		6	2	
Switch Phase						
Minimum Initial (s)	9.0	9.0		15.0	15.0	
Minimum Split (s)	13.2	13.2		19.8	19.8	
Total Split (s)	30.0	30.0		90.0	90.0	
Total Split (%)	25.0%	25.0%		75.0%	75.0%	
Maximum Green (s)	25.8	25.8		85.2	85.2	
Yellow Time (s)	3.0	3.0		4.3	4.3	
All-Red Time (s)	1.2	1.2		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.2	4.2		4.8	4.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5	1.5		2.0	2.0	
Recall Mode	None	None		C-Min	C-Min	
Act Effect Green (s)	20.8	20.8		90.2	90.2	120.0
Actuated g/C Ratio	0.17	0.17		0.75	0.75	1.00
v/c Ratio	0.82	0.44		0.14	0.12	0.08
Control Delay	69.2	6.2		4.8	4.8	0.1
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay	69.2	6.2		4.8	4.8	0.1
LOS	E	A		A	A	A
Approach Delay	33.1			4.8	3.4	
Approach LOS	C			A	A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 112.2 (94%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 16.3

Intersection LOS: B

Intersection Capacity Utilization 32.0%

ICU Level of Service A





















Analysis Period (min) 15

Splits and Phases: 257: Roberts St & I-84 EB Ramps



Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	521	27	70	550	4	33	11	98	5	5	5
Future Volume (vph)	13	521	27	70	550	4	33	11	98	5	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	0		170	0		150
Storage Lanes	1		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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00	0.98		1.00	0.98
Frt		0.993			0.999				0.850			0.850
Flt Protected	0.950			0.950				0.964			0.976	
Satd. Flow (prot)	1662	1735	0	1662	1747	0	0	1686	1487	0	1707	1487
Flt Permitted	0.437			0.280				0.774			0.830	
Satd. Flow (perm)	764	1735	0	490	1747	0	0	1351	1452	0	1450	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3							107			77
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		463			289			670			630	
Travel Time (s)		7.9			4.9			18.3			14.3	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		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)	14	566	29	76	598	4	36	12	107	5	5	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	595	0	76	602	0	0	48	107	0	10	5
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	8.0	0.0	0.0	8.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8			6			2	
Permitted Phases	4			8			6		6	2		2
Detector Phase	4	4		3	8		6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	15.0	15.0		5.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	20.0	13.0	13.0	13.0
Total Split (s)	60.0	60.0		18.0	60.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	47.2%	47.2%		14.2%	47.2%		19.7%	19.7%	19.7%	19.7%	19.7%	19.7%
Maximum Green (s)	55.0	55.0		15.0	55.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	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	0.0
Total Lost Time (s)	5.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	2.0		2.0	2.0	2.0	3.0	3.0	3.0
Recall Mode	Min	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	35.4	35.4		43.9	43.3		9.0	9.0	9.0	9.0	9.0	9.0
Actuated g/C Ratio	0.58	0.58		0.72	0.71		0.15	0.15	0.15	0.15	0.15	0.15
v/c Ratio	0.03	0.59		0.15	0.48		0.24	0.35	0.35	0.05	0.02	0.02
Control Delay	11.4	16.3		5.7	8.7		35.1	12.2	12.2	33.9	0.2	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	16.3		5.7	8.7		35.1	12.2	12.2	33.9	0.2	0.2
LOS	B	B		A	A		D	B	B	C	A	A
Approach Delay		16.2			8.4		19.3				22.7	
Approach LOS		B			A		B				C	

Intersection Summary

Area Type: Other

Cycle Length: 127

Actuated Cycle Length: 60.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 13.0

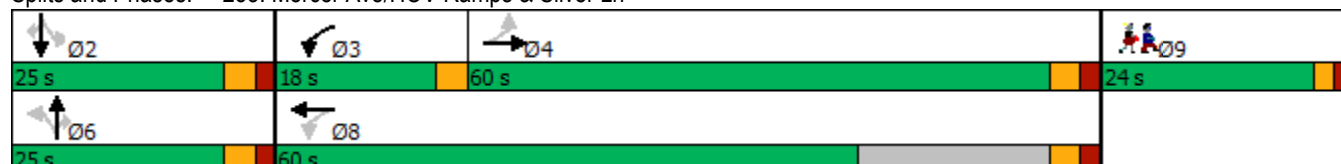
Intersection LOS: B

Intersection Capacity Utilization 63.3%

ICU Level of Service B

Analysis Period (min) 15


















Splits and Phases: 258: Mercer Ave/HOV Ramps & Silver Ln



Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	19%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	4
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	427	56	70	397	6	32	1	83	6	3	16
Future Volume (vph)	6	427	56	70	397	6	32	1	83	6	3	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98				0.98	
Frt		0.983			0.998			0.852			0.915	
Flt Protected		0.999			0.993		0.950				0.987	
Satd. Flow (prot)	0	3264	0	0	3293	0	1662	1490	0	0	1548	0
Flt Permitted		0.892			0.803		0.740				0.891	
Satd. Flow (perm)	0	2914	0	0	2663	0	1269	1490	0	0	1398	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		22			2			90				
Link Speed (mph)		40			40			20			20	
Link Distance (ft)		2556			394			450			463	
Travel Time (s)		43.6			6.7			15.3			15.8	
Confl. Peds. (#/hr)	1					1	7					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)	7	464	61	76	432	7	35	1	90	7	3	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	532	0	0	515	0	35	91	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	

Lane Group	Ø1	Ø2	Ø9
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln










01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1 2		5	2 5			6			6	
Permitted Phases	1 2			2			6			6		
Detector Phase	1 2	1 2		5	2 5		6	6		6	6	
Switch Phase												
Minimum Initial (s)				5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)				9.2			9.2	9.2		9.2	9.2	
Total Split (s)				9.2			12.6	12.6		12.6	12.6	
Total Split (%)				11.5%			15.8%	15.8%		15.8%	15.8%	
Maximum Green (s)				5.0			8.4	8.4		8.4	8.4	
Yellow Time (s)				3.0			3.0	3.0		3.0	3.0	
All-Red Time (s)				1.2			1.2	1.2		1.2	1.2	
Lost Time Adjust (s)							0.0	0.0			0.0	
Total Lost Time (s)							4.2	4.2			4.2	
Lead/Lag				Lead			Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0			3.0	3.0		3.0	3.0	
Recall Mode				Max			None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		53.8		23.3			7.2	7.2			7.2	
Actuated g/C Ratio		0.67		0.29			0.09	0.09			0.09	
v/c Ratio		0.27		0.63			0.31	0.42			0.21	
Control Delay		7.6		7.4			40.8	14.7			37.4	
Queue Delay		0.0		0.0			0.0	0.0			0.0	
Total Delay		7.6		7.4			40.8	14.7			37.4	
LOS		A		A			D	B			D	
Approach Delay		7.6		7.4				21.9			37.4	
Approach LOS		A		A				C			D	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 9.7
Intersection LOS: A
Intersection Capacity Utilization 44.7%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2391: Aldi/Silver Ln Plaza & Silver Ln

  Ø1	  Ø2 (R)	  Ø5	  Ø6	 Ø9
15.7 s	22.5 s	9.2 s	12.6 s	20 s

Lane Group	Ø1	Ø2	Ø9
Protected Phases	1	2	9
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	7.0
Minimum Split (s)	9.5	9.2	20.0
Total Split (s)	15.7	22.5	20.0
Total Split (%)	20%	28%	25%
Maximum Green (s)	12.2	18.3	16.0
Yellow Time (s)	3.0	3.0	2.0
All-Red Time (s)	0.5	1.2	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?			
Vehicle Extension (s)	2.0	3.0	2.0
Recall Mode	Max	C-Max	None
Walk Time (s)			7.0
Flash Dont Walk (s)			9.0
Pedestrian Calls (#/hr)			7
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø1	Ø5	Ø9
Lane Configurations		↕↕	↕↕		↕	↕			
Traffic Volume (vph)	5	534	475	14	15	10			
Future Volume (vph)	5	534	475	14	15	10			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00			
Ped Bike Factor		1.00	1.00						
Frt			0.996			0.850			
Flt Protected					0.950				
Satd. Flow (prot)	0	3323	3307	0	1662	1487			
Flt Permitted		0.955			0.950				
Satd. Flow (perm)	0	3174	3307	0	1662	1487			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)			3			11			
Link Speed (mph)		40	40		20				
Link Distance (ft)		394	1041		467				
Travel Time (s)		6.7	17.7		15.9				
Confl. Peds. (#/hr)	7			7					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	5	580	516	15	16	11			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	585	531	0	16	11			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Left	Left	Right	Left	Right			
Median Width(ft)		0	0		30				
Link Offset(ft)		0	0		0				
Crosswalk Width(ft)		16	16		16				
Two way Left Turn Lane									
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04			
Turning Speed (mph)	15			9	15	9			
Number of Detectors	1	2	2		1	1			
Detector Template	Left	Thru	Thru		Left	Right			
Leading Detector (ft)	20	100	100		20	20			
Trailing Detector (ft)	0	0	0		0	0			
Detector 1 Position(ft)	0	0	0		0	0			
Detector 1 Size(ft)	20	6	6		20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0			
Detector 2 Position(ft)		94	94						
Detector 2 Size(ft)		6	6						
Detector 2 Type		Cl+Ex	Cl+Ex						
Detector 2 Channel									
Detector 2 Extend (s)		0.0	0.0						
Turn Type	D.P+P	NA	NA		Prot	Perm			
Protected Phases	1 5	1 2 5	2		6		1	5	9
Permitted Phases	2					6			
Detector Phase	1 5	1 2 5	2		6	6			

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø1	Ø5	Ø9
Switch Phase									
Minimum Initial (s)			5.0		5.0	5.0	6.0	5.0	7.0
Minimum Split (s)			9.2		9.2	9.2	9.5	9.2	20.0
Total Split (s)			22.5		12.6	12.6	15.7	9.2	20.0
Total Split (%)			28.1%		15.8%	15.8%	20%	12%	25%
Maximum Green (s)			18.3		8.4	8.4	12.2	5.0	16.0
Yellow Time (s)			3.0		3.0	3.0	3.0	3.0	2.0
All-Red Time (s)			1.2		1.2	1.2	0.5	1.2	2.0
Lost Time Adjust (s)			0.0		0.0	0.0			
Total Lost Time (s)			4.2		4.2	4.2			
Lead/Lag			Lag		Lag	Lag	Lead	Lead	
Lead-Lag Optimize?									
Vehicle Extension (s)			3.0		3.0	3.0	2.0	3.0	2.0
Recall Mode			C-Max		None	None	Max	Max	None
Walk Time (s)									7.0
Flash Dont Walk (s)									9.0
Pedestrian Calls (#/hr)									7
Act Effect Green (s)		56.7	18.3		7.2	7.2			
Actuated g/C Ratio		0.71	0.23		0.09	0.09			
v/c Ratio		0.25	0.70		0.11	0.08			
Control Delay		1.9	27.3		34.3	19.1			
Queue Delay		0.0	0.0		0.0	0.0			
Total Delay		1.9	27.3		34.3	19.1			
LOS		A	C		C	B			
Approach Delay		1.9	27.3		28.1				
Approach LOS		A	C		C				

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 14.3

Intersection LOS: B

Intersection Capacity Utilization 29.3%

ICU Level of Service A










Analysis Period (min) 15

Splits and Phases: 2392: Silver Ln & Silver Ln Plaza

#239#2392 	#239#2392 	#239#2392 	#239#2392 	#239#2392
15.7 s	22.5 s	9.2 s	12.6 s	20 s











Lanes, Volumes, Timings
101: CT 15 On-Ramp & Silver Ln

01/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	452	9	278	420	0	0
Future Volume (vph)	452	9	278	420	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	370		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997					
Flt Protected			0.950			
Satd. Flow (prot)	1744	0	1662	1749	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	1744	0	1662	1749	0	0
Link Speed (mph)	40			40	50	
Link Distance (ft)	781			759	593	
Travel Time (s)	13.3			12.9	8.1	
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	491	10	302	457	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	501	0	302	457	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	59.2%			ICU Level of Service B		
Analysis Period (min)	15					










Lanes, Volumes, Timings
102: CT 15 Off-Ramp & Silver Ln

01/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations					 	
Traffic Volume (vph)	446	0	0	706	1	246
Future Volume (vph)	446	0	0	706	1	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.866	
Flt Protected						
Satd. Flow (prot)	1749	0	0	1749	1515	0
Flt Permitted						
Satd. Flow (perm)	1749	0	0	1749	1515	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	759			463	1125	
Travel Time (s)	12.9			7.9	25.6	
Confl. Peds. (#/hr)					1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	485	0	0	767	1	267
Shared Lane Traffic (%)						
Lane Group Flow (vph)	485	0	0	767	268	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	11	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	59.2%			ICU Level of Service B		
Analysis Period (min)	15					







Lanes, Volumes, Timings
103: Roberts St & I-84 EB On-Ramp

01/13/2020

						
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	371	201	0	704	0	0
Future Volume (vph)	371	201	0	704	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		1	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	1.00	0.86	1.00	1.00
Frt	0.989	0.850				
Flt Protected						
Satd. Flow (prot)	3149	1353	0	6017	0	0
Flt Permitted						
Satd. Flow (perm)	3149	1353	0	6017	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	268			202	622	
Travel Time (s)	4.6			3.4	14.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	403	218	0	765	0	0
Shared Lane Traffic (%)		14%				
Lane Group Flow (vph)	434	187	0	765	0	0
Enter Blocked Intersection	Yes	No	No	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		30	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	15.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings
104: P&W Connector & E Hartford Blvd N

























01/13/2020

						
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑↑↑	↑↑	↗		
Traffic Volume (vph)	0	1182	100	39	0	0
Future Volume (vph)	0	1182	100	39	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	0	4775	3323	1487	0	0
Flt Permitted						
Satd. Flow (perm)	0	4775	3323	1487	0	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		753	253		432	
Travel Time (s)		14.7	4.9		9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1285	109	42	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1285	109	42	0	0
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(ft)		24	11		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.2%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	389	74	45	338	133	92	214	49	220	231	253
Future Volume (vph)	225	389	74	45	338	133	92	214	49	220	231	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		140	160		160	150		200	150		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	0.99								
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3224	3323	1487	1662	3323	1487	3224	4775	1487	3224	3323	1487
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3224	3323	1462	1649	3323	1487	3224	4775	1487	3224	3323	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			227			223			280			275
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		385			2540			253			268	
Travel Time (s)		6.6			43.3			4.9			4.6	
Confl. Peds. (#/hr)			3	3								
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)	245	423	80	49	367	145	100	233	53	239	251	275
Shared Lane Traffic (%)												
Lane Group Flow (vph)	245	423	80	49	367	145	100	233	53	239	251	275
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(ft)		22			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

No Build Conditions Sat Peak
NCM













Synchro 10 Report
Page 5

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	10.5	21.3	21.3	11.0	21.0	21.0	11.0	21.0	21.0	11.0	21.0	21.0
Total Split (s)	20.0	30.0	30.0	14.0	24.0	24.0	12.0	24.0	24.0	19.0	31.0	31.0
Total Split (%)	16.7%	25.0%	25.0%	11.7%	20.0%	20.0%	10.0%	20.0%	20.0%	15.8%	25.8%	25.8%
Maximum Green (s)	14.5	23.7	23.7	8.0	18.0	18.0	6.0	18.0	18.0	13.0	25.0	25.0
Yellow Time (s)	3.0	4.3	4.3	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	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	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.3	6.3	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	4.0	4.0	2.0	4.0	4.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	12.7	24.4	24.4	7.6	18.0	18.0	8.2	52.6	52.6	13.2	57.6	57.6
Actuated g/C Ratio	0.11	0.20	0.20	0.06	0.15	0.15	0.07	0.44	0.44	0.11	0.48	0.48
v/c Ratio	0.72	0.63	0.17	0.47	0.74	0.35	0.46	0.11	0.07	0.68	0.16	0.32
Control Delay	64.0	48.7	0.8	68.6	58.5	2.8	60.0	21.2	0.2	65.8	17.2	2.5
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	64.0	48.7	0.8	68.6	58.5	2.8	60.0	21.2	0.2	65.8	17.2	2.5
LOS	E	D	A	E	E	A	E	C	A	E	B	A
Approach Delay		48.6			45.0			28.4			27.1	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 44 (37%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 37.9

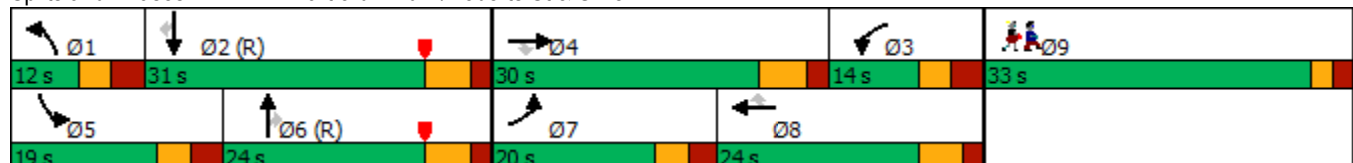
Intersection LOS: D

Intersection Capacity Utilization 57.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 222: E Hartford Blvd N/Roberts St & Silver Ln




















Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	28%
Maximum Green (s)	29.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	35.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	571	7	2	530	74	5	0	2	67	0	39
Future Volume (vph)	28	571	7	2	530	74	5	0	2	67	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00				0.99	
Frt		0.998			0.982			0.850			0.951	
Flt Protected		0.998					0.950				0.969	
Satd. Flow (prot)	0	3310	0	0	3253	0	1662	1487	0	0	1602	0
Flt Permitted		0.909			0.954		0.763				0.806	
Satd. Flow (perm)	0	3015	0	0	3103	0	1329	1487	0	0	1332	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			20			518			73	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		2540			2556			982			825	
Travel Time (s)		43.3			43.6			22.3			18.8	
Confl. Peds. (#/hr)	7					7	3					3
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)	30	621	8	2	576	80	5	0	2	73	0	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	659	0	0	658	0	5	2	0	0	115	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left	Thru	
Leading Detector (ft)	20	266		20	266		20	100		20	100	
Trailing Detector (ft)	0	130		0	130		0	0		0	0	
Detector 1 Position(ft)	0	130		0	130		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	8.0		0.0	0.0	
Detector 2 Position(ft)		260			260			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	

Lanes, Volumes, Timings
223: Rentschler Field/Simmons Rd & Silver Ln













01/13/2020

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	




Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		10.0	10.0		9.0	9.0	
Minimum Split (s)	23.3	23.3		23.3	23.3		20.0	20.0		13.0	13.0	
Total Split (s)	45.0	45.0		45.0	45.0		20.0	20.0		20.0	20.0	
Total Split (%)	47.9%	47.9%		47.9%	47.9%		21.3%	21.3%		21.3%	21.3%	
Maximum Green (s)	39.7	39.7		39.7	39.7		15.0	15.0		16.0	16.0	
Yellow Time (s)	4.3	4.3		4.3	4.3		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.3			5.3		5.0	5.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		27.1			27.1		10.9	10.9			11.5	
Actuated g/C Ratio		0.57			0.57		0.23	0.23			0.24	
v/c Ratio		0.38			0.37		0.02	0.00			0.31	
Control Delay		11.1			10.6		20.6	0.0			12.2	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		11.1			10.6		20.6	0.0			12.2	
LOS		B			B		C	A			B	
Approach Delay		11.1			10.6			14.7			12.2	
Approach LOS		B			B			B			B	
Intersection Summary												
Area Type:	Other											
Cycle Length: 94												
Actuated Cycle Length: 47.6												
Natural Cycle: 75												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.38												
Intersection Signal Delay: 11.0						Intersection LOS: B						
Intersection Capacity Utilization 57.4%						ICU Level of Service B						
Analysis Period (min) 15												





















Splits and Phases: 223: Rentschler Field/Simmons Rd & Silver Ln

 Ø2	 Ø4	 Ø9
20 s	45 s	29 s
 Ø6	 Ø8	
20 s	45 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	31%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
224: Forbes St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	318	194	56	297	80	151	119	67	77	123	60
Future Volume (vph)	75	318	194	56	297	80	151	119	67	77	123	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370		0	190		0	350		0	330		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00	0.99		1.00	0.99	
Frt		0.943			0.968			0.946			0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3106	0	1662	3201	0	1662	1646	0	1662	1655	0
Flt Permitted	0.411			0.402			0.424			0.631		
Satd. Flow (perm)	718	3106	0	702	3201	0	741	1646	0	1102	1655	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		769			1106			1073			978	
Travel Time (s)		13.1			18.9			24.4			22.2	
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
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)	82	346	211	61	323	87	164	129	73	84	134	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	557	0	61	410	0	164	202	0	84	199	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left	Thru		Left	Thru	
Leading Detector (ft)	20	326		20	326		20	100		20	100	
Trailing Detector (ft)	0	160		0	160		0	0		0	0	
Detector 1 Position(ft)	0	160		0	160		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		320			320			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	

No Build Conditions Sat Peak
NCM













Synchro 10 Report
Page 13

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings

224: Forbes St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		
Detector Phase	7	4		3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	10.0		3.0	10.0	
Minimum Split (s)	7.0	20.5		7.0	21.3		7.0	20.0		7.0	20.0	
Total Split (s)	10.0	38.0		8.0	36.0		11.0	28.0		8.0	25.0	
Total Split (%)	8.7%	33.0%		7.0%	31.3%		9.6%	24.3%		7.0%	21.7%	
Maximum Green (s)	6.0	32.5		4.0	30.6		7.0	23.1		4.0	20.1	
Yellow Time (s)	3.0	4.4		3.0	4.3		3.0	3.6		3.0	3.6	
All-Red Time (s)	1.0	1.1		1.0	1.1		1.0	1.3		1.0	1.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.5		4.0	5.4		4.0	4.9		4.0	4.9	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	26.9	21.9		23.2	18.5		25.7	19.1		19.1	13.7	
Actuated g/C Ratio	0.40	0.33		0.35	0.28		0.38	0.28		0.28	0.20	
v/c Ratio	0.22	0.55		0.20	0.47		0.43	0.43		0.24	0.59	
Control Delay	17.1	24.2		17.9	25.1		23.8	29.3		22.2	36.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.1	24.2		17.9	25.1		23.8	29.3		22.2	36.7	
LOS	B	C		B	C		C	C		C	D	
Approach Delay		23.3			24.2			26.8			32.4	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 67.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 25.7

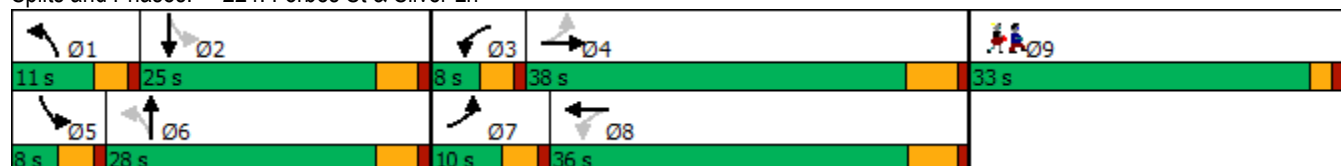
Intersection LOS: C

Intersection Capacity Utilization 52.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 224: Forbes St & Silver Ln























Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	29%
Maximum Green (s)	29.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	8
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	469	11	14	358	221	5	7	18	199	3	258
Future Volume (vph)	220	469	11	14	358	221	5	7	18	199	3	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0	180		150	0		0	0		110
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850		0.918				0.850
Flt Protected	0.950			0.950				0.992			0.953	
Satd. Flow (prot)	1662	3314	0	1662	3323	1487	0	1593	0	0	1667	1487
Flt Permitted	0.452			0.459				0.964			0.705	
Satd. Flow (perm)	791	3314	0	803	3323	1487	0	1548	0	0	1233	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				240		20				280
Link Speed (mph)		40			40			20			30	
Link Distance (ft)		1041			769			594			549	
Travel Time (s)		17.7			13.1			20.3			12.5	
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)	239	510	12	15	389	240	5	8	20	216	3	280
Shared Lane Traffic (%)												
Lane Group Flow (vph)	239	522	0	15	389	240	0	33	0	0	219	280
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4		3	8			6			2	7
Permitted Phases	4			8		8	6			2		2

No Build Conditions Sat Peak
NCM

Synchro 10 Report
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Lanes, Volumes, Timings
236: Phillips Farm Rd/Charter Oak Mall & Silver Ln













01/13/2020

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	








Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	6	6		2	2	7
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	21.0		9.0	21.0	21.0	9.2	9.2		9.2	9.2	9.0
Total Split (s)	11.0	25.0		9.0	23.0	23.0	15.0	15.0		15.0	15.0	11.0
Total Split (%)	13.8%	31.3%		11.3%	28.8%	28.8%	18.8%	18.8%		18.8%	18.8%	13.8%
Maximum Green (s)	7.0	19.0		5.0	17.0	17.0	10.8	10.8		10.8	10.8	7.0
Yellow Time (s)	3.0	4.3		3.0	4.3	4.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.7		1.0	1.7	1.7	1.2	1.2		1.2	1.2	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0		4.2			4.2	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	1.5		2.0	1.5	1.5	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	46.0	42.1		36.5	29.5	29.5		25.8			25.8	40.5
Actuated g/C Ratio	0.58	0.53		0.46	0.37	0.37		0.32			0.32	0.51
v/c Ratio	0.42	0.30		0.04	0.32	0.34		0.06			0.55	0.31
Control Delay	12.0	13.2		7.6	18.9	4.2		12.4			29.8	2.4
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	12.0	13.2		7.6	18.9	4.2		12.4			29.8	2.4
LOS	B	B		A	B	A		B			C	A
Approach Delay		12.8			13.1			12.4			14.4	
Approach LOS		B			B			B			B	
Intersection Summary												
Area Type:	Other											
Cycle Length: 80												
Actuated Cycle Length: 80												
Offset: 74 (93%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.55												
Intersection Signal Delay: 13.3												
Intersection LOS: B												
Intersection Capacity Utilization 54.4%												
ICU Level of Service A												
Analysis Period (min) 15												












Splits and Phases: 236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

 Ø2	 Ø3	 Ø4 (R)	 Ø9
15 s	9 s	25 s	31 s
 Ø6	 Ø7	 Ø8 (R)	
15 s	11 s	23 s	

Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	39%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	217	342	0	371	362	109
Future Volume (vph)	217	342	0	371	362	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370	370	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	0.95
Frt		0.850			0.965	
Flt Protected	0.950					
Satd. Flow (prot)	1662	2617	0	3323	3207	0
Flt Permitted	0.950					
Satd. Flow (perm)	1662	2617	0	3323	3207	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		372			44	
Link Speed (mph)	60			40	40	
Link Distance (ft)	663			202	1149	
Travel Time (s)	7.5			3.4	19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	236	372	0	403	393	118
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	372	0	403	511	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right				
Leading Detector (ft)	20	20		26	26	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				20	20	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			6	2	
Permitted Phases		4				

No Build Conditions Sat Peak
NCM

Synchro 10 Report
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Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020

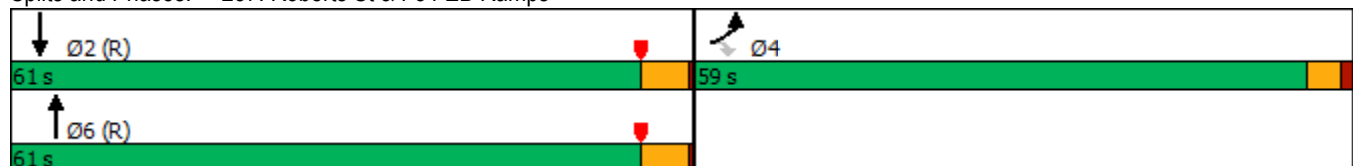


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		6	2	
Switch Phase						
Minimum Initial (s)	9.0	9.0		15.0	15.0	
Minimum Split (s)	13.2	13.2		19.8	19.8	
Total Split (s)	59.0	59.0		61.0	61.0	
Total Split (%)	49.2%	49.2%		50.8%	50.8%	
Maximum Green (s)	54.8	54.8		56.2	56.2	
Yellow Time (s)	3.0	3.0		4.3	4.3	
All-Red Time (s)	1.2	1.2		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.2	4.2		4.8	4.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5	1.5		2.0	2.0	
Recall Mode	None	None		C-Min	C-Min	
Act Effect Green (s)	21.8	21.8		89.2	89.2	
Actuated g/C Ratio	0.18	0.18		0.74	0.74	
v/c Ratio	0.78	0.48		0.16	0.21	
Control Delay	64.1	5.8		1.2	5.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	64.1	5.8		1.2	5.1	
LOS	E	A		A	A	
Approach Delay	28.4			1.2	5.1	
Approach LOS	C			A	A	

Intersection Summary





















Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 13.4
Intersection LOS: B
Intersection Capacity Utilization 33.0%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 257: Roberts St & I-84 EB Ramps



Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	648	29	76	665	5	33	12	104	6	5	6
Future Volume (vph)	17	648	29	76	665	5	33	12	104	6	5	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	0		170	0		150
Storage Lanes	1		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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00	0.98		1.00	0.98
Frt		0.993			0.999				0.850			0.850
Flt Protected	0.950			0.950				0.965			0.972	
Satd. Flow (prot)	1662	1735	0	1662	1747	0	0	1688	1487	0	1700	1487
Flt Permitted	0.342			0.202				0.776			0.839	
Satd. Flow (perm)	598	1735	0	353	1747	0	0	1353	1451	0	1464	1451
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			1				113			77
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		463			289			670			630	
Travel Time (s)		7.9			4.9			18.3			14.3	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		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)	18	704	32	83	723	5	36	13	113	7	5	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	736	0	83	728	0	0	49	113	0	12	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	8.0	0.0	0.0	8.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm













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Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8			6			2	
Permitted Phases	4			8			6		6	2		2
Detector Phase	4	4		3	8		6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	15.0	15.0		5.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	20.0	13.0	13.0	13.0
Total Split (s)	75.0	75.0		8.0	83.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	59.1%	59.1%		6.3%	65.4%		15.7%	15.7%	15.7%	15.7%	15.7%	15.7%
Maximum Green (s)	70.0	70.0		5.0	78.0		15.0	15.0	15.0	15.0	15.0	15.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	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	0.0
Total Lost Time (s)	5.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	2.0		2.0	2.0	2.0	3.0	3.0	3.0
Recall Mode	Min	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	40.0	40.0		49.1	46.8		9.0	9.0	9.0	9.0	9.0	9.0
Actuated g/C Ratio	0.57	0.57		0.70	0.67		0.13	0.13	0.13	0.13	0.13	0.13
v/c Ratio	0.05	0.74		0.24	0.62		0.28	0.40	0.40	0.06	0.06	0.03
Control Delay	9.6	18.3		6.3	10.7		39.8	13.5	13.5	37.7	37.7	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	18.3		6.3	10.7		39.8	13.5	13.5	37.7	37.7	0.2
LOS	A	B		A	B		D	B	B	D	D	A
Approach Delay		18.1			10.2		21.5				23.9	
Approach LOS		B			B		C				C	
Intersection Summary												
Area Type:	Other											
Cycle Length: 127												
Actuated Cycle Length: 69.7												
Natural Cycle: 90												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.74												
Intersection Signal Delay: 14.8							Intersection LOS: B					
Intersection Capacity Utilization 69.4%							ICU Level of Service C					
Analysis Period (min) 15												


















Splits and Phases: 258: Mercer Ave/HOV Ramps & Silver Ln

 Ø2	 Ø3	 Ø4	 Ø9
20 s	8 s	75 s	24 s
 Ø6	 Ø8		
20 s	83 s		

Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	19%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	4
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	539	81	70	506	13	50	3	83	11	6	47
Future Volume (vph)	20	539	81	70	506	13	50	3	83	11	6	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98				0.98	
Frt		0.981			0.997			0.855			0.902	
Flt Protected		0.998			0.994		0.950				0.992	
Satd. Flow (prot)	0	3254	0	0	3292	0	1662	1496	0	0	1529	0
Flt Permitted		0.754			0.792		0.788				0.923	
Satd. Flow (perm)	0	2458	0	0	2623	0	1356	1496	0	0	1423	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		25			3			90				
Link Speed (mph)		40			40			20			20	
Link Distance (ft)		2556			394			450			463	
Travel Time (s)		43.6			6.7			15.3			15.8	
Confl. Peds. (#/hr)	1					1	7					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)	22	586	88	76	550	14	54	3	90	12	7	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	696	0	0	640	0	54	93	0	0	70	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	













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Lane Group	Ø1	Ø2	Ø9
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1 2		5	2 5			6			6	
Permitted Phases	1 2			2			6			6		
Detector Phase	1 2	1 2		5	2 5		6	6		6	6	
Switch Phase												
Minimum Initial (s)				5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)				9.2			9.2	9.2		9.2	9.2	
Total Split (s)				9.2			12.6	12.6		12.6	12.6	
Total Split (%)				11.5%			15.8%	15.8%		15.8%	15.8%	
Maximum Green (s)				5.0			8.4	8.4		8.4	8.4	
Yellow Time (s)				3.0			3.0	3.0		3.0	3.0	
All-Red Time (s)				1.2			1.2	1.2		1.2	1.2	
Lost Time Adjust (s)							0.0	0.0			0.0	
Total Lost Time (s)							4.2	4.2			4.2	
Lead/Lag				Lead			Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0			3.0	3.0		3.0	3.0	
Recall Mode				Max			None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		53.4		23.3			7.7	7.7			7.7	
Actuated g/C Ratio		0.67		0.29			0.10	0.10			0.10	
v/c Ratio		0.42		0.79			0.42	0.42			0.51	
Control Delay		9.4		14.5			43.9	14.7			48.0	
Queue Delay		0.0		0.0			0.0	0.0			0.0	
Total Delay		9.4		14.5			43.9	14.7			48.0	
LOS		A		B			D	B			D	
Approach Delay		9.4		14.5				25.4			48.0	
Approach LOS		A		B				C			D	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 14.7










Intersection LOS: B

Intersection Capacity Utilization 55.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2391: Aldi/Silver Ln Plaza & Silver Ln

  Ø1	  Ø2 (R)	  Ø5	  Ø6	 Ø9
15.7 s	22.5 s	9.2 s	12.6 s	20 s

Lane Group	Ø1	Ø2	Ø9
Protected Phases	1	2	9
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	7.0
Minimum Split (s)	9.5	9.2	20.0
Total Split (s)	15.7	22.5	20.0
Total Split (%)	20%	28%	25%
Maximum Green (s)	12.2	18.3	16.0
Yellow Time (s)	3.0	3.0	2.0
All-Red Time (s)	0.5	1.2	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?			
Vehicle Extension (s)	2.0	3.0	2.0
Recall Mode	Max	C-Max	None
Walk Time (s)			7.0
Flash Dont Walk (s)			9.0
Pedestrian Calls (#/hr)			7
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø1	Ø5	Ø9
Lane Configurations		↕↕	↕↕		↕	↕			
Traffic Volume (vph)	9	676	566	36	45	19			
Future Volume (vph)	9	676	566	36	45	19			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00			
Ped Bike Factor		1.00	1.00						
Frt			0.991			0.850			
Flt Protected		0.999			0.950				
Satd. Flow (prot)	0	3320	3287	0	1662	1487			
Flt Permitted		0.955			0.950				
Satd. Flow (perm)	0	3174	3287	0	1662	1487			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)			7			21			
Link Speed (mph)		40	40		20				
Link Distance (ft)		394	1041		467				
Travel Time (s)		6.7	17.7		15.9				
Confl. Peds. (#/hr)	7			7					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	10	735	615	39	49	21			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	745	654	0	49	21			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Left	Left	Right	Left	Right			
Median Width(ft)		0	0		30				
Link Offset(ft)		0	0		0				
Crosswalk Width(ft)		16	16		16				
Two way Left Turn Lane									
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04			
Turning Speed (mph)	15			9	15	9			
Number of Detectors	1	2	2		1	1			
Detector Template	Left	Thru	Thru		Left	Right			
Leading Detector (ft)	20	100	100		20	20			
Trailing Detector (ft)	0	0	0		0	0			
Detector 1 Position(ft)	0	0	0		0	0			
Detector 1 Size(ft)	20	6	6		20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0			
Detector 2 Position(ft)		94	94						
Detector 2 Size(ft)		6	6						
Detector 2 Type		Cl+Ex	Cl+Ex						
Detector 2 Channel									
Detector 2 Extend (s)		0.0	0.0						
Turn Type	D.P+P	NA	NA		Prot	Perm			
Protected Phases	1 5	1 2 5	2		6		1	5	9
Permitted Phases	2					6			
Detector Phase	1 5	1 2 5	2		6	6			

No Build Conditions Sat Peak
NCM

Synchro 10 Report
Page 31

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø1	Ø5	Ø9
Switch Phase									
Minimum Initial (s)			5.0		5.0	5.0	6.0	5.0	7.0
Minimum Split (s)			9.2		9.2	9.2	9.5	9.2	20.0
Total Split (s)			22.5		12.6	12.6	15.7	9.2	20.0
Total Split (%)			28.1%		15.8%	15.8%	20%	12%	25%
Maximum Green (s)			18.3		8.4	8.4	12.2	5.0	16.0
Yellow Time (s)			3.0		3.0	3.0	3.0	3.0	2.0
All-Red Time (s)			1.2		1.2	1.2	0.5	1.2	2.0
Lost Time Adjust (s)			0.0		0.0	0.0			
Total Lost Time (s)			4.2		4.2	4.2			
Lead/Lag			Lag		Lag	Lag	Lead	Lead	
Lead-Lag Optimize?									
Vehicle Extension (s)			3.0		3.0	3.0	2.0	3.0	2.0
Recall Mode			C-Max		None	None	Max	Max	None
Walk Time (s)									7.0
Flash Dont Walk (s)									9.0
Pedestrian Calls (#/hr)									7
Act Effect Green (s)		56.3	18.3		7.7	7.7			
Actuated g/C Ratio		0.70	0.23		0.10	0.10			
v/c Ratio		0.32	0.86		0.31	0.13			
Control Delay		1.8	33.1		38.7	16.3			
Queue Delay		0.0	0.0		0.0	0.0			
Total Delay		1.8	33.1		38.7	16.3			
LOS		A	C		D	B			
Approach Delay		1.8	33.1		32.0				
Approach LOS		A	C		C				

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 17.2

Intersection LOS: B

Intersection Capacity Utilization 36.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2392: Silver Ln & Silver Ln Plaza

#239#2392 	#239#2392 	#239#2392 	#239#2392 	#239#2392
15.7 s	22.5 s	9.2 s	12.6 s	20 s










Lanes, Volumes, Timings
101: CT 15 On-Ramp & Silver Ln

01/13/2020

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗		↘	↗		
Traffic Volume (vph)	479	10	281	432	0	0
Future Volume (vph)	479	10	281	432	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	370		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997					
Flt Protected			0.950			
Satd. Flow (prot)	1744	0	1662	1749	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	1744	0	1662	1749	0	0
Link Speed (mph)	40			40	50	
Link Distance (ft)	781			759	593	
Travel Time (s)	13.3			12.9	8.1	
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	521	11	305	470	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	532	0	305	470	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	60.7%			ICU Level of Service B		
Analysis Period (min)	15					










Lanes, Volumes, Timings
102: CT 15 Off-Ramp & Silver Ln

01/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	475	0	0	722	1	256
Future Volume (vph)	475	0	0	722	1	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected						
Satd. Flow (prot)	1749	0	0	1749	1513	0
Flt Permitted						
Satd. Flow (perm)	1749	0	0	1749	1513	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	759			463	1125	
Travel Time (s)	12.9			7.9	25.6	
Confl. Peds. (#/hr)					1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	516	0	0	785	1	278
Shared Lane Traffic (%)						
Lane Group Flow (vph)	516	0	0	785	279	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	11	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	60.7%			ICU Level of Service B		
Analysis Period (min)	15					







Lanes, Volumes, Timings
103: Roberts St & I-84 EB On-Ramp

01/13/2020

						
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	374	238	0	749	0	0
Future Volume (vph)	374	238	0	749	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		1	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	1.00	0.86	1.00	1.00
Frt	0.982	0.850				
Flt Protected						
Satd. Flow (prot)	3126	1353	0	6017	0	0
Flt Permitted						
Satd. Flow (perm)	3126	1353	0	6017	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	268			202	622	
Travel Time (s)	4.6			3.4	14.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	407	259	0	814	0	0
Shared Lane Traffic (%)		22%				
Lane Group Flow (vph)	464	202	0	814	0	0
Enter Blocked Intersection	Yes	No	No	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		30	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	16.2%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings
104: P&W Connector & E Hartford Blvd N

























01/13/2020

						
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑↑↑	↑↑	↗		
Traffic Volume (vph)	0	1182	100	39	0	0
Future Volume (vph)	0	1182	100	39	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	0	4775	3323	1487	0	0
Flt Permitted						
Satd. Flow (perm)	0	4775	3323	1487	0	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		753	253		432	
Travel Time (s)		14.7	4.9		9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1285	109	42	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1285	109	42	0	0
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(ft)		24	11		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.2%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	412	74	45	347	150	92	219	49	249	233	267
Future Volume (vph)	243	412	74	45	347	150	92	219	49	249	233	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		140	160		160	150		200	150		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	0.99								
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3224	3323	1487	1662	3323	1487	3224	4775	1487	3224	3323	1487
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3224	3323	1463	1648	3323	1487	3224	4775	1487	3224	3323	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			227			223			280			290
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		385			2540			253			268	
Travel Time (s)		6.6			43.3			4.9			4.6	
Confl. Peds. (#/hr)			3	3								
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)	264	448	80	49	377	163	100	238	53	271	253	290
Shared Lane Traffic (%)												
Lane Group Flow (vph)	264	448	80	49	377	163	100	238	53	271	253	290
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(ft)		22			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	10.5	21.3	21.3	11.0	21.0	21.0	11.0	21.0	21.0	11.0	21.0	21.0
Total Split (s)	20.0	31.0	31.0	13.0	24.0	24.0	13.0	23.0	23.0	20.0	30.0	30.0
Total Split (%)	16.7%	25.8%	25.8%	10.8%	20.0%	20.0%	10.8%	19.2%	19.2%	16.7%	25.0%	25.0%
Maximum Green (s)	14.5	24.7	24.7	7.0	18.0	18.0	7.0	17.0	17.0	14.0	24.0	24.0
Yellow Time (s)	3.0	4.3	4.3	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	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	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.3	6.3	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	4.0	4.0	2.0	4.0	4.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	13.1	25.4	25.4	7.1	18.0	18.0	8.1	51.0	51.0	14.4	57.3	57.3
Actuated g/C Ratio	0.11	0.21	0.21	0.06	0.15	0.15	0.07	0.42	0.42	0.12	0.48	0.48
v/c Ratio	0.75	0.64	0.16	0.51	0.76	0.40	0.46	0.12	0.07	0.70	0.16	0.34
Control Delay	65.6	48.2	0.7	72.7	59.6	4.5	60.3	22.1	0.2	68.0	17.1	2.5
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	65.6	48.2	0.7	72.7	59.6	4.5	60.3	22.1	0.2	68.0	17.1	2.5
LOS	E	D	A	E	E	A	E	C	A	E	B	A
Approach Delay		49.2			45.4			28.9			28.8	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 91 (76%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 38.9

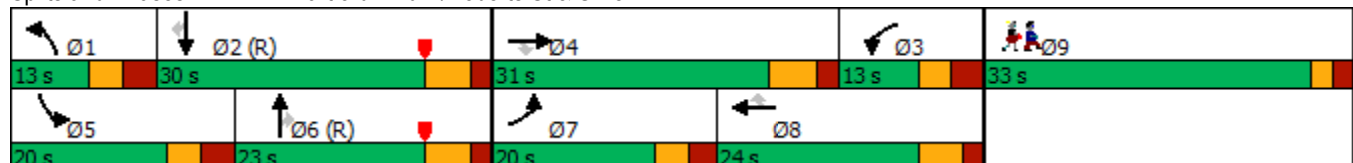
Intersection LOS: D

Intersection Capacity Utilization 58.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 222: E Hartford Blvd N/Roberts St & Silver Ln




















Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	28%
Maximum Green (s)	29.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	35.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	628	7	3	558	76	5	0	2	72	0	39
Future Volume (vph)	28	628	7	3	558	76	5	0	2	72	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		1.00				0.99	
Frt		0.998			0.982			0.850			0.953	
Flt Protected		0.998					0.950				0.969	
Satd. Flow (prot)	0	3310	0	0	3253	0	1662	1487	0	0	1606	0
Flt Permitted		0.911			0.953		0.753				0.803	
Satd. Flow (perm)	0	3021	0	0	3100	0	1312	1487	0	0	1331	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			20			501			73	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		2540			2556			982			825	
Travel Time (s)		43.3			43.6			22.3			18.8	
Confl. Peds. (#/hr)	7					7	3					3
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)	30	683	8	3	607	83	5	0	2	78	0	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	721	0	0	693	0	5	2	0	0	120	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left	Thru	
Leading Detector (ft)	20	266		20	266		20	100		20	100	
Trailing Detector (ft)	0	130		0	130		0	0		0	0	
Detector 1 Position(ft)	0	130		0	130		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	8.0		0.0	0.0	
Detector 2 Position(ft)		260			260			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	

Lanes, Volumes, Timings
223: Rentschler Field/Simmons Rd & Silver Ln













01/13/2020

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	




Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		10.0	10.0		9.0	9.0	
Minimum Split (s)	23.3	23.3		23.3	23.3		20.0	20.0		13.0	13.0	
Total Split (s)	45.0	45.0		45.0	45.0		20.0	20.0		20.0	20.0	
Total Split (%)	47.9%	47.9%		47.9%	47.9%		21.3%	21.3%		21.3%	21.3%	
Maximum Green (s)	39.7	39.7		39.7	39.7		15.0	15.0		16.0	16.0	
Yellow Time (s)	4.3	4.3		4.3	4.3		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.3			5.3		5.0	5.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		27.4			27.4		11.2	11.2			11.7	
Actuated g/C Ratio		0.57			0.57		0.23	0.23			0.24	
v/c Ratio		0.42			0.39		0.02	0.00			0.32	
Control Delay		11.3			10.7		21.2	0.0			12.8	
Queue Delay		0.0			0.0		0.0	0.0			0.0	
Total Delay		11.3			10.7		21.2	0.0			12.8	
LOS		B			B		C	A			B	
Approach Delay		11.3			10.7			15.1			12.8	
Approach LOS		B			B			B			B	
Intersection Summary												
Area Type:	Other											
Cycle Length: 94												
Actuated Cycle Length: 48.1												
Natural Cycle: 75												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.42												
Intersection Signal Delay: 11.2				Intersection LOS: B								
Intersection Capacity Utilization 59.1%				ICU Level of Service B								
Analysis Period (min) 15												





















Splits and Phases: 223: Rentschler Field/Simmons Rd & Silver Ln

 Ø2	 Ø4	 Ø9
20 s	45 s	29 s
 Ø6	 Ø8	
20 s	45 s	

Lane Group	Ø9
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	29.0
Total Split (s)	29.0
Total Split (%)	31%
Maximum Green (s)	25.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
224: Forbes St & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	336	208	56	308	80	163	119	67	77	123	63
Future Volume (vph)	77	336	208	56	308	80	163	119	67	77	123	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370		0	190		0	350		0	330		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		1.00	1.00		1.00	0.99		1.00	0.99	
Frt		0.943			0.969			0.946			0.950	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1662	3106	0	1662	3205	0	1662	1646	0	1662	1653	0
Flt Permitted	0.401			0.372			0.420			0.631		
Satd. Flow (perm)	700	3106	0	650	3205	0	734	1646	0	1102	1653	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		769			1106			1073			978	
Travel Time (s)		13.1			18.9			24.4			22.2	
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
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)	84	365	226	61	335	87	177	129	73	84	134	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	591	0	61	422	0	177	202	0	84	202	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left	Thru		Left	Thru	
Leading Detector (ft)	20	326		20	326		20	100		20	100	
Trailing Detector (ft)	0	160		0	160		0	0		0	0	
Detector 1 Position(ft)	0	160		0	160		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		320			320			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
224: Forbes St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8			6			2		
Detector Phase	7	4		3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	15.0		3.0	15.0		3.0	10.0		3.0	10.0	
Minimum Split (s)	7.0	20.5		7.0	21.3		7.0	20.0		7.0	20.0	
Total Split (s)	10.0	38.0		8.0	36.0		11.0	28.0		8.0	25.0	
Total Split (%)	8.7%	33.0%		7.0%	31.3%		9.6%	24.3%		7.0%	21.7%	
Maximum Green (s)	6.0	32.5		4.0	30.6		7.0	23.1		4.0	20.1	
Yellow Time (s)	3.0	4.4		3.0	4.3		3.0	3.6		3.0	3.6	
All-Red Time (s)	1.0	1.1		1.0	1.1		1.0	1.3		1.0	1.3	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.5		4.0	5.4		4.0	4.9		4.0	4.9	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	27.2	22.2		23.5	18.7		26.1	19.5		19.4	14.0	
Actuated g/C Ratio	0.40	0.33		0.35	0.28		0.38	0.29		0.29	0.21	
v/c Ratio	0.23	0.58		0.21	0.48		0.46	0.43		0.24	0.59	
Control Delay	17.2	24.8		18.2	25.3		24.8	29.3		22.4	36.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.2	24.8		18.2	25.3		24.8	29.3		22.4	36.9	
LOS	B	C		B	C		C	C		C	D	
Approach Delay		23.8			24.4			27.2			32.7	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 67.9

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 26.1

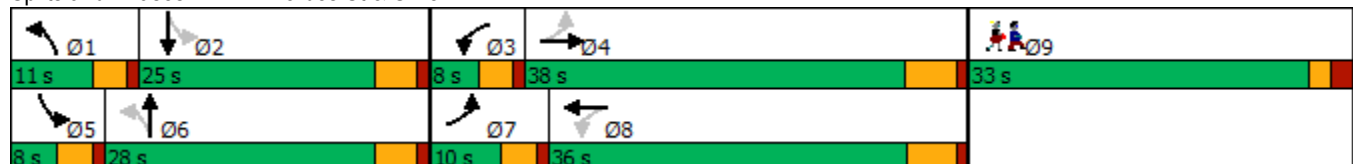
Intersection LOS: C

Intersection Capacity Utilization 54.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 224: Forbes St & Silver Ln























Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	29%
Maximum Green (s)	29.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	22.0
Pedestrian Calls (#/hr)	8
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	297	586	15	17	483	309	7	9	25	239	4	322
Future Volume (vph)	297	586	15	17	483	309	7	9	25	239	4	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0	180		150	0		0	0		110
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996				0.850		0.919				0.850
Flt Protected	0.950			0.950				0.991			0.953	
Satd. Flow (prot)	1662	3310	0	1662	3323	1487	0	1593	0	0	1667	1487
Flt Permitted	0.294			0.404				0.949			0.696	
Satd. Flow (perm)	514	3310	0	707	3323	1487	0	1526	0	0	1217	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				336		27				350
Link Speed (mph)		40			40			20			30	
Link Distance (ft)		1041			769			594			549	
Travel Time (s)		17.7			13.1			20.3			12.5	
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)	323	637	16	18	525	336	8	10	27	260	4	350
Shared Lane Traffic (%)												
Lane Group Flow (vph)	323	653	0	18	525	336	0	45	0	0	264	350
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	7	4		3	8			6			2	7
Permitted Phases	4			8		8	6			2		2

Lanes, Volumes, Timings
236: Phillips Farm Rd/Charter Oak Mall & Silver Ln













01/13/2020

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	








Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	6	6		2	2	7
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.0	21.0		9.0	21.0	21.0	9.2	9.2		9.2	9.2	9.0
Total Split (s)	11.0	25.0		9.0	23.0	23.0	15.0	15.0		15.0	15.0	11.0
Total Split (%)	13.8%	31.3%		11.3%	28.8%	28.8%	18.8%	18.8%		18.8%	18.8%	13.8%
Maximum Green (s)	7.0	19.0		5.0	17.0	17.0	10.8	10.8		10.8	10.8	7.0
Yellow Time (s)	3.0	4.3		3.0	4.3	4.3	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.7		1.0	1.7	1.7	1.2	1.2		1.2	1.2	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	4.0	6.0		4.0	6.0	6.0		4.2			4.2	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	1.5		2.0	1.5	1.5	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	43.9	40.0		27.8	20.7	20.7		27.9			27.9	49.3
Actuated g/C Ratio	0.55	0.50		0.35	0.26	0.26		0.35			0.35	0.62
v/c Ratio	0.61	0.39		0.06	0.61	0.53		0.08			0.62	0.33
Control Delay	19.5	16.3		9.1	29.0	6.1		11.7			31.6	1.9
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	19.5	16.3		9.1	29.0	6.1		11.7			31.6	1.9
LOS	B	B		A	C	A		B			C	A
Approach Delay		17.4			19.9			11.7			14.7	
Approach LOS		B			B			B			B	
Intersection Summary												
Area Type:	Other											
Cycle Length: 80												
Actuated Cycle Length: 80												
Offset: 64 (80%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.62												
Intersection Signal Delay: 17.5				Intersection LOS: B								
Intersection Capacity Utilization 61.8%				ICU Level of Service B								
Analysis Period (min) 15												












Splits and Phases: 236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

 Ø2	 Ø3	 Ø4 (R)	 Ø9
15 s	9 s	25 s	31 s
 Ø6	 Ø7	 Ø8 (R)	
15 s	11 s	23 s	

Lane Group	Ø9
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	31.0
Total Split (s)	31.0
Total Split (%)	39%
Maximum Green (s)	27.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	20.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	217	385	0	374	364	109
Future Volume (vph)	217	385	0	374	364	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370	370	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	0.95
Frt		0.850			0.966	
Flt Protected	0.950					
Satd. Flow (prot)	1662	2617	0	3323	3210	0
Flt Permitted	0.950					
Satd. Flow (perm)	1662	2617	0	3323	3210	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		418			44	
Link Speed (mph)	60			40	40	
Link Distance (ft)	663			202	1149	
Travel Time (s)	7.5			3.4	19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	236	418	0	407	396	118
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	418	0	407	514	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right				
Leading Detector (ft)	20	20		26	26	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				20	20	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			6	2	
Permitted Phases		4				

Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		6	2	
Switch Phase						
Minimum Initial (s)	9.0	9.0		15.0	15.0	
Minimum Split (s)	13.2	13.2		19.8	19.8	
Total Split (s)	59.0	59.0		61.0	61.0	
Total Split (%)	49.2%	49.2%		50.8%	50.8%	
Maximum Green (s)	54.8	54.8		56.2	56.2	
Yellow Time (s)	3.0	3.0		4.3	4.3	
All-Red Time (s)	1.2	1.2		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.2	4.2		4.8	4.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5	1.5		2.0	2.0	
Recall Mode	None	None		C-Max	C-Max	
Act Effect Green (s)	21.8	21.8		89.2	89.2	
Actuated g/C Ratio	0.18	0.18		0.74	0.74	
v/c Ratio	0.78	0.51		0.16	0.21	
Control Delay	64.1	5.8		1.5	5.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	64.1	5.8		1.5	5.1	
LOS	E	A		A	A	
Approach Delay	26.9			1.5	5.1	
Approach LOS	C			A	A	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

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

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 13.2

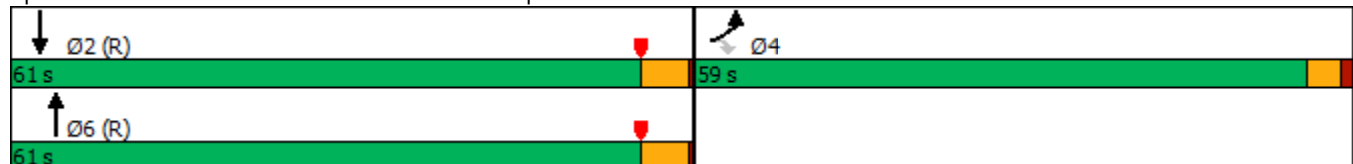
Intersection LOS: B

Intersection Capacity Utilization 34.5%

ICU Level of Service A





















Analysis Period (min) 15

Splits and Phases: 257: Roberts St & I-84 EB Ramps



Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	688	30	77	686	5	33	12	105	6	5	6
Future Volume (vph)	17	688	30	77	686	5	33	12	105	6	5	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	0		170	0		150
Storage Lanes	1		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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00	0.98		1.00	0.98
Frt		0.994			0.999				0.850			0.850
Flt Protected	0.950			0.950				0.965			0.972	
Satd. Flow (prot)	1662	1737	0	1662	1747	0	0	1688	1487	0	1700	1487
Flt Permitted	0.327			0.187				0.776			0.830	
Satd. Flow (perm)	572	1737	0	327	1747	0	0	1354	1452	0	1449	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3							114			89
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		463			289			670			630	
Travel Time (s)		7.9			4.9			18.3			14.3	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		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)	18	748	33	84	746	5	36	13	114	7	5	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	781	0	84	751	0	0	49	114	0	12	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	8.0	0.0	0.0	8.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8			6			2	
Permitted Phases	4			8			6		6	2		2
Detector Phase	4	4		3	8		6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	15.0	15.0		5.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	20.0	13.0	13.0	13.0
Total Split (s)	58.0	58.0		8.0	66.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	52.7%	52.7%		7.3%	60.0%		18.2%	18.2%	18.2%	18.2%	18.2%	18.2%
Maximum Green (s)	53.0	53.0		5.0	61.0		15.0	15.0	15.0	15.0	15.0	15.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	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	0.0
Total Lost Time (s)	5.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	2.0		2.0	2.0	2.0	3.0	3.0	3.0
Recall Mode	Min	Min		None	Min		None	None	None	None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	42.6	42.6		51.1	49.0		8.4	8.4	8.4	8.4	8.4	8.4
Actuated g/C Ratio	0.60	0.60		0.72	0.69		0.12	0.12	0.12	0.12	0.12	0.12
v/c Ratio	0.05	0.75		0.25	0.62		0.31	0.42	0.42	0.07	0.07	0.03
Control Delay	10.2	19.2		6.8	11.2		39.8	13.5	13.5	36.3	36.3	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	19.2		6.8	11.2		39.8	13.5	13.5	36.3	36.3	0.2
LOS	B	B		A	B		D	B	B	D	D	A
Approach Delay		19.0			10.8		21.4				23.0	
Approach LOS		B			B		C				C	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 71.2

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 15.5

Intersection LOS: B

Intersection Capacity Utilization 70.5%

ICU Level of Service C

Analysis Period (min) 15


















Splits and Phases: 258: Mercer Ave/HOV Ramps & Silver Ln



Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	22%
Maximum Green (s)	20.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	4
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	539	225	161	506	13	144	7	210	11	16	47
Future Volume (vph)	20	539	225	161	506	13	144	7	210	11	16	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98				0.98	
Frt		0.957			0.997			0.855			0.914	
Flt Protected		0.999			0.988		0.950				0.993	
Satd. Flow (prot)	0	3177	0	0	3272	0	1662	1496	0	0	1556	0
Flt Permitted		0.739			0.651		0.730				0.380	
Satd. Flow (perm)	0	2350	0	0	2156	0	1258	1496	0	0	595	0
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)		95			2			228				
Link Speed (mph)		40			40			20			20	
Link Distance (ft)		2556			394			450			463	
Travel Time (s)		43.6			6.7			15.3			15.8	
Confl. Peds. (#/hr)	1					1	7					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)	22	586	245	175	550	14	157	8	228	12	17	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	853	0	0	739	0	157	236	0	0	80	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		custom	NA		Perm	NA		Perm	NA	

Lane Group	Ø1	Ø2	Ø9
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Confl. Peds. (#/hr)			
Peak Hour Factor			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Number of Detectors			
Detector Template			
Leading Detector (ft)			
Trailing Detector (ft)			
Detector 1 Position(ft)			
Detector 1 Size(ft)			
Detector 1 Type			
Detector 1 Channel			
Detector 1 Extend (s)			
Detector 1 Queue (s)			
Detector 1 Delay (s)			
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			
Detector 2 Extend (s)			
Turn Type			

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln










01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		1 2		5	2 5			6			6	
Permitted Phases	1 2			2			6			6		
Detector Phase	1 2	1 2		5	2 5		6	6		6	6	
Switch Phase												
Minimum Initial (s)				5.0			5.0	5.0		5.0	5.0	
Minimum Split (s)				9.2			9.2	9.2		9.2	9.2	
Total Split (s)				9.2			12.6	12.6		12.6	12.6	
Total Split (%)				11.5%			15.8%	15.8%		15.8%	15.8%	
Maximum Green (s)				5.0			8.4	8.4		8.4	8.4	
Yellow Time (s)				3.0			3.0	3.0		3.0	3.0	
All-Red Time (s)				1.2			1.2	1.2		1.2	1.2	
Lost Time Adjust (s)							0.0	0.0			0.0	
Total Lost Time (s)							4.2	4.2			4.2	
Lead/Lag				Lead			Lag	Lag		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0			3.0	3.0		3.0	3.0	
Recall Mode				Max			None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		50.7		23.3			8.4	8.4			8.4	
Actuated g/C Ratio		0.63		0.29			0.10	0.10			0.10	
v/c Ratio		0.56		1.06			1.19	0.65			1.29	
Control Delay		11.0		59.9			173.8	15.3			245.9	
Queue Delay		0.0		0.0			0.0	0.0			0.0	
Total Delay		11.0		59.9			173.8	15.3			245.9	
LOS		B		E			F	B			F	
Approach Delay		11.0		59.9				78.6			245.9	
Approach LOS		B		E				E			F	

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.29
 Intersection Signal Delay: 50.5
 Intersection LOS: D
 Intersection Capacity Utilization 66.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 2391: Aldi/Silver Ln Plaza & Silver Ln

  Ø1	  Ø2 (R)	  Ø5	  Ø6	 Ø9
15.7 s	22.5 s	9.2 s	12.6 s	20 s

Lane Group	Ø1	Ø2	Ø9
Protected Phases	1	2	9
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	7.0
Minimum Split (s)	9.5	9.2	20.0
Total Split (s)	15.7	22.5	20.0
Total Split (%)	20%	28%	25%
Maximum Green (s)	12.2	18.3	16.0
Yellow Time (s)	3.0	3.0	2.0
All-Red Time (s)	0.5	1.2	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	
Lead-Lag Optimize?			
Vehicle Extension (s)	2.0	3.0	2.0
Recall Mode	Max	C-Max	None
Walk Time (s)			7.0
Flash Dont Walk (s)			9.0
Pedestrian Calls (#/hr)			7
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø1	Ø5	Ø9
Lane Configurations		↕↕	↕↕		↕	↕			
Traffic Volume (vph)	9	738	597	36	45	20			
Future Volume (vph)	9	738	597	36	45	20			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00			
Ped Bike Factor		1.00	1.00						
Frt			0.991			0.850			
Flt Protected		0.999			0.950				
Satd. Flow (prot)	0	3320	3287	0	1662	1487			
Flt Permitted		0.955			0.950				
Satd. Flow (perm)	0	3174	3287	0	1662	1487			
Right Turn on Red				Yes		Yes			
Satd. Flow (RTOR)			7			22			
Link Speed (mph)		40	40		20				
Link Distance (ft)		394	1041		467				
Travel Time (s)		6.7	17.7		15.9				
Confl. Peds. (#/hr)	7			7					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Adj. Flow (vph)	10	802	649	39	49	22			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	0	812	688	0	49	22			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Left	Left	Right	Left	Right			
Median Width(ft)		0	0		30				
Link Offset(ft)		0	0		0				
Crosswalk Width(ft)		16	16		16				
Two way Left Turn Lane									
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04			
Turning Speed (mph)	15			9	15	9			
Number of Detectors	1	2	2		1	1			
Detector Template	Left	Thru	Thru		Left	Right			
Leading Detector (ft)	20	100	100		20	20			
Trailing Detector (ft)	0	0	0		0	0			
Detector 1 Position(ft)	0	0	0		0	0			
Detector 1 Size(ft)	20	6	6		20	20			
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0			
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0			
Detector 2 Position(ft)		94	94						
Detector 2 Size(ft)		6	6						
Detector 2 Type		Cl+Ex	Cl+Ex						
Detector 2 Channel									
Detector 2 Extend (s)		0.0	0.0						
Turn Type	D.P+P	NA	NA		Prot	Perm			
Protected Phases	1 5	1 2 5	2		6		1	5	9
Permitted Phases	2					6			
Detector Phase	1 5	1 2 5	2		6	6			

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø1	Ø5	Ø9
Switch Phase									
Minimum Initial (s)			5.0		5.0	5.0	6.0	5.0	7.0
Minimum Split (s)			9.2		9.2	9.2	9.5	9.2	20.0
Total Split (s)			22.5		12.6	12.6	15.7	9.2	20.0
Total Split (%)			28.1%		15.8%	15.8%	20%	12%	25%
Maximum Green (s)			18.3		8.4	8.4	12.2	5.0	16.0
Yellow Time (s)			3.0		3.0	3.0	3.0	3.0	2.0
All-Red Time (s)			1.2		1.2	1.2	0.5	1.2	2.0
Lost Time Adjust (s)			0.0		0.0	0.0			
Total Lost Time (s)			4.2		4.2	4.2			
Lead/Lag			Lag		Lag	Lag	Lead	Lead	
Lead-Lag Optimize?									
Vehicle Extension (s)			3.0		3.0	3.0	2.0	3.0	2.0
Recall Mode			C-Max		None	None	Max	Max	None
Walk Time (s)									7.0
Flash Dont Walk (s)									9.0
Pedestrian Calls (#/hr)									7
Act Effect Green (s)		52.9	18.3		8.4	8.4			
Actuated g/C Ratio		0.66	0.23		0.10	0.10			
v/c Ratio		0.38	0.91		0.28	0.13			
Control Delay		2.6	32.6		37.6	16.1			
Queue Delay		0.0	0.0		0.0	0.0			
Total Delay		2.6	32.6		37.6	16.1			
LOS		A	C		D	B			
Approach Delay		2.6	32.6		31.0				
Approach LOS		A	C		C				

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.29

Intersection Signal Delay: 17.0

Intersection LOS: B

Intersection Capacity Utilization 37.7%

ICU Level of Service A










Analysis Period (min) 15

Splits and Phases: 2392: Silver Ln & Silver Ln Plaza

#239#2392 Ø1	#239#2392 Ø2 (R)	#239#2392 Ø5	#239#2392 Ø6	#239#2392 Ø9
15.7 s	22.5 s	9.2 s	12.6 s	20 s










Lanes, Volumes, Timings
101: CT 15 On-Ramp & Silver Ln

01/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	479	10	281	432	0	0
Future Volume (vph)	479	10	281	432	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	370		0	0
Storage Lanes		0	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.997					
Flt Protected			0.950			
Satd. Flow (prot)	1744	0	1662	1749	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	1744	0	1662	1749	0	0
Link Speed (mph)	40			40	50	
Link Distance (ft)	781			759	593	
Travel Time (s)	13.3			12.9	8.1	
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	521	11	305	470	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	532	0	305	470	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	60.7%			ICU Level of Service B		
Analysis Period (min)	15					










Lanes, Volumes, Timings
102: CT 15 Off-Ramp & Silver Ln

01/13/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	475	0	0	722	1	256
Future Volume (vph)	475	0	0	722	1	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.865	
Flt Protected						
Satd. Flow (prot)	1749	0	0	1749	1513	0
Flt Permitted						
Satd. Flow (perm)	1749	0	0	1749	1513	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	759			463	1125	
Travel Time (s)	12.9			7.9	25.6	
Confl. Peds. (#/hr)					1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	516	0	0	785	1	278
Shared Lane Traffic (%)						
Lane Group Flow (vph)	516	0	0	785	279	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	11	
Link Offset(ft)	0			6	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		9	15		15	9
Sign Control	Yield			Yield	Yield	
Intersection Summary						
Area Type:	Other					
Control Type:	Roundabout					
Intersection Capacity Utilization	60.7%			ICU Level of Service B		
Analysis Period (min)	15					







Lanes, Volumes, Timings
103: Roberts St & I-84 EB On-Ramp

01/13/2020

						
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	374	238	0	749	0	0
Future Volume (vph)	374	238	0	749	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		1	1		0	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.91	0.91	1.00	0.86	1.00	1.00
Frt	0.982	0.850				
Flt Protected						
Satd. Flow (prot)	3126	1353	0	6017	0	0
Flt Permitted						
Satd. Flow (perm)	3126	1353	0	6017	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	268			202	622	
Travel Time (s)	4.6			3.4	14.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	407	259	0	814	0	0
Shared Lane Traffic (%)		22%				
Lane Group Flow (vph)	464	202	0	814	0	0
Enter Blocked Intersection	Yes	No	No	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)		30	15		15	9
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	16.2%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings
104: P&W Connector & E Hartford Blvd N

























01/13/2020

						
Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑↑↑	↑↑	↗		
Traffic Volume (vph)	0	1182	100	39	0	0
Future Volume (vph)	0	1182	100	39	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.95	1.00	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	0	4775	3323	1487	0	0
Flt Permitted						
Satd. Flow (perm)	0	4775	3323	1487	0	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		753	253		432	
Travel Time (s)		14.7	4.9		9.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1285	109	42	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1285	109	42	0	0
Enter Blocked Intersection	No	Yes	Yes	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Right
Median Width(ft)		24	11		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.2%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	412	74	45	347	150	92	219	49	249	233	267
Future Volume (vph)	243	412	74	45	347	150	92	219	49	249	233	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		140	160		160	150		200	150		0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.95	1.00
Ped Bike Factor			0.98	0.99								
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3224	3323	1487	1662	3323	1487	3224	4775	1487	3224	3323	1487
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3224	3323	1463	1648	3323	1487	3224	4775	1487	3224	3323	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			227			223			280			290
Link Speed (mph)		40			40			35			40	
Link Distance (ft)		385			2540			253			268	
Travel Time (s)		6.6			43.3			4.9			4.6	
Confl. Peds. (#/hr)			3	3								
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)	264	448	80	49	377	163	100	238	53	271	253	290
Shared Lane Traffic (%)												
Lane Group Flow (vph)	264	448	80	49	377	163	100	238	53	271	253	290
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Right	Right	Left	Left	Right
Median Width(ft)		22			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	

Lanes, Volumes, Timings

222: E Hartford Blvd N/Roberts St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases			4			8			6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	10.5	21.3	21.3	11.0	21.0	21.0	11.0	21.0	21.0	11.0	21.0	21.0
Total Split (s)	20.0	31.0	31.0	13.0	24.0	24.0	13.0	23.0	23.0	20.0	30.0	30.0
Total Split (%)	16.7%	25.8%	25.8%	10.8%	20.0%	20.0%	10.8%	19.2%	19.2%	16.7%	25.0%	25.0%
Maximum Green (s)	14.5	24.7	24.7	7.0	18.0	18.0	7.0	17.0	17.0	14.0	24.0	24.0
Yellow Time (s)	3.0	4.3	4.3	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	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	0.0	0.0	0.0
Total Lost Time (s)	5.5	6.3	6.3	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	4.0	4.0	2.0	4.0	4.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)	13.1	25.4	25.4	7.1	18.0	18.0	8.1	51.0	51.0	14.4	57.3	57.3
Actuated g/C Ratio	0.11	0.21	0.21	0.06	0.15	0.15	0.07	0.42	0.42	0.12	0.48	0.48
v/c Ratio	0.75	0.64	0.16	0.51	0.76	0.40	0.46	0.12	0.07	0.70	0.16	0.34
Control Delay	65.6	48.2	0.7	72.7	59.6	4.5	60.3	22.1	0.2	68.0	17.1	2.5
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	65.6	48.2	0.7	72.7	59.6	4.5	60.3	22.1	0.2	68.0	17.1	2.5
LOS	E	D	A	E	E	A	E	C	A	E	B	A
Approach Delay		49.2			45.4			28.9			28.8	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 91 (76%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 38.9

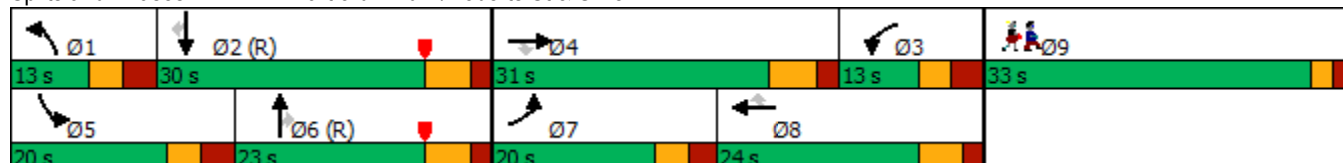
Intersection LOS: D

Intersection Capacity Utilization 58.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 222: E Hartford Blvd N/Roberts St & Silver Ln






















Lane Group	Ø9
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	33.0
Total Split (s)	33.0
Total Split (%)	28%
Maximum Green (s)	29.0
Yellow Time (s)	2.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	2.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	35.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Intersection Summary	

Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	628	7	3	558	76	5	0	2	72	0	39
Future Volume (vph)	28	628	7	3	558	76	5	0	2	72	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00		0.99				0.99	
Frt		0.998			0.982			0.850			0.953	
Flt Protected	0.950			0.950			0.950				0.969	
Satd. Flow (prot)	1662	1746	0	1662	1713	0	1662	1487	0	0	1605	0
Flt Permitted	0.331			0.331			0.827				0.803	
Satd. Flow (perm)	578	1746	0	579	1713	0	1439	1487	0	0	1330	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			28			314			42	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		2540			2556			982			825	
Travel Time (s)		43.3			43.6			22.3			18.8	
Confl. Peds. (#/hr)	7					7	3					3
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)	30	683	8	3	607	83	5	0	2	78	0	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	691	0	3	690	0	5	2	0	0	120	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left			Left			Left			Left	Thru	
Leading Detector (ft)	20	266		20	266		20	100		20	100	
Trailing Detector (ft)	0	130		0	130		0	0		0	0	
Detector 1 Position(ft)	0	130		0	130		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	8.0		0.0	0.0	
Detector 2 Position(ft)		260			260			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	

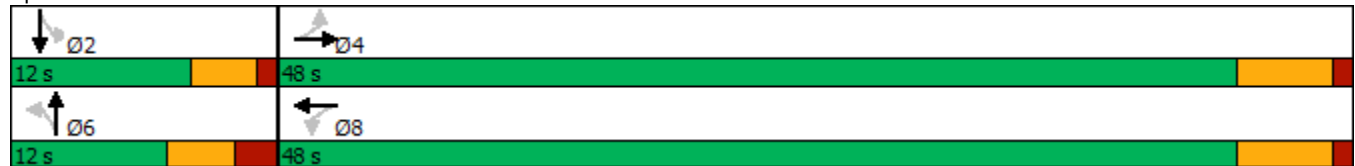
Lanes, Volumes, Timings

223: Rentschler Field/Simmons Rd & Silver Ln

01/13/2020






















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		10.0	10.0		9.0	9.0	
Minimum Split (s)	23.3	23.3		23.3	23.3		20.0	20.0		13.0	13.0	
Total Split (s)	48.0	48.0		48.0	48.0		12.0	12.0		12.0	12.0	
Total Split (%)	80.0%	80.0%		80.0%	80.0%		20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	42.7	42.7		42.7	42.7		7.0	7.0		8.0	8.0	
Yellow Time (s)	4.3	4.3		4.3	4.3		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0	2.0		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)	5.3	5.3		5.3	5.3		5.0	5.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Act Effct Green (s)	27.0	27.0		27.0	27.0		7.1	7.1			8.1	
Actuated g/C Ratio	0.66	0.66		0.66	0.66		0.17	0.17			0.20	
v/c Ratio	0.08	0.60		0.01	0.60		0.02	0.00			0.40	
Control Delay	4.4	8.3		3.7	8.2		15.8	0.0			15.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	4.4	8.3		3.7	8.2		15.8	0.0			15.6	
LOS	A	A		A	A		B	A			B	
Approach Delay		8.1			8.2			11.3			15.6	
Approach LOS		A			A			B			B	
Intersection Summary												
Area Type:	Other											
Cycle Length: 60												
Actuated Cycle Length: 40.8												
Natural Cycle: 60												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 0.60												
Intersection Signal Delay: 8.7												
Intersection Capacity Utilization 55.0%												
Analysis Period (min) 15												
Intersection LOS: A												
ICU Level of Service A												

Splits and Phases: 223: Rentschler Field/Simmons Rd & Silver Ln



Lanes, Volumes, Timings
224: Forbes St & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	336	208	56	308	80	163	119	67	77	123	63
Future Volume (vph)	77	336	208	56	308	80	163	119	67	77	123	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370		0	190		0	350		0	330		0
Storage Lanes	1		1	1		0	2		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.91	0.95	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00	0.99	1.00	1.00		1.00	0.99		1.00	0.99	
Frt		0.991	0.850		0.969			0.946			0.950	
Flt Protected	0.950	0.999		0.950			0.950			0.950		
Satd. Flow (prot)	1579	1575	1412	1662	3212	0	3224	3114	0	1662	3129	0
Flt Permitted	0.493	0.993		0.510			0.563			0.625		
Satd. Flow (perm)	819	1565	1394	892	3212	0	1904	3114	0	1089	3129	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		769			1106			1073			978	
Travel Time (s)		13.1			18.9			24.4			22.2	
Confl. Peds. (#/hr)	2		2	2		2	2		2	2		2
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)	84	365	226	61	335	87	177	129	73	84	134	68
Shared Lane Traffic (%)	10%		10%									
Lane Group Flow (vph)	76	396	203	61	422	0	177	202	0	84	202	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left		Right	Left			Left	Thru		Left	Thru	
Leading Detector (ft)	20	326	20	20	326		20	100		20	100	
Trailing Detector (ft)	0	160	0	0	160		0	0		0	0	
Detector 1 Position(ft)	0	160	0	0	160		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		320			320			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	

Lanes, Volumes, Timings

224: Forbes St & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8			6			2		
Detector Phase	7	4	4	3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0		3.0	10.0		3.0	10.0	
Minimum Split (s)	7.0	20.5	20.5	7.0	21.3		7.0	20.0		7.0	20.0	
Total Split (s)	7.0	55.0	55.0	7.0	55.0		10.0	18.0		10.0	18.0	
Total Split (%)	7.8%	61.1%	61.1%	7.8%	61.1%		11.1%	20.0%		11.1%	20.0%	
Maximum Green (s)	3.0	49.5	49.5	3.0	49.6		6.0	13.1		6.0	13.1	
Yellow Time (s)	3.0	4.4	4.4	3.0	4.3		3.0	3.6		3.0	3.6	
All-Red Time (s)	1.0	1.1	1.1	1.0	1.1		1.0	1.3		1.0	1.3	
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)	4.0	5.5	5.5	4.0	5.4		4.0	4.9		4.0	4.9	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	3.0	3.0	2.0	3.0		2.0	2.0		2.0	2.0	
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None	
Act Effct Green (s)	54.9	52.2	48.1	54.1	47.8		21.2	13.2		19.9	11.1	
Actuated g/C Ratio	0.61	0.58	0.53	0.60	0.53		0.24	0.15		0.22	0.12	
v/c Ratio	0.14	0.44	0.27	0.10	0.25		0.31	0.44		0.29	0.52	
Control Delay	6.5	9.1	10.9	7.4	13.2		26.2	39.2		27.0	41.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	6.5	9.1	10.9	7.4	13.2		26.2	39.2		27.0	41.9	
LOS	A	A	B	A	B		C	D		C	D	
Approach Delay		9.3			12.5			33.1			37.5	
Approach LOS		A			B			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 83.5 (93%), Referenced to phase 4:EBTL and 8:WBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 19.5

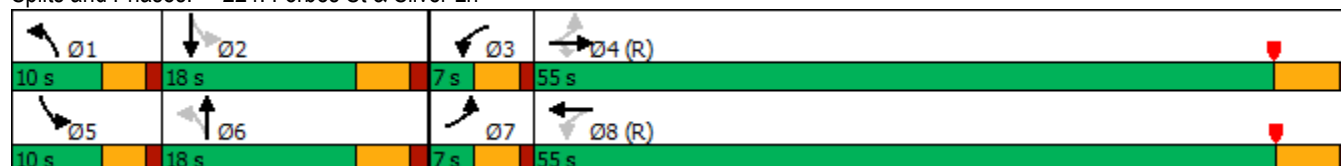
Intersection LOS: B

Intersection Capacity Utilization 60.2%

ICU Level of Service B

Analysis Period (min) 15






















Splits and Phases: 224: Forbes St & Silver Ln



Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln













01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	297	586	15	17	483	309	7	9	25	239	4	322
Future Volume (vph)	297	586	15	17	483	309	7	9	25	239	4	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0	180		769	0		0	0		110
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.996				0.850		0.919				0.850
Flt Protected	0.950			0.950				0.991		0.950	0.954	
Satd. Flow (prot)	1662	1742	0	1662	1749	1487	0	1593	0	1579	1585	1487
Flt Permitted	0.220			0.326				0.952		0.728	0.700	
Satd. Flow (perm)	385	1742	0	570	1749	1487	0	1530	0	1210	1163	1487
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				336		27				302
Link Speed (mph)		40			40			20			30	
Link Distance (ft)		1041			769			594			549	
Travel Time (s)		17.7			13.1			20.3			12.5	
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)	323	637	16	18	525	336	8	10	27	260	4	350
Shared Lane Traffic (%)										49%		
Lane Group Flow (vph)	323	653	0	18	525	336	0	45	0	133	131	350
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	custom	Perm	NA		Perm	NA	custom
Protected Phases	1	6		5	2	2		4			4	14
Permitted Phases	6			2		2	4	4		4	4	4

Lanes, Volumes, Timings

236: Phillips Farm Rd/Charter Oak Mall & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6		5	2	2	4	4		4	4	1 4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	15.0	15.0		15.0	15.0	
Minimum Split (s)	9.0	9.0		9.0	9.2	9.2	21.0	21.0		21.0	21.0	
Total Split (s)	18.0	61.0		9.0	52.0	52.0	20.0	20.0		20.0	20.0	
Total Split (%)	20.0%	67.8%		10.0%	57.8%	57.8%	22.2%	22.2%		22.2%	22.2%	
Maximum Green (s)	14.0	57.0		5.0	47.8	47.8	14.0	14.0		14.0	14.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	4.3	4.3		4.3	4.3	
All-Red Time (s)	1.0	1.0		1.0	1.2	1.2	1.7	1.7		1.7	1.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.2	4.2		6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	1.5	1.5		1.5	1.5	
Recall Mode	None	None		None	None	None	C-Max	C-Max		C-Max	C-Max	
Act Effect Green (s)	52.1	48.5		39.5	34.3	34.3		27.9		27.9	27.9	47.5
Actuated g/C Ratio	0.58	0.54		0.44	0.38	0.38		0.31		0.31	0.31	0.53
v/c Ratio	0.78	0.69		0.06	0.79	0.43		0.09		0.36	0.36	0.38
Control Delay	23.4	23.2		5.7	30.8	4.4		16.0		31.3	31.7	4.5
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	23.4	23.2		5.7	30.8	4.4		16.0		31.3	31.7	4.5
LOS	C	C		A	C	A		B		C	C	A
Approach Delay		23.3			20.2			16.0			16.1	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 76 (84%), Referenced to phase 4:NBSB, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 20.3

Intersection LOS: C

Intersection Capacity Utilization 69.7%

ICU Level of Service C












Analysis Period (min) 15

Splits and Phases: 236: Phillips Farm Rd/Charter Oak Mall & Silver Ln



Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	217	385	0	374	364	109
Future Volume (vph)	217	385	0	374	364	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	370	370	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	0.88	1.00	0.95	0.95	0.95
Frt		0.850			0.966	
Flt Protected	0.950					
Satd. Flow (prot)	1662	2617	0	3323	3210	0
Flt Permitted	0.950					
Satd. Flow (perm)	1662	2617	0	3323	3210	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		418			44	
Link Speed (mph)	60			40	40	
Link Distance (ft)	663			202	1149	
Travel Time (s)	7.5			3.4	19.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	236	418	0	407	396	118
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	418	0	407	514	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right				
Leading Detector (ft)	20	20		26	26	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				20	20	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			6	2	
Permitted Phases		4				

Lanes, Volumes, Timings
257: Roberts St & I-84 EB Ramps

01/13/2020

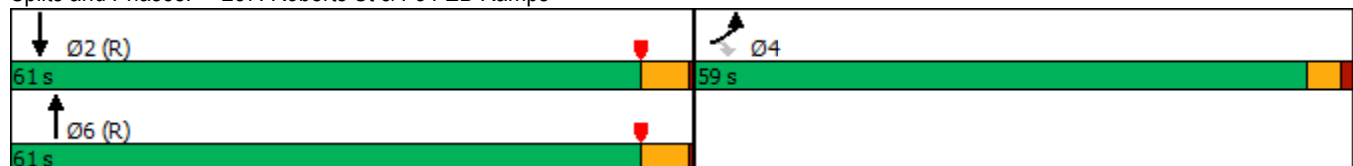


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4		6	2	
Switch Phase						
Minimum Initial (s)	9.0	9.0		15.0	15.0	
Minimum Split (s)	13.2	13.2		19.8	19.8	
Total Split (s)	59.0	59.0		61.0	61.0	
Total Split (%)	49.2%	49.2%		50.8%	50.8%	
Maximum Green (s)	54.8	54.8		56.2	56.2	
Yellow Time (s)	3.0	3.0		4.3	4.3	
All-Red Time (s)	1.2	1.2		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.2	4.2		4.8	4.8	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.5	1.5		2.0	2.0	
Recall Mode	None	None		C-Max	C-Max	
Act Effect Green (s)	21.8	21.8		89.2	89.2	
Actuated g/C Ratio	0.18	0.18		0.74	0.74	
v/c Ratio	0.78	0.51		0.16	0.21	
Control Delay	64.1	5.8		1.5	5.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	64.1	5.8		1.5	5.1	
LOS	E	A		A	A	
Approach Delay	26.9			1.5	5.1	
Approach LOS	C			A	A	

Intersection Summary





















Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 13.2
Intersection LOS: B
Intersection Capacity Utilization 34.5%
ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 257: Roberts St & I-84 EB Ramps















Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	688	30	77	686	5	33	12	105	6	5	6
Future Volume (vph)	17	688	30	77	686	5	33	12	105	6	5	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	170		0	0		170	0		150
Storage Lanes	1		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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00	1.00			1.00	0.98		1.00	0.98
Frt		0.994			0.999				0.850			0.850
Flt Protected	0.950			0.950				0.965			0.972	
Satd. Flow (prot)	1662	1737	0	1662	1747	0	0	1688	1487	0	1700	1487
Flt Permitted	0.364			0.231				0.776			0.792	
Satd. Flow (perm)	637	1737	0	404	1747	0	0	1354	1452	0	1383	1452
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			1				114			78
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		463			289			670			630	
Travel Time (s)		7.9			4.9			18.3			14.3	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		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)	18	748	33	84	746	5	36	13	114	7	5	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	781	0	84	751	0	0	49	114	0	12	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	8.0	0.0	0.0	8.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	Perm

Lanes, Volumes, Timings
258: Mercer Ave/HOV Ramps & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8			6			2	
Permitted Phases	4			8			6		6	2		2
Detector Phase	4	4		3	8		6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	15.0	15.0		5.0	14.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	20.0	13.0	13.0	13.0
Total Split (s)	48.0	48.0		7.0	55.0		15.0	15.0	15.0	15.0	15.0	15.0
Total Split (%)	68.6%	68.6%		10.0%	78.6%		21.4%	21.4%	21.4%	21.4%	21.4%	21.4%
Maximum Green (s)	43.0	43.0		4.0	50.0		10.0	10.0	10.0	10.0	10.0	10.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		0.0	2.0		2.0	2.0	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	0.0
Total Lost Time (s)	5.0	5.0		3.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	2.0		2.0	2.0	2.0	3.0	3.0	3.0
Recall Mode	Min	Min		None	Min		None	None	None	None	None	None
Act Effect Green (s)	36.0	36.0		40.2	39.6		8.1	8.1	8.1	8.1	8.1	8.1
Actuated g/C Ratio	0.68	0.68		0.76	0.74		0.15	0.15	0.15	0.15	0.15	0.15
v/c Ratio	0.04	0.66		0.21	0.58		0.24	0.36	0.36	0.06	0.06	0.02
Control Delay	5.6	11.6		3.5	6.7		28.1	10.1	10.1	25.7	25.7	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	11.6		3.5	6.7		28.1	10.1	10.1	25.7	25.7	0.2
LOS	A	B		A	A		C	B	B	C	C	A
Approach Delay		11.5			6.4		15.5				16.3	
Approach LOS		B			A		B				B	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 53.2

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 9.6

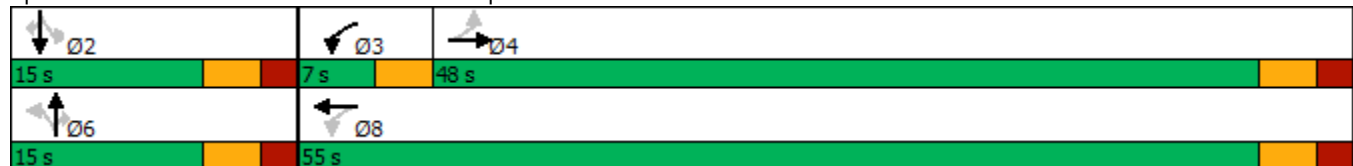
Intersection LOS: A

Intersection Capacity Utilization 70.5%

ICU Level of Service C






















Analysis Period (min) 15

Splits and Phases: 258: Mercer Ave/HOV Ramps & Silver Ln















Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	539	225	161	506	13	144	7	210	11	16	47
Future Volume (vph)	20	539	225	161	506	13	144	7	210	11	16	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		100	150		0	100		0	0		0
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00			0.99				0.98
Frt			0.850		0.996				0.850			0.850
Flt Protected	0.950			0.950				0.955			0.980	
Satd. Flow (prot)	1662	1749	1487	1662	1741	0	0	1670	1487	0	1714	1487
Flt Permitted	0.392			0.298				0.715			0.879	
Satd. Flow (perm)	685	1749	1487	521	1741	0	0	1241	1487	0	1538	1459
Right Turn on Red			Yes			Yes			Yes			No
Satd. Flow (RTOR)			169		2				228			
Link Speed (mph)		40			40			20			20	
Link Distance (ft)		2556			394			450			463	
Travel Time (s)		43.6			6.7			15.3			15.8	
Confl. Peds. (#/hr)	1					1	7					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)	22	586	245	175	550	14	157	8	228	12	17	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	586	245	175	564	0	0	165	228	0	29	51
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	custom	pm+pt	NA		Perm	NA	custom	Perm	NA	custom

Lanes, Volumes, Timings
2391: Aldi/Silver Ln Plaza & Silver Ln

01/13/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	6	6	5	2			4	4 5		4	1 4
Permitted Phases	6		6	2			4	4	4	4	4	4
Detector Phase	1	6	6	5	2		4	4	4 5	4	4	1 4
Switch Phase												
Minimum Initial (s)	6.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	9.2	9.2	9.2	9.2		9.2	9.2		9.2	9.2	
Total Split (s)	9.6	49.6	49.6	14.2	54.2		26.2	26.2		26.2	26.2	
Total Split (%)	10.7%	55.1%	55.1%	15.8%	60.2%		29.1%	29.1%		29.1%	29.1%	
Maximum Green (s)	6.1	45.4	45.4	10.0	50.0		22.0	22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.5	1.2	1.2	1.2	1.2		1.2	1.2		1.2	1.2	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)	3.5	4.2	4.2	4.2	4.2			4.2			4.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	
Act Effect Green (s)	58.5	51.8	51.8	63.9	56.9			17.1	29.8		17.1	27.3
Actuated g/C Ratio	0.65	0.58	0.58	0.71	0.63			0.19	0.33		0.19	0.30
v/c Ratio	0.04	0.58	0.26	0.37	0.51			0.70	0.35		0.10	0.11
Control Delay	5.2	16.7	4.8	4.1	5.0			49.1	4.2		28.3	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.3			0.0	0.0		0.0	0.0
Total Delay	5.2	16.7	4.8	4.1	5.2			49.1	4.2		28.3	21.3
LOS	A	B	A	A	A			D	A		C	C
Approach Delay		13.0			4.9			23.0			23.8	
Approach LOS		B			A			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow, Master Intersection

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 12.4

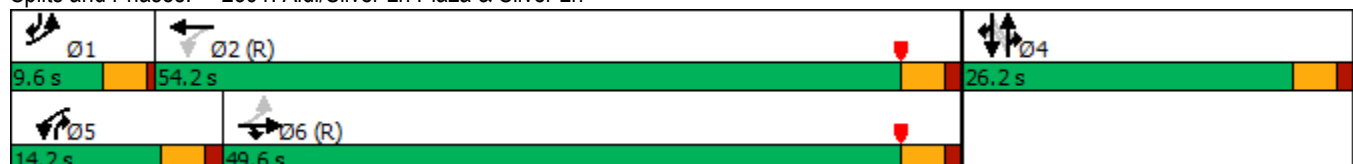
Intersection LOS: B

Intersection Capacity Utilization 62.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2391: Aldi/Silver Ln Plaza & Silver Ln



Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	9	738	597	36	45	20
Future Volume (vph)	9	738	597	36	45	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		1.00			
Frt			0.992			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1662	1749	1733	0	1662	1487
Flt Permitted	0.323				0.950	
Satd. Flow (perm)	564	1749	1733	0	1662	1487
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			8			22
Link Speed (mph)		40	40		20	
Link Distance (ft)		394	1041		467	
Travel Time (s)		6.7	17.7		15.9	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	802	649	39	49	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	802	688	0	49	22
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		30	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA		Prot	pt+ov

Lanes, Volumes, Timings
2392: Silver Ln & Silver Ln Plaza

01/13/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases	1	2	2		4	14
Permitted Phases	2				4	4
Detector Phase	1	2	2		4	14
Switch Phase						
Minimum Initial (s)	6.0	5.0	5.0		5.0	
Minimum Split (s)	9.5	9.2	9.2		9.2	
Total Split (s)	10.0	68.0	68.0		12.0	
Total Split (%)	11.1%	75.6%	75.6%		13.3%	
Maximum Green (s)	6.5	63.8	63.8		7.8	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	0.5	1.2	1.2		1.2	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.5	4.2	4.2		4.2	
Lead/Lag	Lead	Lag	Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	3.0	3.0		3.0	
Recall Mode	Max	C-Max	C-Max		None	
Act Effct Green (s)	73.6	63.8	63.8		7.1	18.5
Actuated g/C Ratio	0.82	0.71	0.71		0.08	0.21
v/c Ratio	0.02	0.65	0.56		0.37	0.07
Control Delay	1.1	5.0	9.5		47.3	12.8
Queue Delay	0.0	0.1	0.0		0.0	0.0
Total Delay	1.1	5.2	9.5		47.3	12.8
LOS	A	A	A		D	B
Approach Delay		5.1	9.5		36.6	
Approach LOS		A	A		D	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 9 (10%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 8.4
Intersection Capacity Utilization 50.0%
Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service A

Splits and Phases: 2392: Silver Ln & Silver Ln Plaza



A.3. APPENDIX 3 – POTENTIAL ROW NEEDS

Potential ROW Needs along North Side of Silver Lane

Address	Property Owner*	Notes
126 Silver Lane	Stone Creek Apartments, LLC	Partial Acquisition - Narrow strip in front of parcel
140 Silver Lane	Stone Creek Apartments, LLC	Partial Acquisition - Narrow strip in front of parcel
152 Silver Lane	Elba E. Romero Fernandez	Partial Acquisition - Narrow strip in front of parcel
158 Silver Lane	Oliver & Lesah Brown	Partial Acquisition - Back of side path would be within 10' of building
166 Silver Lane	Harry P. Berube	Partial Acquisition - Back of side path would be within 10' of building, stone wall would be impacted
248 - 250 Silver Lane	Roy N. & Joanna Berry	Partial Acquisition - Back of side path would be within 10' of building
252 - 254 Silver Lane	Euclid B & Estelle Ritchens	Partial Acquisition - Back of side path would be within 10' of building
256 - 258 Silver Lane	Pablo Rodriguez	Partial Acquisition - Back of side path would be within 10' of building
260 - 262 Silver Lane	Janet Fyffe & McLaren	Partial Acquisition - Back of side path would be within 10' of building
268 Silver Lane	Murphy Timothy as Trustee	Partial Acquisition - Narrow strip in front of parcel
300 Silver Lane	8 New Britain Pizza, LLC	Partial Acquisition - Narrow strip in front of parcel
306 Silver Lane	Golden Lane, LLC	Partial Acquisition - Narrow strip in front of parcel may impact parking lot capacity
310 Silver Lane	310 Silver Lane, LLC	Partial Acquisition - Narrow strip in front of parcel
320 Silver Lane	United Technologies Corps	Partial Acquisition - Narrow strip in front of parcel
334 Silver Lane	Abmr Associates, LLP	Partial Acquisition - Narrow strip in front of parcel
346 Silver Lane	Nelly Prado & Mendivil Jorge	Partial Acquisition - Narrow strip in front of parcel
356 Silver Lane	May Devon	Partial Acquisition - Narrow strip in front of parcel
364 Silver Lane	364 Silver Lane, LLC	Partial Acquisition - Narrow strip in front of parcel
374 Silver Lane	364 Silver Lane, LLC	Partial Acquisition - Narrow strip in front of parcel
382 Silver Lane	Jean F. Hahn, Trustee	Partial Acquisition - Narrow strip in front of parcel
398 Silver Lane	Dwight Hahn	Partial Acquisition - Narrow strip in front of parcel
430 Silver Lane	Martin & Rothman Inc. Realtors	Partial Acquisition - Narrow strip in front of parcel
490 Silver Lane	Amneris Diaz	Partial Acquisition - Narrow strip in front of parcel
502 - 504 Silver Lane	Christine M. Castagna	Partial Acquisition - Back of side path would be within 10' of building
758 - 760 Silver Lane	SUAS, LLC	Partial Acquisition - Narrow strip in front of parcel
764 Silver Lane	764 Silver Lane, LLC	Partial Acquisition - Back of side path would be within 10' of building
768 Silver Lane	Maxine Williams	Partial Acquisition - Narrow strip in front of parcel
780 Silver Lane	The Roncalli Institute Inc.	Partial Acquisition - Narrow strip in front of parcel
794 - 810 Silver Lane	East Hartford Venture, LLC	Partial Acquisition - Narrow strip in front of parcel may impact sign structure
810 - 850 Silver Lane	East Hartford Venture, LLC	Partial Acquisition - Narrow strip in front of parcel for taper at bus pullout
914 Silver Lane	Robert F Futtner	Partial Acquisition - Narrow strip in front of parcel for taper at bus pullout
922 Silver Lane	38 Westland Avenue Nominee Trust	Partial Acquisition - Narrow strip in front of parcel for bus pullout
972 Silver Lane	Silver & Forbes LLC	Partial Acquisition - Narrow strip in front of parcel

*Property ownership information from survey conducted by Martinez Couch, fall 2018.

Potential ROW Needs along North Side of Silver Lane

Address	Property Owner*	Notes
135 Silver Lane	Robert A. Dellarocca	Partial Acquisition - Narrow strip in front of parcel and impact to wooden fence
143 Silver Lane	Anthony D. Marshall	Partial Acquisition - Narrow strip in front of parcel
151 Silver Lane	Doreen F. Hupper	Partial Acquisition - Narrow strip in front of parcel
213 Silver Lane	Silver Property, LLC	Partial Acquisition - Narrow strip in front of parcel
219 Silver Lane	Gary P. Berube	Partial Acquisition - Narrow strip in front of parcel
227 Silver Lane	Arias Properties, LLC	Partial Acquisition - Narrow strip in front of parcel
241 Silver Lane	Mahar Realty, LLC	Partial Acquisition - Narrow strip in front of parcel
249 Silver Lane	249 - 257 Silver Lane, LLC	Partial Acquisition - Narrow strip in front of parcel including bus pullout
257 Silver Lane	249 - 257 Silver Lane, LLC	Partial Acquisition - Narrow strip in front of parcel
273 - 275 Silver Lane	Samuel Guzman	Partial Acquisition - Narrow strip in front of parcel
277 - 279 Silver Lane	Chuc Nguyen	Partial Acquisition - Narrow strip in front of parcel
281 - 283 Silver Lane	Willie Hunter	Partial Acquisition - Narrow strip in front of parcel and reduction in number of parking spaces
285 - 287 Silver Lane	Ow C. Ballentyne	Partial Acquisition - Narrow strip in front of parcel and reduction in number of parking spaces
295 Silver Lane	Sunoco LLC	Partial Acquisition - Narrow strip in front of parcel
305 - 307 Silver Lane	Leonard T. Wetmore	Partial Acquisition - Narrow strip in front of parcel
315 Silver Lane	United Cable Television Svcs	Partial Acquisition - Narrow strip in front of parcel
319 Silver Lane	Theodore A. Niemiroski	Partial Acquisition - Narrow strip in front of parcel
323 Silver Lane	Theodore A. Niemiroski	Partial Acquisition - Narrow strip in front of parcel
327 Silver Lane	Abdellatif Elbourale	Partial Acquisition - Narrow strip in front of parcel
351 Silver Lane	Wilfred P. Chcoine	Partial Acquisition - Narrow strip in front of parcel
367 - 369 Silver Lane	East Hartford Redevelopment, LLC	Partial Acquisition - Narrow strip in front of parcel
377 Silver Lane	United Technologies Corps	Partial Acquisition - Narrow strip in front of parcel
391 Silver Lane	Pratt & Whitney Aircraft	Partial Acquisition - Narrow strip in front of parcel
405 Silver Lane	Pratt & Whitney Aircraft	Partial Acquisition - Narrow strip in front of parcel
445 Silver Lane	Georgianna Ruggiero	Partial Acquisition - Narrow strip in front of parcel
453 - 455 Silver Lane	Eastern Holdings, LLC	Partial Acquisition - Narrow strip in front of parcel
461 Silver Lane	Eastern Holdings, LLC	Partial Acquisition - Narrow strip in front of parcel
483 Silver Lane	Alliance Energy, LLC	Partial Acquisition - Narrow strip in front of parcel
593 Silver Lane	State of Connecticut	Partial Acquisition - Narrow strip in front of parcel
615 Silver Lane	State of Connecticut	Partial Acquisition - Narrow strip in front of parcel and route for bridge over Willow Brook
583 Silver Lane	Margarita E. Gonzalez	Partial Acquisition - Narrow strip in front of parcel
611 Silver Lane	State of Connecticut	Partial Acquisition - Narrow strip in front of parcel
627 Silver Lane	State of Connecticut	Partial Acquisition - Narrow strip in front of parcel
675 Silver Lane	The Blue Army Trust	Partial Acquisition - Narrow strip in front of parcel
677 Silver Lane	Temple Property Management, LLC	Partial Acquisition - Narrow strip in front of parcel will likely impact sign
695 Silver Lane	The Blue Army Trust	Partial Acquisition - Narrow strip in front of parcel
709 Silver Lane	The Blue Army Trust	Partial Acquisition - Narrow strip in front of parcel
735 Silver Lane	GG Salvage EHDG, LLC	Partial Acquisition - Narrow strip in front of parcel
775 Silver Lane	BEBY, LLC	Partial Acquisition - Narrow strip in front of parcel will impact planting bed
785 Silver Lane	SUVAS, LLC	Partial Acquisition - Narrow strip in front of parcel
801 Silver Lane	Aldi Inc.	Partial Acquisition - Narrow strip in front of parcel
825 Silver Lane	The Nguyen & Cai Group, LLC	Partial Acquisition - Narrow strip in front of parcel
973 Silver Lane	Phillips Farm Condominium Complex	Partial Acquisition - Narrow strip in front of parcel
975 Silver Lane	Carter Alvin Benjamin Jr.	Partial Acquisition - Narrow strip in front of parcel
987 Silver Lane	Juan J. Cordero	Partial Acquisition - Narrow strip in front of parcel

*Property ownership information from survey conducted by Martinez Couch, fall 2018.