



FINAL REPORT

Appendix B
Existing Conditions



Technical Memorandum 1: Existing Conditions

December 2024

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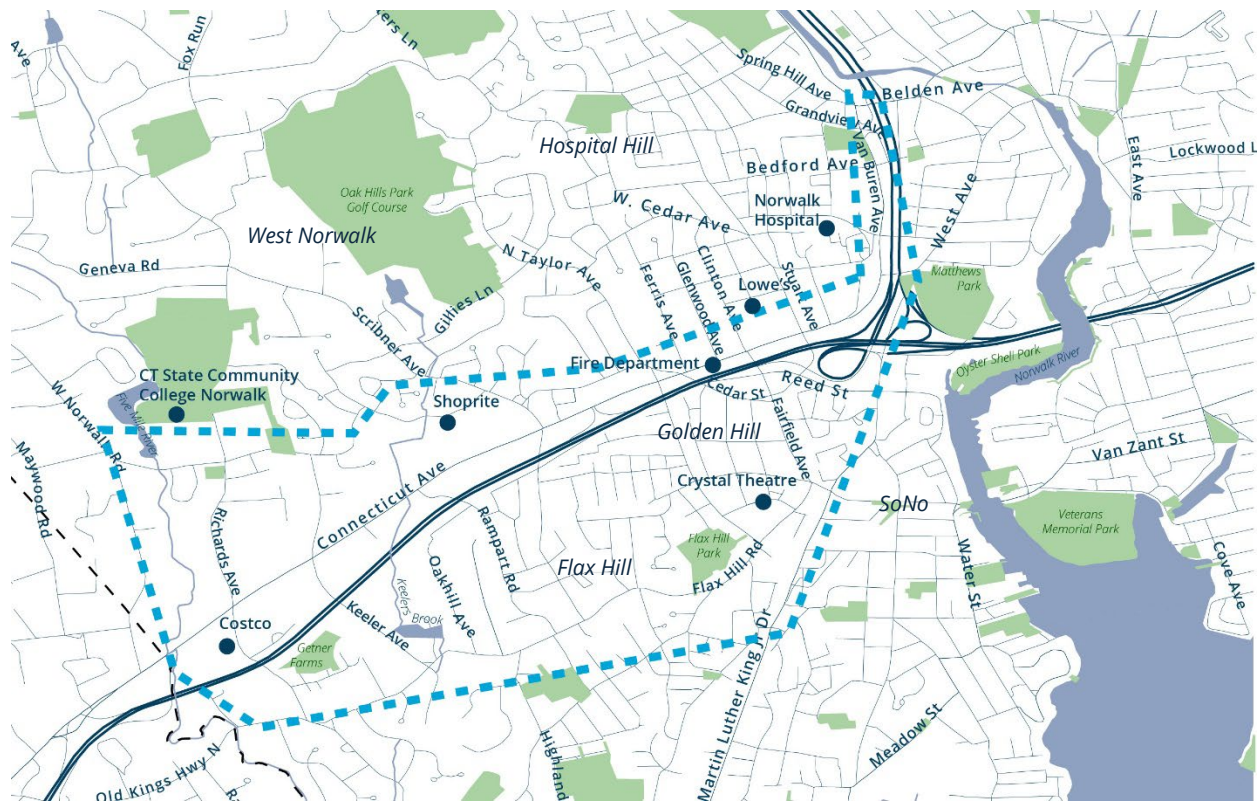
1. INTRODUCTION

The Norwalk Route 1 Corridor Master Plan Study for Connecticut Avenue & Van Buren Avenue aims to identify and evaluate the unique mobility and land-use conditions on the corridor and propose recommendations to improve transportation use, safety, and accessibility on short- and long-term solutions. The findings from this study will help implement a robust design framework and large-scale improvements for future land-use in the corridor. It will ultimately establish a better, more connected corridor for the community and broader region. This study is managed by the Western Connecticut Council of Governments (WestCOG) in coordination with the City of Norwalk.

This technical memorandum documents the findings of the first step in the study: the assessment of existing conditions on the corridors and in the study area. This memorandum summarizes the analysis of the transportation system and its role in serving both local and regional transportation demand, along with market, socioeconomic, and land use data.

Study Area Overview

Figure 1. Study Area



The study focuses on the 2.9-mile segment of US Route 1 (Connecticut Avenue & Van Buren Avenue) and parallel routes of Flax Hill Avenue and West Cedar Street in the City of Norwalk (see Figure 1). From the west, the corridor starts at the intersection with West Norwalk Road and continues northeasterly to the intersection of Riverside Avenue, Belden Avenue, and Spring Hill Avenue. The study area for analysis centers on the corridor and extends to the parallel running roads of Flax Hill Road, to the south, and West Cedar Street, to the north. For the majority of the study corridor, Route 1 is locally designated as Connecticut Avenue, becoming Van Buren Avenue when it reaches US Route 7 at the eastern end of the study corridor and extends north. The Connecticut Avenue portion of the study corridor, which travels roughly east-west, runs parallel to US Interstate 95 (Connecticut Turnpike); as the corridor bends to the north and becomes Van Buren Avenue, it runs parallel to US Route 7.

This portion of Route 1 is a principal arterial with two-lanes in each direction carrying roughly 20,000 average annual daily traffic (AADT) on the western portion and 13,000 AADT on the eastern portion. It connects to I-95 through direct access to ramps, is a major bus corridor, and is parallel to the vital Northeast rail corridor servicing destinations including New York City and New Haven. Route 1 is also a major commercial hub that hosts a variety of big box stores and essential public institutions like the Norwalk Hospital, CT State Community College Norwalk, and the Norwalk Fire Department. In addition to its importance as a major destination, the corridor borders Darien and therefore functions as a gateway to the City of Norwalk.

Vision & Goals

The vision and goals of the Norwalk Route 1 Corridor Master Plan Study were created in collaboration with the project advisory committee which is comprised of representatives from the City of Norwalk, WestCOG, Norwalk Transit District (NTD), and the Connecticut Department of Transportation (CTDOT).

Vision Statement

In partnership with residents, businesses, and government, Route 1 (Connecticut Ave/Van Buren Ave) in Norwalk will have a coordinated land use and transportation design that will deliver safety for all road users, connect communities to jobs and amenities, enhance quality of life, and create a vibrant gateway to Norwalk.

Study Goals

- Eliminate fatalities and serious injuries on the corridor.
- Provide convenient, accessible, and reliable connectivity for all modes.

- Remove barriers to jobs, education, and services for residents, workers, and visitors, regardless of mode.
- Create an attractive and pleasant gateway into Norwalk.
- Enhance opportunities for mixed-use, sustainable economic development within the study area.
- Develop implementable, meaningful solutions.

Planning Context

Prior planning documents have been examined for pertinent and relevant findings to this study area. This is because the study builds upon the conclusions of prior planning studies to understand the historical context and future vision for transportation in this corridor. Table 1 notes the similarities between the core documents.

Table 1. Prior Plans by Theme

Plans Reviewed	Safety Concerns	Congestion Concerns	Bike & Pedestrian Needs	Transit Priority Measures	Zoning Supporting Multimodal Transportation
Norwalk Transportation Master Plan	✓	✓	✓	✓	
Norwalk Plan of Conservation + Development		✓	✓		✓
WestCOG Metropolitan Transportation Plan	✓	✓	✓	✓	
Rt 1 BRT Feasibility Study & Coastal Corridor Study				✓	
New Zoning Regulations			✓		✓

Key takeaways for each document are shared below.

Norwalk Transportation Master Plan (2024)

This long-term improvement plan identifies six aspirational goals to bring transformational improvements to Norwalk's transportation network:

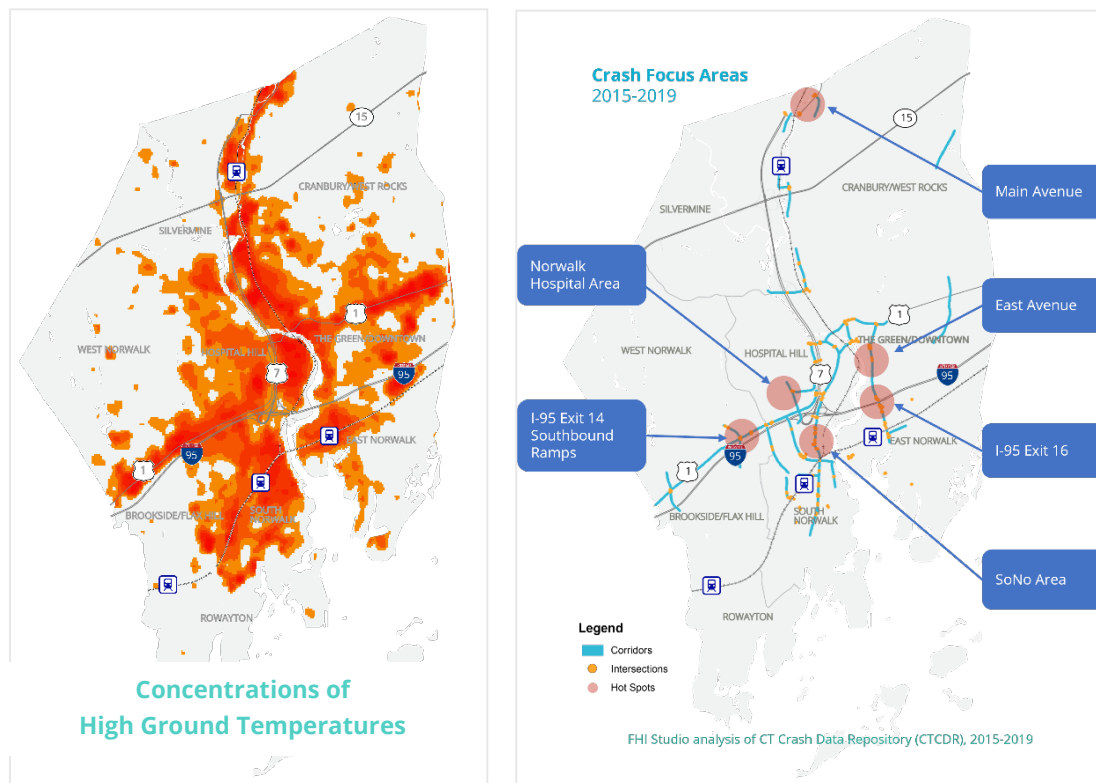
- Social Equity: Norwalk will eliminate existing and historical barriers to transportation access
- Safety: Norwalk expects to eliminate fatalities and serious injuries on all modes of travel by prioritizing people, safety, and quality of life over motor vehicle throughput and speed.
- Transportation Choice: Norwalk will be a 15-minute city, accessible completely by walking, bicycling, and/or transit.

- Resiliency: Norwalk will have a sustainable transportation network that prevents failures and mitigates unforeseen events.
- Environment: Norwalk will invest in and prioritize the design and construction of a carbon-neutral transportation system.

The plan identifies key issues and needs for the Connecticut Avenue/Van Buren Avenue corridor:

- Multiple high crash locations and traffic congestion along Connecticut Avenue (from the Norwalk line through Hospital Hill)
- Pedestrian accommodation and access to bus stops along Connecticut Avenue
- Transit Priority along Connecticut Avenue
- Red light running at Grandview Avenue at Van Buren Avenue
- High speed traffic along Flax Hill Road and West Cedar Street

Figure 2. Select Needs Identification from Norwalk Transportation Master Plan (2024)



Norwalk residents who participated in the study noted the following:

- Incomplete and inadequate sidewalks and crosswalks throughout the Route 1 corridor

- Incompatible timing of left turn traffic lights leading to traffic backups and drivers running red lights at the intersection of Grandview Avenue and Van Buren Avenue
- Need for sidewalks due to the high volumes of unmet pedestrian demand from schools, apartments, and places of worship along West Cedar Street
- Confusing intersections on Flax Hill Road causing safety concerns with driver behavior (speeding and not yielding to oncoming traffic) and pedestrian needs (incomplete crosswalks and incompatible timing of signs)

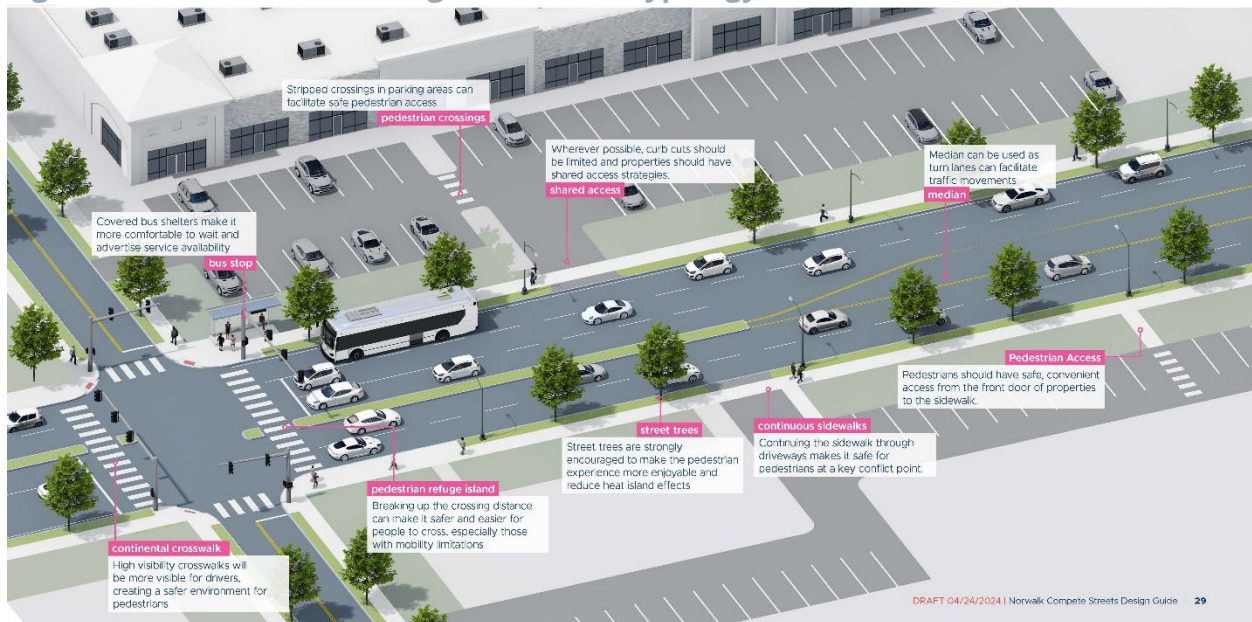
Plan of Conservation of Development (2019)

The Norwalk Plan of Conservation and Development 2019–2029 provides strategies to improve quality of life, spur economic development, and meet evolving needs related to placemaking, connectivity, and sustainability. Three pertinent recommendations were identified for the study area. The first is to create access management plans with property owners to alleviate traffic congestion and develop safe environments for non-single occupancy vehicle use on Route 1. The second is to add multimodal considerations into zoning and development plans to enhance transportation access along Route 1. The third is to establish a vision of a vibrant and economically thriving Norwalk that has a variety of housing options, open space, and safe connections through redevelopment and revitalization along major corridors, including Connecticut Avenue.

Norwalk Complete Streets Policy and Design Manual (2024)

The City of Norwalk is undertaking a process to facilitate building a network of complete streets through the development of two documents:

Figure 3. Commercial Thoroughfare Street Typology



- A *Complete Street Policy, Ordinance, and Integration Plan* will institutionalize and streamline the integration of complete streets elements into future municipal transportation planning and land use decisions. The ordinance will establish procedures for evaluating street projects to ensure that they meet the needs of all users. The integration plan will provide recommendations for the procedures of additional City departments which will be affected by the adoption of complete streets.
- A *Complete Streets Design Guide* will guide the design, construction, and implementation of the complete streets ordinance. The design guide will include recommended lane widths, pedestrian and bicycle infrastructure, stormwater management techniques, and other strategies for different types of roads. Figure 3 shows the vision for the commercial thoroughfare street typology which includes Route 1. The typologies incorporate context into the definition of form, function, and use of the City's streets for users of all modes. Context is derived from existing land use patterns but informed by City priorities including the recently adopted form-based zoning regulations, adopted by the City.

CTDOT Complete Streets Policy (2014)

The policy, adopted in 2014, establishes that CTDOT will consider the needs of all users of all ages, abilities, and using all modes. Objectives and procedures to implement complete streets are identified, including alignment of transportation funding to encourage improvements benefitting non-motorized users, formation of a standing Complete Streets Committee, and several additional action items.

CTDOT Complete Streets Controlling Design Criteria and Justification Process (2023)

This 2023 engineering directive establishes three new controlling design criteria and associated design guidance for pedestrian and bicycle facilities and transit provisions on applicable CTDOT projects. It establishes complete streets justification worksheets as well as the design criteria, as well as eight applicable design guidance documents, which include NACTO Urban Bikeway Design Guide as well as three FHWA Guides, five AASHTO Guides, and the CTDOT Highway Design Manual. Applicable CTDOT projects include: 1) CTDOT is the project proponent, 2) CTDOT administers the project, 3) CTDOT is responsible for project funding (state or federal aid). 4) CTDOT controls the affected infrastructure (state highway).

Norwalk Transit District (NTD) Comprehensive Operations Analysis (2025)

The Norwalk Transit District Comprehensive Operations Analysis (COA) will analyze the existing public transportation system and provide recommendations on how to meet the evolving needs of users and improve services. Analyses on existing bus routes will center on efficiency in terms of end-to-end running times, frequency, equity, equipment

optimization, schedule and planning, and station facilities. The COA will ultimately present short- and long-term solutions to optimize and expand the system in financially feasible ways.

2023-2050 WestCOG Metropolitan Transportation Plan (2023)

The 2023-2050 Metropolitan Transportation Plan is a guide to enhance the region's transportation system in a manner that upholds accessibility, safety, and reliability and enhances the economy and quality of life for residents.

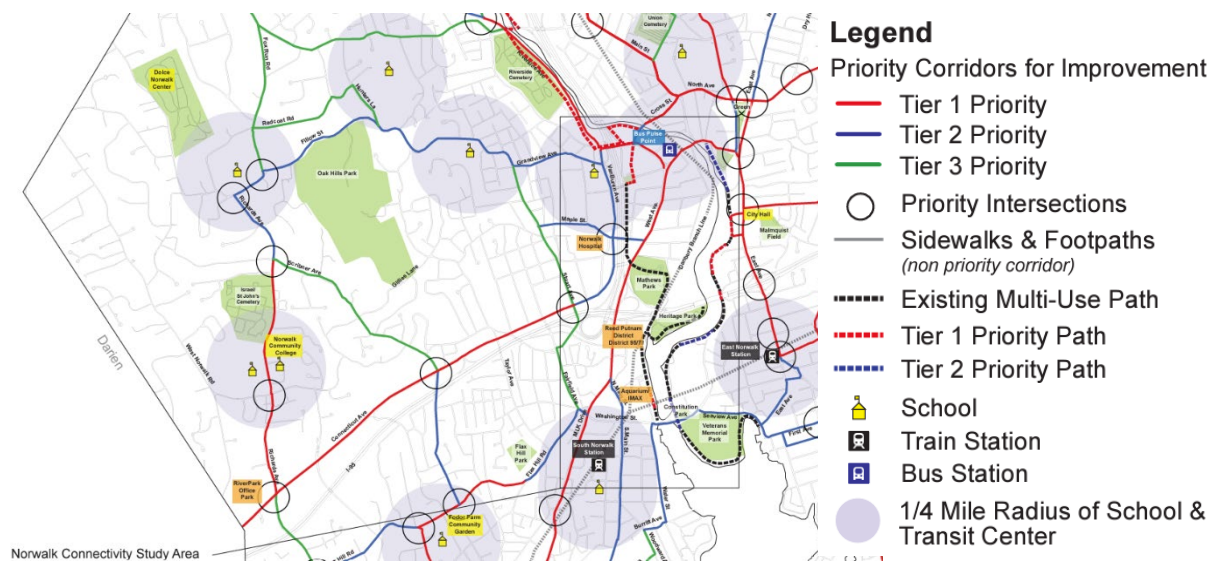
Recommendations include:

- Improving performance on Route 1 by upgrading outdated signal equipment for safety, coordinating signal timing to aid traffic flows, and installing Adaptive Traffic Signal Technology to manage congestion.
- Implementing Bus Rapid Transit service, creating new stations, and using new signal equipment on Route 1 from Port Chester to New Haven to enhance bus service.
- Developing strategies to address network gaps, strengthen multimodal connections, reduce congestion, and expand transit service to meet the needs of riders and the greater community.

2012 Norwalk Pedestrian and Bikeway Transportation Plan (2012)

This plan provides recommendations, analyses, and potential solutions to enhance biking and walking in corridors in Norwalk. Recommendations include improving alternative parallel routes to allow traffic to be diverted from dangerous high-volume corridors and meet unfulfilled travel needs to major destinations along the corridor. Strategies to execute this include filling in gaps and improving existing infrastructure in the pedestrian and bicycle system. The 2012 Pedestrian and Bicycle Plan identified portions of Route 1 near Exit 14/Scribner and west of Rampart as a Tier 1 Priority Path, and areas adjacent to Jefferson Elementary and Taylor Avenue to Stuart Avenue for sidewalks or footpaths on one side of the street.

Figure 4. Tier 1 Corridor Improvements



Route 1 Bus Rapid Transit Feasibility Study (2017)

The Route 1 Bus Rapid Transit (BRT) Feasibility Study provides an outline to introduce and achieve better bus service on the Route 1 corridor through application of BRT elements and compared five segments of Route 1 bus service between Port Chester (NY) and New Haven's Green. CTtransit Route 341 and 341A, which connect Stamford to Norwalk via Route 1, was considered the second best of five segments of Route 1 for BRT service; this evaluation was based on factors including run time savings, existing and potential future ridership, costs, and ease of implementation. A limited stop overlay BRT route was identified for each corridor, which incorporated transit signal priority (TSP), queue jumps, and passive priority to improve reliability, speed, and efficiency of bus service. These measures would increase ridership due to the more frequent service, lower end-to-end travel times, and faster boarding.

Coastal Corridor Bus Study (2012)

The Coastal Corridor Bus Study evaluates the bus services, customer characteristics, and transit demand along the Route 1 corridor to provide recommendations for enhanced bus operations and improved customer experience.

Recommendations related to routes in Norwalk for CT Transit 41, 41A, and 45 (Stamford to Norwalk and Norwalk Community College) and the Coastal Link (Norwalk to Milford) include:

- Placing the Coastal Link and Route 41 stops in closer proximity to each other to facilitate transfers between Coastal Link, CT Transit Route 41, and WHEELS system
- Increasing service frequency and shortening the route of the Coastal Link to reduce crowding, serve existing passenger demand, and improve on-time performance.

- Introducing a limited-stop service for the proposed shortened Coastal Link West route between Stamford and Bridgeport with increased service frequency.

WestCOG Regional Plan of Conservation and Development (2020)

The WestCOG Regional Plan of Conservation and Development (POCD) analyzes existing conditions throughout the region and articulates goals and policies under categories such as utilities, transportation, affordable transit-oriented housing, and economic development. Land use policies relevant to the study corridor include:

- Minimize the installation of impervious surfaces in new developments.
- Develop long-term strategies to reduce infiltration of stormwater into municipal sewage treatment plant systems.
- Encourage a mix of housing and commercial development as well as expand the supply of multi-family housing to ensure affordable housing for the region's workforce.
- Focus higher density development along major transit routes to support high-quality mass transit services.
- Encourage economic development along the region's two major interstate systems. (Connecticut Avenue runs parallel to US Interstate 95).

Additionally, the POCD notes that Norwalk Hospital on Van Buren Avenue is one of the largest regional employers, and CT State Community College Norwalk is also a major regional employer, underscoring the importance of this corridor on future regional labor and development trends.

2. DEMOGRAPHICS AND EQUITY

Population And Employment Statistics

Using American Community Survey (ACS) 2018-2022 five-year estimates, the following section summarizes the population and employment statistics within the Study.

Population data is shown in Table 2. The most represented age bracket within the study area is 35 to 64 years with 38% of the population, which is slightly lower than the city and the WestCOG planning region. The study area is comparatively densely populated as measured by residents per square mile - approximately 31.5% denser than the broader City of Norwalk and 79.9% denser than the WestCOG planning region. Race and ethnicity data is shown in Table 3. As compared to the City and Region, the study area has a greater proportion of non-white and Hispanic/ Latino residents.

Table 2. Population and Age Statistics for the Study Area

	Study Area ¹		City of Norwalk		WestCOG Planning Region ²	
	Number	Percent	Number	Percent	Number	Percent
Population						
Total Population	19,783		91,050		620,666	
Male	10,478	53.0%	45,680	50.2%	304,908	49.1%
Female	9,305	47.0%	45,370	49.8%	315,758	50.9%
Age						
Under 18 Years	4,027	20.4%	17,667	19.4%	138,162	22.3%
18 to 34 Years	4,790	24.2%	21,237	23.3%	124,599	20.1%
35 to 64 Years	7,510	38.0%	37,773	41.5%	257,240	41.4%
65 and Over	3,456	17.5%	14,373	15.8%	100,665	16.2%
Population Density (Per Sq. Mile)	5,803.5		3,978.4		1,166.4	
Sources: U.S. Census Bureau; Social Explorer Tables: ACS 2022 (5-Year Estimates) - ACS2022_5yr						

¹ Includes the following Census Tracts (CT) / Block Groups (BG): CT 431 / BGs 2,4; CT 432 / BG 1; CT 438 / BGs 3,4,5; CT: 439 / BGs 1,2,4; CT: 440 / BGs 1,2,3,4,5.

² Includes the following municipalities: Bethel, Bridgewater, Brookfield, Danbury, Darien, Greenwich, New Canaan, New Fairfield, New Milford, Newtown, Norwalk, Redding, Ridgefield, Sherman, Stamford, Weston, Westport, Wilton.

Table 3. Race and Ethnicity Statistics for the Study Area

	Study Area ³		City of Norwalk		WestCOG Planning Region ⁴	
	Number	Percent	Number	Percent	Number	Percent
Race						
Not Hispanic or Latino	11,367	61.1%	63,050	69.2%	495,782	79.9%
White alone	6,922	37.2%	40,678	44.7%	376,161	60.6%
Black or African American alone	2,266	12.2%	15,754	17.3%	59,464	9.6%
American Indian and Alaska Native alone	21	0.1%	27	0.0%	466	0.1%
Asian alone	1,400	7.5%	3,615	4.0%	32,149	5.2%
Native Hawaiian and Other Pacific Islander alone	0	0.0%	35	0.0%	187	0.0%
Some other race alone	14	0.1%	283	0.3%	4,717	0.8%
Two or more races	744	4.0%	2,658	2.9%	22,638	3.6%
Hispanic or Latino	7,229	38.9%	28,000	30.8%	124,884	20.1%
White alone	4,299	23.1%	9,350	10.3%	38,105	6.1%
Black or African American alone	177	1.0%	570	0.6%	2,847	0.5%
American Indian and Alaska Native alone	38	0.2%	267	0.3%	851	0.1%
Asian alone	45	0.2%	36	0.0%	160	0.0%
Native Hawaiian and Other Pacific Islander alone	0	0.0%	43	0.0%	154	0.0%
Some other race alone	1,300	7.0%	9,278	10.2%	44,954	7.2%
Two or more races	1,370	7.4%	8,456	9.3%	37,813	6.1%
Sources: U.S. Census Bureau; Social Explorer Tables: ACS 2022 (5-Year Estimates) - ACS2022_5yr						

³ Includes the following Census Tracts (CT) / Block Groups (BG): CT 431 / BGs 2,4; CT 432 / BG 1; CT 438 / BGs 3,4,5; CT: 439 / BGs 1,2,4; CT: 440 / BGs 1,2,3,4,5.

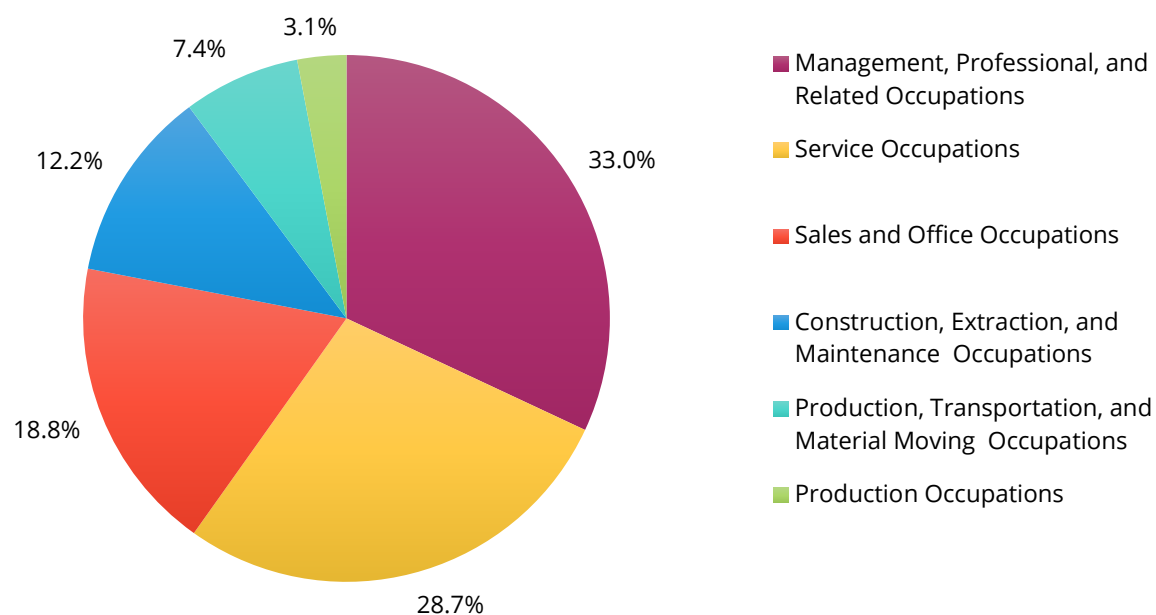
⁴ Includes the following municipalities: Bethel, Bridgewater, Brookfield, Danbury, Darien, Greenwich, New Canaan, New Fairfield, New Milford, Newtown, Norwalk, Redding, Ridgefield, Sherman, Stamford, Weston, Westport, Wilton.

Employment and income data is shown in Table 4. Approximately one-third of working-age residents (16 years and over) in the study area are not in the labor force, which may be due to retirement, full-time school, or care for dependents. This rate is slightly higher than the broader geographies, which may be due to the concentration of senior facilities and housing in the study area. The unemployment rate in the study area of 3.2% is slightly lower than Norwalk's 4.2% unemployment rate and the planning region's 3.8% rate.

Income levels in the study area are below those of the broader geographies. Within the study area, the median household income is \$79,096, compared with \$97,810 for Norwalk and \$118,805 for the region.

As shown in Figure 5, the most common occupations in the study area are management, professional, and related occupations, which may include lawyers, accountants, researchers, educators, and software developers.

Figure 5. Occupation for Employed Civilian Population 16 Years and Over in the Study Area



Sources: U.S. Census Bureau; Social Explorer Tables: ACS 2022 (5-Year Estimates) - ACS2022_5yr

Table 4. Employment and Income Statistics for the Study Area

	Study Area ⁵		City of Norwalk		WestCOG Planning Region ⁶	
Employment Status for Total Population 16 Years and Over						
	Number	Percent	Number	Percent	Number	Percent
Population 16 Years and Over:	16,433		75,401		499,627	
In Labor Force:	11,101	67.6%	53,288	70.7%	341,391	68.3%
In Armed Forces	0	0.0%	0	0.0%	218	0.0%
Civilian:	11,101	67.6%	53,288	70.7%	341,173	68.3%
Employed	10,582	64.4%	50,148	66.5%	322,043	64.5%
Unemployed	519	3.2%	3,140	4.2%	19,130	3.8%
Not in Labor Force	5,332	32.4%	22,113	29.3%	158,236	31.7%
Median Household Income (In 2022 Inflation Adjusted Dollars)						
Households:	7,393		35,272		230,507	
Less than \$25,000	1,144	15.5%	4,268	12.1%	23,251	10.1%
\$25,000 to \$49,999	1,093	14.8%	4,610	13.1%	26,725	11.6%
\$50,000 to \$74,999	1,287	17.4%	4,953	14.0%	25,731	11.2%
\$75,000 to \$99,999	846	11.4%	4,090	11.6%	22,681	9.8%
\$100,000 to \$149,000	1,074	15.6%	6,084	17.2%	37,669	16.3%
\$150,000 to \$199,000	527	7.6%	4,129	11.7%	25,675	11.1%
\$200,000 or More	833	12.1%	7,138	20.2%	68,775	29.8%
Median Household Income	\$79,096		\$97,810		\$118,805	
Average Household Income	\$113,680		\$144,892		\$200,941	
Per Capita Income	\$43,492		\$57,389		\$76,090	
Sources: U.S. Census Bureau; Social Explorer Tables: ACS 2022 (5-Year Estimates) - ACS2022_5yr						

⁵ Includes the following Census Tracts (CT) / Block Groups (BG): CT 431 / BGs 2,4; CT 432 / BG 1; CT 438 / BGs 3,4,5; CT: 439 / BGs 1,2,4; CT: 440 / BGs 1,2,3,4,5.

⁶ Includes the following municipalities: Bethel, Bridgewater, Brookfield, Danbury, Darien, Greenwich, New Canaan, New Fairfield, New Milford, Newtown, Norwalk, Redding, Ridgefield, Sherman, Stamford, Weston, Westport, Wilton.

Equity

Equity needs in the project study area were identified using Justice40, CTDEEP, and a local analysis.⁷ The local analysis used American Census Survey 5-year estimates (2021) to develop a comprehensive understanding of concentrations of populations of people with disabilities, limited English speakers (LEP), people 65 years or older, youth, minorities, and poverty (see Figure 6). The Block Groups with high equity needs are highlighted in yellow and have concentrations of people who are minorities, below poverty level, and with limited English proficiency.

In Hospital Hill, over half of the population has a disability. In southwestern Spring Hill north of Route 1, the population has the highest concentration of youth (over double the Norwalk average at 39%) and minorities (at 65-81% of the population). Justice40⁸ and CTDEEP identify these areas as disadvantaged communities due to socioeconomic factors such as unemployment, education attainment, minority populations, and low-income.

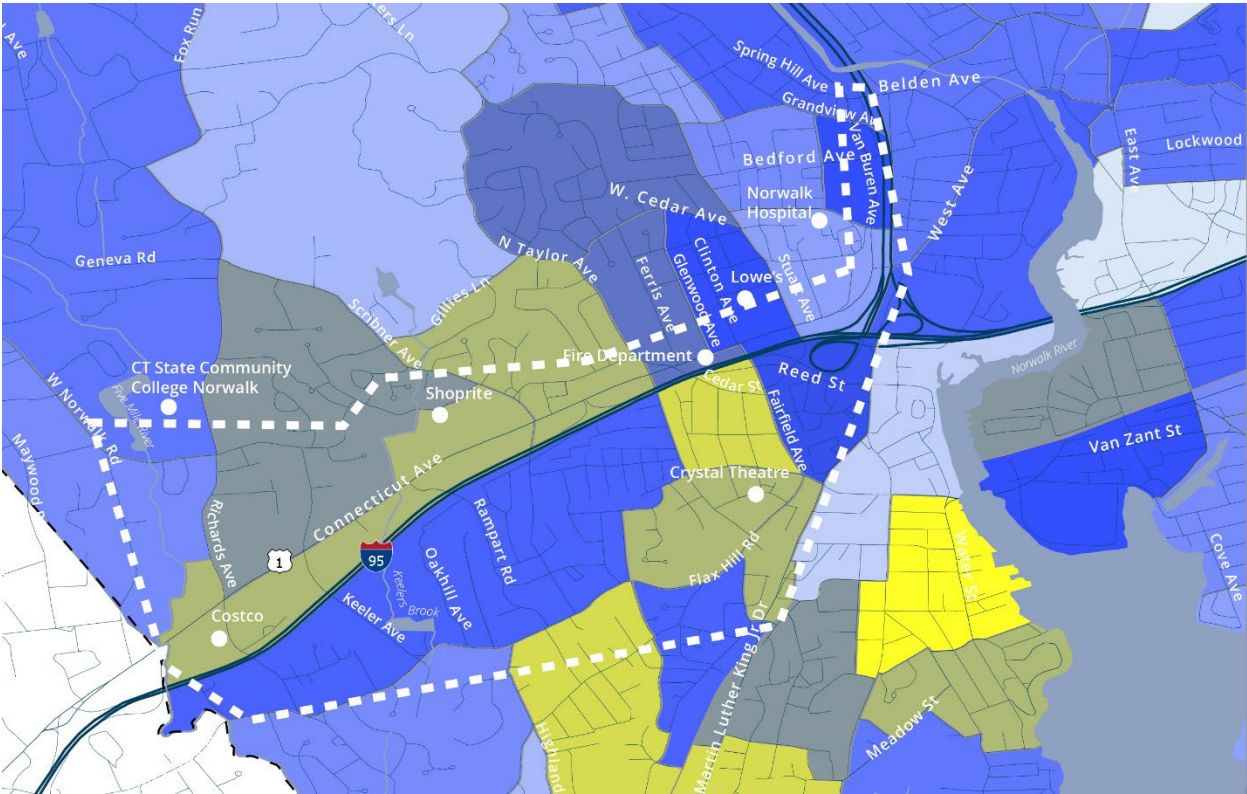
Golden Hill has the highest share of minority populations at 85% and a significant concentration of limited English proficiency at 31%. Adjacent to this area, in South Norwalk, there are also significant minority populations between 65-68% and low-income populations between 16-23%. Additionally, in Flax Hill, 19% of the adult population has a disability and 21% of the population has limited English proficiencies. Justice40 and CTDEEP identify areas in Golden Hill and Flax Hill as disadvantaged communities due to socioeconomic burdens (housing costs, low-income, minority populations, and linguistic isolation) and environmental factors (proximity to Superfund sites and affecting facilities). Local analysis confirms these communities as equity focus areas.

In West Norwalk, just north of Route 1, people 65 years or older make up a third of the population, nearly double the Norwalk average; this is likely due to the location of an assisted living facility within the mostly commercial area. This area also encompasses high concentrations of people with limited English proficiencies at 48% and has a significant minority population at 65%. Local analysis identifies this as an equity focus area.

⁷ Multiple tools were used to ensure all potential equity areas were recognized: Justice40 categories areas of environmental justice eligible for potential federal funding including public health factors such as local asthma rates; CTDEEP classifies environmental justice communities affected by factors such as unemployment, aging housing, and declining job creation; and local equity analysis identified races and ethnicities of populations that will be useful for meaningful engagement.

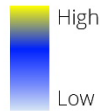
⁸ Justice40 is a federal program that aims to provide 40% of project investments towards disadvantaged communities. The criteria to identify these communities uses national standards for climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. <https://www.whitehouse.gov/environmentaljustice/justice40/>

Figure 6. Equity Assessment



Equity Analysis

Equity Need



Study Area

Demographic factors considered in the overall equity score: Minority, Poverty, Limited English Proficiency, Disabilities, Elderly, and Youth from United States Census Bureau: American Community Survey 5-Year Estimates (2021).

3. LAND USE AND DEVELOPMENT CONTEXT

Zoning

The newly adopted City of Norwalk Zoning Regulations, effective February 19, 2024, implement modern form-based zoning for the city's commercial, mixed-use, and multifamily areas. Community District CD-3C (General Urban - Corridor) lines either side of Connecticut Avenue (see Figure 7).

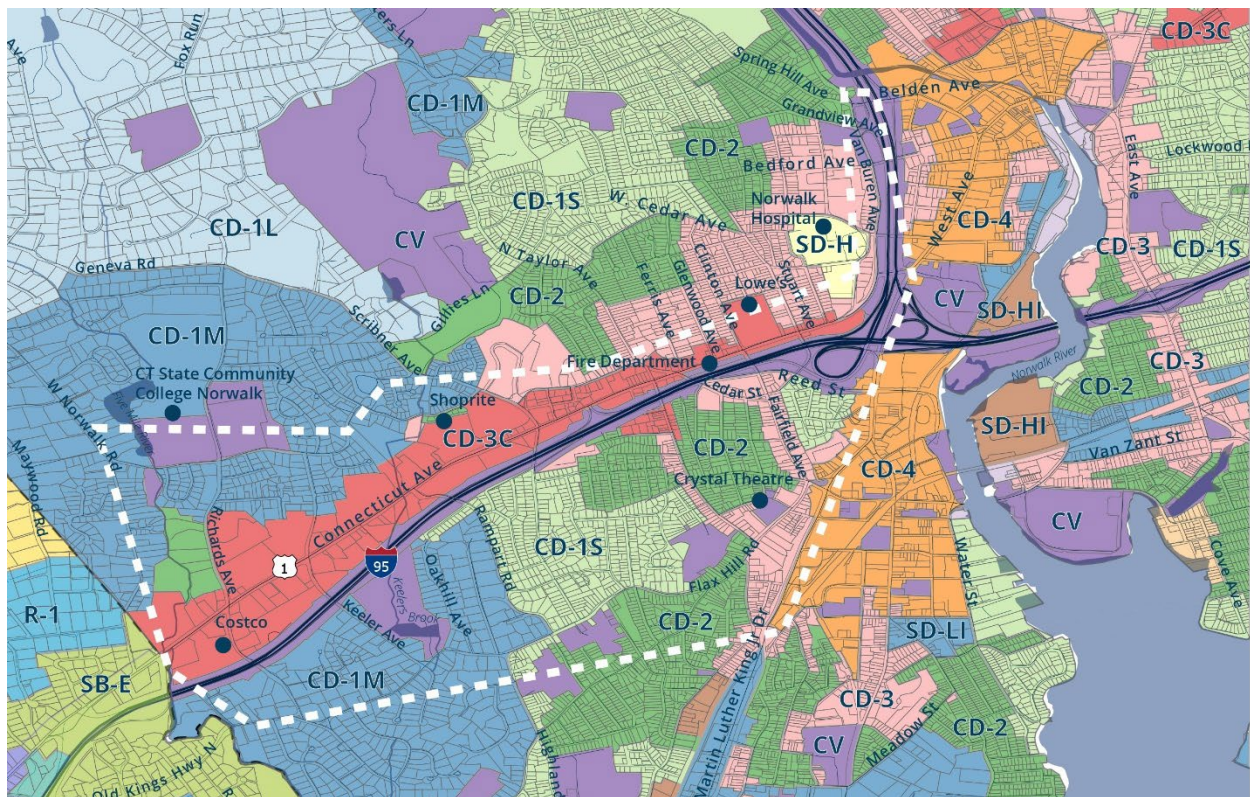
This mixed-use, medium density district aims to balance auto- and pedestrian-oriented environments and supports a mix of building types, as well as residential, lodging, office, commercial, civic, and institutional uses. Lot occupation standards require a 60-percent minimum frontage buildout and permit 80 to 90 percent impervious coverage. Principal buildings must be setback between 6 feet (minimum) and 12 feet (maximum) from the front lot line. The minimum rear setback is three feet (or 15 feet from center line of the rear alley, where applicable), and there are no side setback requirements. Building design standards include, for example, building orientation that must be parallel to frontage line; a minimum of ten percent total façade glazing (and 20 or 70 percent of the first story depending on the use); and a prohibition of corrugated/sheet metal, exposed concrete, aluminum or vinyl siding for principal building facades. Principal buildings must be between two and four stories.

As described below, there are numerous construction projects currently underway or recently completed. These projects include substantial commercial redevelopment, particularly in the western portion of the study area, as well as multifamily residential and mixed-use developments. These projects indicate development trends for the study corridor that include increased economic development, particularly the replacement of office buildings with retail plazas, as well as multifamily housing construction and residential and commercial density. In turn, these trends strengthen the corridor's regional economic significance for commerce/shopping and employment.

Additional zoning districts in the study area, which apply to the areas set back from Connecticut Avenue and Van Buren Avenue are:

- Community District CD-1M (Sub-Urban - Medium Lot)
- Community District CD-1S (Sub-Urban Single-Family)
- Community District CD-2 (Sub-Urban Single and Two-Family)
- Community District CD-3 (General Urban)
- Community District CD-3C (General Urban - Corridor)
- Special District – SD-H (Hospital)
- Civic District CV

Figure 7. Zoning



Zoning

	Study Area		CD-4 - Urban Center Community District
	CD-1L - Suburban Large Lot Community District		CD-4W - Urban Center - Water Community District
	CD-1M - Suburban Medium Lot Community District		CV - Civic District
	CD-1S - Suburban Small Lot Community District		SD-H - Hospital Special District
	CD-2 - Suburban Two-Family Community District		SD-HI - Heavy Industrial Special District
	CD-3 - General Urban Community District		SD-LI - Light Industrial Special District
	CD-3C - General Urban Community District		SD-MC - Marine Commercial Special District

The CD-1M district covers the single-family lower density residential areas in the western portion of the study area. The CD-1M district allows certain institutional uses, such as religious facilities, and retail uses with a special permit. The minimum lot size is 12,500 square feet and minimum width is 100 feet. The maximum permitted height is 2.5 stories or 40 feet from grade.

The CD-1S district to the east is similar to the CD-1M district in that it facilitates primarily single-family development, although with smaller lot sizes permitted, and it allows certain nonresidential uses with a special permit. The minimum lot size in the CD-1S district is

6,250 square feet with a minimum width of 50 feet. The maximum permitted height is 2.5 stories or 40 feet from grade.

The CD-2 district is distinguished as it permits single- and two-family detached homes, as well as a similar list of nonresidential special permit uses. The CD-2 district applies to the swath of multifamily and senior residences on Richard Avenue, as well as neighborhoods in the middle portion of the study area around Taylor Avenue. The minimum lot size is 5,000 square feet with a minimum width of 50 feet. The maximum permitted height is 2.5 stories or 40 feet from grade.

The CD-3 district covers mid-density residential areas in the eastern portion of the study area – including along North Taylor and Taylor Avenues, Stuart Avenue and Fairfield Avenue – and the area surrounding Norwalk Hospital to the west of Van Buren Avenue. Similar to the CD-3C district that lines the study corridor, the CD-3 district supports a medium-density mix of building types and residential, lodging, office, commercial, civic, and institutional uses. While buildings are subject to minimal setback requirements, the CD-3 district imposes certain façade design standards, for example, building entrance orientation and fenestration requirements. Certain building materials, including cementitious siding, corrugated or sheet metal, and exposed concrete, are prohibited. The maximum permitted height is 3.5 stories.

The SD-H district was designed specifically for Norwalk Hospital. This district aims to provide compatibility with the surrounding residential neighborhoods. Hospital facilities must be designed within the capacity of the necessary infrastructure. Other than the maximum permitted height of five to nine stories, minimal design standards are imposed.

The CV district applies to public utilities and publicly-owned properties that are generally dedicated to civic activities and are designed to stand apart from their surroundings due to the specialized nature of their civic purpose. Within the study area, the CV district applies to Norwalk Community College to the north of Connecticut Avenue; on the south side, the CV district applies to the CL&P Flax Hill Substation, Flax Hill Park, and the Crystal Theater performing arts venue. The setback requirements for principal buildings are equal to the setback requirements of the adjacent Community District; if the property is not located next to a Community District, there are no setback requirements. Sheet metal, exposed concrete, and aluminum or vinyl siding are prohibited as building façade materials. The maximum permitted height is 20 feet above any adjacent Community District.

Subdivision Regulations

The City of Norwalk Subdivision and Resubdivision Regulations were adopted in 1949 and periodically updated through 2012. The regulations require that natural features, such as water courses and scenic vistas, are conserved to the maximum extent feasible. Applicants must also demonstrate that passive solar energy techniques have been considered in the

subdivision design. Provisions must be made for utility connections, including stormwater, electric, water, and sewage. Street trees are required on the frontage of all newly created lots. Whenever a cul-de-sac street is adjacent to a tract to be subdivided, the subdivision plat must provide for the continuation of the cul-de-sac within the adjacent tract. Subdivisions require preliminary review by the Subdivision Committee and implicated City departments, followed by a public hearing and approval by the Planning Commission.

Land Uses and Development Trends

Land uses in the study area are depicted in Figure 8. Connecticut Avenue is generally lined with regional, highway-style commercial uses, including “big box” and department stores – such as Home Depot, HomeGoods, Kohl’s, and Costco Wholesale – drive-through fast-food and fast casual restaurants, and large parking lots situated between the roadway and stores. The area is an active vehicular corridor that is substantially developed, has multiple redevelopment sites, and limited vacancies.

River Park office complex, a 403,000-square foot, multistory office complex, located at the intersection of Connecticut Avenue and West Norwalk Road, stands out for its apparent underutilization and high vacancy rate, which may be reflective of decreasing demand for traditional office space.

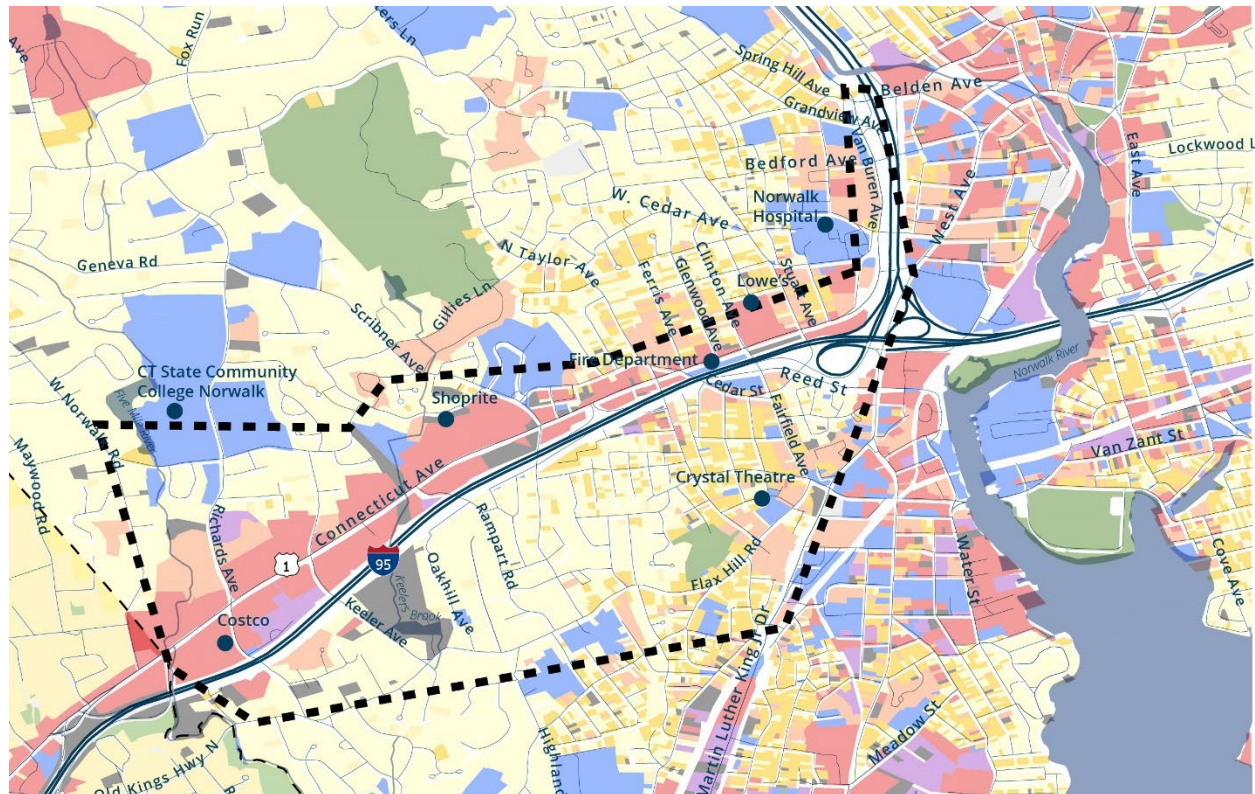
Across the street, a Costco expansion project is currently underway that demolished the adjacent DoubleTree hotel to expand the crowded Costco parking lot and add a separate tire center. Just east of Costco and Richards Avenue, another redevelopment project is underway to construct a new 91,600-square foot Wegmans supermarket, parking garage, and two additional retail buildings (8,800 ± square feet and 8,125 ± square feet). This development replaces a former 110,070±-SF office building. Opposite the Wegmans site, work is in progress to convert the former Walmart into a Target store.

A wide electric-tower utility corridor crosses Connecticut Avenue at Rampart Street connecting to Connecticut Light and Power’s (CL&P) Flax Hill Substation south of Connecticut Avenue; the substation is located off Flax Hill Road between Keeler Avenue and Oakhill Avenue, approximately 700 feet south of I-95.

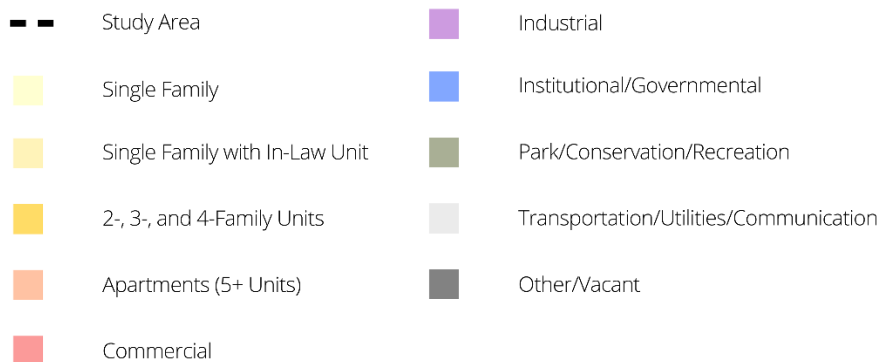
Around the intersection of Connecticut Avenue and West Cedar Street/ Cedar Street, the land use character integrates some smaller scale, local-oriented uses, such as delicatessens, hair salons, and pharmacies. On West Cedar Street, just east of Scribner Avenue, a concentration of Hispanic/Latino and Caribbean retail and convenience stores reflects the growing percentage of ethnic-minority residents. Nearby institutional uses include the Norwalk Community Health Center and the LEED-Gold certified Norwalk Fire Department Station 2 and Fire Marshal’s Office on Connecticut Avenue. At the intersection with Stuart Avenue, a new multifamily residential development, Overlook Norwalk, was recently constructed in 2023 and includes three stories of 33 apartment units, including

four affordable housing units, and one story of parking. Adjacent to the Overlook apartments, construction has begun for a two-story 5,500-square foot commercial building that will house a new cannabis dispensary with a drive-through.

Figure 8. Land Use



Land Use Overview



On the following page are photos. Clockwise from Top Right Conversion of Walmart to Target at Connecticut Avenue Near Richards Avenue; Overlook Apartments at Connecticut Avenue; Smaller Scale Commercial at Connecticut Avenue and Woodbury Avenue; Norwalk Hospital from Van Buren Avenue at Maple Street; Utility Corridor at Connecticut Avenue Near Rampart Road; Costco Expansion at Connecticut Avenue Near Richards Avenue (Source: AKRF)



Continuing east, the corridor continues to integrate more mixed uses, such as ground-floor retail shops with upper-floor residences, and older commercial uses which tend to be closer to the road with smaller parking lots.

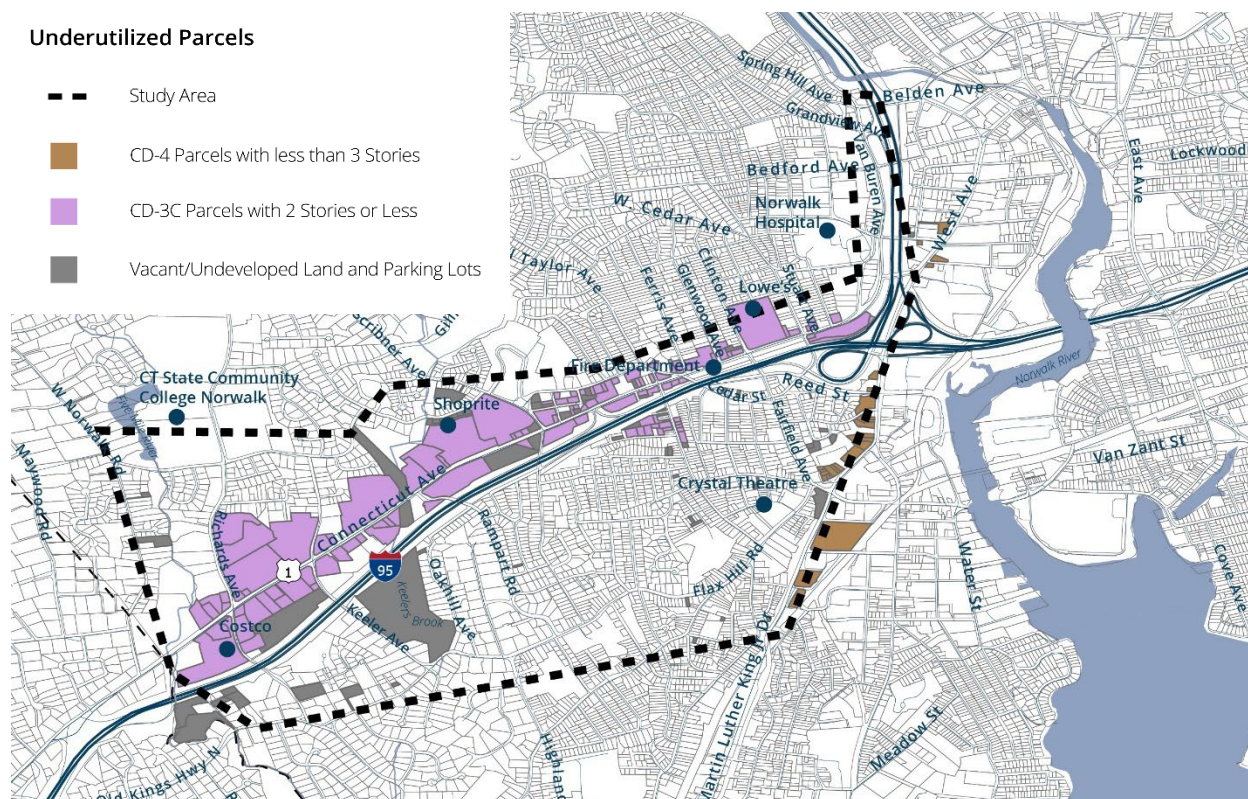
As the corridor becomes Van Buren Avenue and curves north, it is bordered by undeveloped greenery (vacant land) that lines and buffers US Route 7, which runs parallel to Van Buren Avenue. Norwalk Hospital is located just west of Van Buren Avenue at the intersection with Maple Street. Construction is underway for a hospital expansion that will include a new 191,000-square foot patient pavilion. Uses along Van Buren Avenue to the north include a strip of multifamily residences followed by Jefferson Science Elementary School, which has entrances from the side streets. Jefferson Elementary is a magnet school that services an average of 600 students per year. North of the school, at the intersection of Van Buren Avenue with Spring Hill and Belden Avenues, there is an overflow parking lot for the school across from another lot used for truck parking.

The large retail plazas anchored by big box and grocery stores on Connecticut Avenue, along with the hospital and magnet elementary school on Van Buren Avenue, contribute to the study corridor's regional significance. Based on existing conditions, major trip generators along the study corridor include (west to east):

- Connecticut State Community College Norwalk (Norwalk Community College) – Richards Avenue at West Cedar Street
- Costco Wholesale – Connecticut Avenue at Richards Avenue
- Home Depot – Connecticut Avenue at Keller Avenue
- Kohl's Shopping Plaza – Connecticut Avenue at Rampart Road
- ShopRite Shopping Plaza – Connecticut Avenue between Rampart Road and Scribner Avenue
- Best Buy Shopping Plaza – Connecticut Avenue at Scribner Avenue
- Lowes – Connecticut Avenue at Clinton Avenue
- Norwalk Hospital – Connecticut Avenue and Van Buren Avenue transition area
- Jefferson Marine Science Elementary School (during morning drop-off and afternoon pick-up) – Van Buren Avenue at Bedford Avenue

There are very few, if any, vacant developable properties along the study corridor. However, the majority of commercial properties on Connecticut Avenue are below the maximum intensity permitted by zoning regulations, indicating the potential for further mixed-use development within the study corridor. As shown in Figure 9, almost all of the buildings along Connecticut Avenue are two stories in height, where the zoning regulations permit up to three stories. (See *Zoning* section for further discussion of applicable zoning regulations.)

Figure 9. Parcels with Further Development Capacity



As described further above, numerous redevelopment and expansion projects are underway along the study corridor. Based on these projects, anticipated major trip generators along the study corridor will include (west to east):

- Costco Wholesale Expansion – Connecticut Avenue at Richards Avenue
- Target Shopping Plaza (former Walmart location) – Connecticut Avenue at Richards Avenue
- Wegmans Shopping Plaza Redevelopment – Connecticut Avenue at Richards Avenue
- Norwalk Hospital Expansion – Connecticut Avenue and Van Buren Avenue transition area

Setback from the Connecticut Avenue shopping corridor, the land use character is predominantly well-maintained residential with limited institutional and commercial uses and occasional light industrial spaces. Most of the larger single-family properties are located in the western portion of the study area, generally laid out in single-entrance residential enclaves, loops, and cul-de-sacs. Density increases to the east, including smaller lots and multifamily homes. East of North Taylor and Taylor Avenues, the majority of residences are two- to four- family homes and low-rise apartments, with the highest concentration near the study corridor and larger intersecting roadways, including West Cedar Street, Cedar Street, Ferris Avenue, and Stuart Avenue.

North along Richards Avenue, past the future Target site, are a series of upscale townhouse and low-rise apartments and condominium developments with curated landscaping, followed by a senior care facility, Bridges by EPOCH. On the neighboring property, ten townhouse senior residences were constructed in 2023, with thirteen new senior residences recently approved in 2024. Across Richards Avenue is a light industrial property, and to the north is a cemetery. Norwalk Community College straddles Richards Avenue on the northern side of West Cedar Street.

To the east, residential density gradually increases, particularly near West Cedar Street. Colonial Village, a public housing complex operated by Norwalk Housing Authority (NHA), is located on West Cedar Street at Scribner Avenue. The recent expansion of Colonial Village added 69 dwelling units, for a total of 269 units across 27 buildings, and included a 5,400-square-foot community center for the Colonial Village Learning Center, which provides K-12 educational support. Adjacent to Colonial Village, construction is underway for Oak Grove, a US Housing and Urban Development (HUD) project, that will add 69 units of affordable housing and new NHA-managed Learning Center. To the south on West Cedar Street, a new mixed-use development was recently approved to construct a 3.5-story and a 2-story building and add 14 new residences.

On the south side of Connecticut Avenue, the residential pattern follows a similar pattern as the northern side, with larger properties and looping enclaves between the western study area boundary and Rampart Road. Fodor Farm, a community gardens, ⁹[\[OBJ\]](#) on the Connecticut State Register of Historic Places.

The predominantly residential character continues in the areas west of Van Buren Avenue. Near Norwalk Hospital and Jefferson Elementary School, the residences are comparatively denser than the rest of the study area with a prevalence of mid-rise apartment buildings

Multi-Family Building on Richards Avenue (Source: AKRF)



⁹ A property is considered “contributing” if it “adds to the district’s sense of time, place, and historical development.”

and condominiums. Located on Elmcrest Terrace, the Luther M. Wright House was constructed circa 1875 and is listed as a National Historic Landmark.

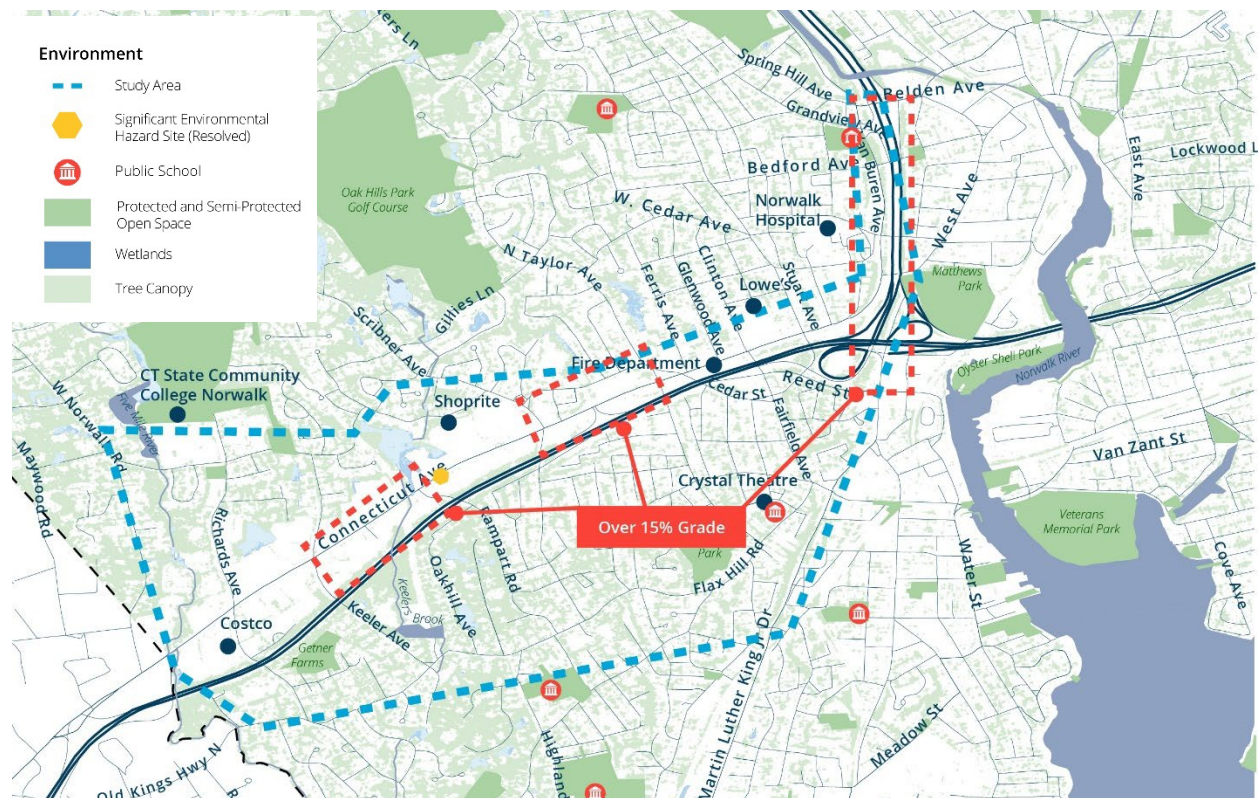
Utilities

The study area is connected to municipal utility systems that provide energy (electric/gas), domestic water, and sanitary wastewater (sewage). Electric service is provided through Eversource Energy (Connecticut Light and Power) and South Norwalk Electric and Water. Wastewater from the study area is treated at the Norwalk Wastewater Treatment Facility, part of the city's sanitary sewer system is managed by the Water Pollution Control Authority for the City of Norwalk. The treatment facility has a design capacity of 18 million gallons per day (MGD) and a peak hydraulic flow of 30 MGD through full treatment. Flows above 30 MGD are directed through wet weather treatment through which the facility can handle up to 95 MGD.

4. ENVIRONMENTAL

A review of environmental, cultural, and historic resources was conducted to consider the implications of significant roadway construction and reconstruction that may be proposed through this study's recommendations. There is one CTDEEP-defined hazardous site within the study area as indicated on Figure 10.

Figure 10. Cultural, Environmental, and Community Resources



The site, 104 Connecticut Avenue, is resolved, “signifying that a hazard condition has been abated to permanently eliminate exposure to contamination that exceeds the significant environmental hazard notification threshold or that such contamination no longer exists”¹⁰. Areas of 100-year and 500-year floodplains only exist within the study area in the immediate vicinity of Keelers Brook and Five Mile River, south of Route 1 proximate to the I-95 underpasses (and are not mapped).

Jefferson Elementary School is a key cultural resource along Route 1, and there are no buildings or districts identified on the National Register of Historic Places. While protected and semi-protected open spaces abound in Norwalk, none abut Route 1. Notably,

¹⁰ CT Department of Energy and Environmental Protection. Significant Environmental Hazards. Accessed October 22, 2024. <https://portal.ct.gov/deep/remediation--site-clean-up/significant-environmental-hazard-program/significant-environmental-hazards>

Norwalk's neighborhoods north and south of the corridor have a consistent tree canopy but Route 1 has few trees contributing the high surface temperatures on the corridor (as previously identified through the Transportation Master Plan. Steep slopes (above 15% grade) are concentrated along the bluffs between I-95 and Route 1, especially approaching Van Buren Avenue, Exit 14 ramps from I-95 that have significant grading impacting safety alternatives, and between Rampart Road and Keeler Avenue that have no pedestrian facilities due to environmental constraints. These steep slopes occur on the land adjacent to the road and impact design improvements.

5. TRANSPORTATION AND SAFETY

Roadway Network

The existing roadway network in the study area supports a major commercial district while also playing an integral role in the broader transportation ecosystem. It links employment sites and major commercial districts with the neighborhoods surrounding the roadway, and also provides a connection to the center of Norwalk. Route 1's classification, geometry, and travel demand as measured by key performance indicators are detailed in the subsequent sections. Roadway classification and geometric details for the parallel Flax Hill Road and W. Cedar Street are provided in **Appendix A**.

Roadway Classifications

Roadways are classified based on the function they provide to the traveling public for transportation planning purposes. The functional classification system groups facilities into three categories – arterials, collectors, and local streets. Arterials often support the Interstate system and are intended to form the trunkline of a road network. Collectors are major and minor roadways that connect local streets with arterials. Local streets generally provide primary access to residential areas, businesses, and other local areas. It should be noted that the functional classification system is generally designed to classify vehicular traffic and does not consider how vulnerable road users, such as pedestrians and cyclists, may use a roadway. Street typologies are a local alternative to functional class which are based on the needs for all roadway users, the desired use, and reflect the context in which they reside.

Within the study area, Connecticut Avenue and Van Buren Avenue are classified as a principal urban arterial. Within the draft Norwalk Complete Streets Design Guide's typologies, they are both classified as Commercial Thoroughfares.

Roadway Characteristics - Geometry

US Route 1 is a principal arterial that travels north to south, and is a major connector of the East Coast. In the study area, it is a 2.9-mile corridor with two lanes that provides east to west access across southern Norwalk along a major commercial corridor and is also known as Connecticut Avenue and Van Buren Avenue (Figure 11). The entire length of the study area is in the National Highway System. Along the corridor, there are primarily commercial use buildings and land use such as shopping plazas and individual retail store fronts with parking lots and intermittent sidewalks along both sides of the road.

Connecticut Avenue

From the Norwalk City line to Van Buren Avenue, Connecticut Avenue (U.S. Route 1) is an eastbound/westbound principal urban arterial with two travel lanes in each direction. A

dedicated left turn lane is provided at most of the signalized and unsignalized intersections along the corridor. In addition, a dedicated right turn lane is provided at some of the signalized intersections providing access to the various shopping centers along the corridor. A typical cross section is presented in the image below.



Typical Connecticut Avenue (U.S. Route 1) Cross Section (Source: AKRF)

From the Norwalk City Line to the I-95 Interchange 14 Ramps, the posted speed limit of Connecticut Avenue is 35 miles per hour. East of the I-95 Interchange 14 Ramps, the posted speed limit on Connecticut Avenue is reduced to 30 miles per hour.

The typical curb-to-curb right of way of Connecticut Avenue ranges from approximately 55 feet (five lanes of traffic) to approximately 70 feet (six lanes of traffic). The curb to curb right of way of Connecticut Avenue expands to as much as approximately 80 feet (seven lanes of traffic) between Scribner Avenue and the Stop and Shop Driveway.

Although sidewalks are provided along most of Connecticut Avenue, sidewalks are missing along the following roadway segments or properties:

- Elmcrest Terrace and Van Buren Avenue (northern side)
- Price Avenue to Scribner Avenue (northern side)

- Rampart Road to 496 Connecticut Avenue (Wendy's; northern side)
- Kohl's Driveway to west of Rampart Road (southern side)
- 565-575 Connecticut Avenue (southern side)
- 789 Connecticut Avenue (southern side)

There is no on-street parking provided along either side of Connecticut Avenue, and the corridor is designated as a Snow Emergency Route by the City of Norwalk. All U.S. routes are maintained by the Connecticut Department of Transportation (CTDOT).

Route 1, first constructed in 1963 was last improved in 2017. The roadway is made up of asphalt-concrete overlay which is generally in good condition with minimal faulting or cracking.

Van Buren Avenue

From Connecticut Avenue to Belden Avenue, Van Buren Avenue (U.S. Route 1) is a northbound/southbound principal urban arterial with two travel lanes in each direction. Dedicated turn lanes are provided at the Van Buren Avenue intersections with Grandview Avenue/Route 7 Interchange 1 Ramps and Belden Avenue/Spring Hill Avenue, dedicated turn lanes are not provided along the corridor. A typical cross section is presented in the image below.

The posted speed limit of Van Buren Avenue is 30 miles per hour. The typical curb-to-curb right of way along Van Buren Avenue is approximately 40 feet (four lanes of traffic). The curb-to-curb right of way expands to approximately 50 feet (five lanes of traffic) north of Grandview Avenue.

Sidewalks are provided along the western side of Van Buren Avenue. There are no sidewalks along the eastern side of Van Buren Avenue from Connecticut Avenue to Belden Avenue.



Typical Van Buren Avenue (U.S. Route 1) Cross Section (Source AKRF)

There is no on-street parking along either side of Van Buren Avenue, and the corridor is designated as a Snow Emergency Route by the City of Norwalk. All U.S. routes are maintained by the CTDOT.

Geometric Design Considerations

In addition to funding, the functional classification system dictates typical geometric design criteria. As indicated in 5, a built-up principal urban arterial such as U.S. Route 1 would require at a minimum - 10-foot-wide travel lanes, 11-foot-wide turn lanes, and a minimum 5-foot-wide sidewalk, among other design features. Currently there are portions of the roadway network which lack sidewalks, creating safety issues for pedestrians and transit users.

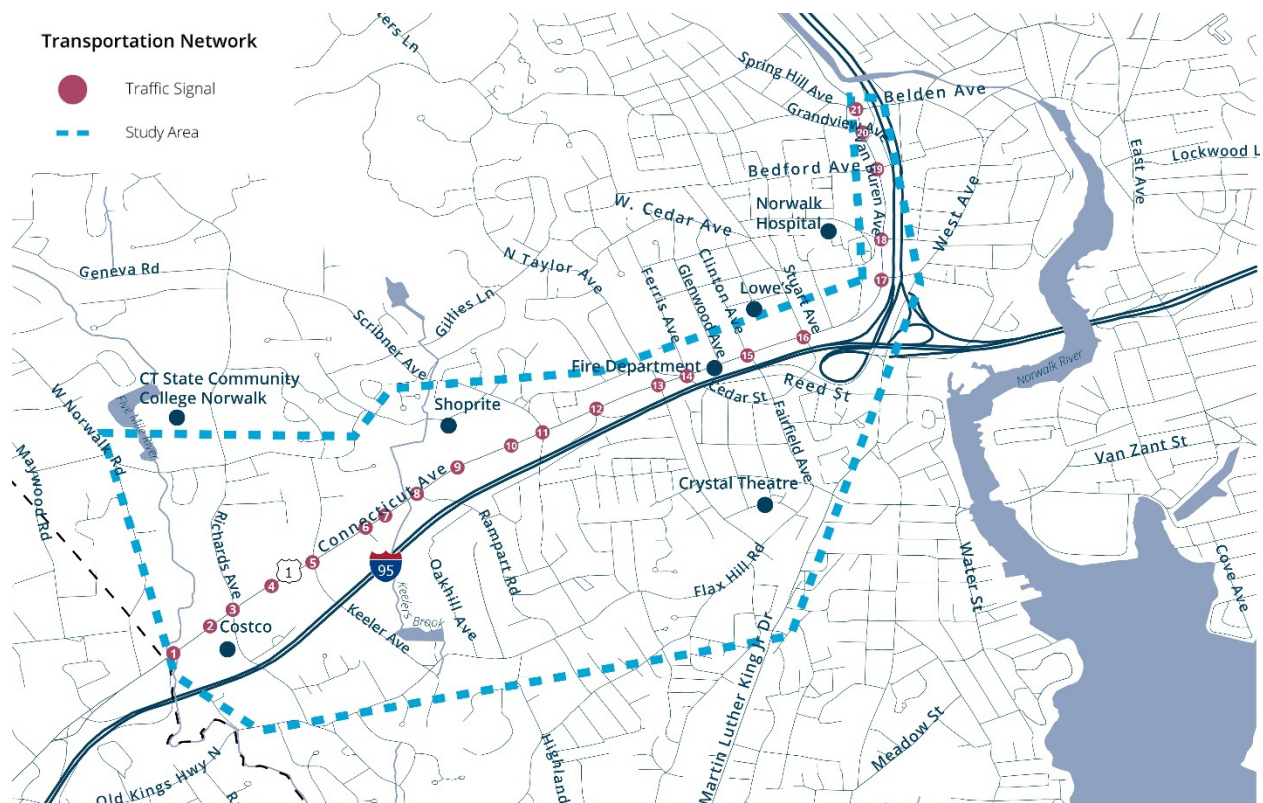
It should be noted that, in September 2023, CTDOT implemented new Complete Streets design criteria, expanding on CTDOT's Complete Streets Policy and mandating that every project focus on pedestrian and bicyclist facilities and public transportation operations to create stronger intermodal transportation networks and improve safety.

Table 5. Multi-Lane Principal Urban Arterials (3R Projects)

Multi-Lane Principal Urban Arterials (3R Projects)				
Design Element		Design Values (by Type of Area)		
		Suburban	Intermediate	Built-Up
Travel Lane Width		11' – 12'	11' – 12'	10' – 12'
Turn Lanes	Lane Width	1' less than travel lane width – same as travel lane		
	Shoulder Width	1' – 4'	1' – 4'	1' – 4'
Shoulder Width (Right)	NHS	4' – 8'	4' – 8'	4' – 8'
Shoulder Width (Left)	NHS	2' – 4'	2' – 4'	2' – 4'
Sidewalk Width		5' Minimum	5' Minimum	5' Minimum
Parking Lane Width		N/A	N/A	10' – 11'

Source: CTDOT Highway Design Manual 2003 Edition (Including Revisions to October 2024)

Figure 11. Roadway Network



Study Area Traffic Signals	
1	Exit 13 EB /Connecticut Ave
2	Costco Driveway
3	Richards Ave/Connecticut Ave
4	Walmart Driveway/Connecticut Ave
5	Keeler Ave/Connecticut Ave
6	PetSmart Driveway/Connecticut Ave
7	Kohl's Driveway/Connecticut Ave
8	Rampart Rd/Connecticut Ave
9	ShopRite Driveway/Connecticut Ave
10	T.J. Maxx/Connecticut Ave
11	Scribner Ave/Connecticut Ave
12	I-95 Ramps at Connecticut Ave Exit 14
13	Taylor Ave/Connecticut Ave
14	Cedar St/W. Cedar St/Ferris Ave/Connecticut Ave
15	Fairfield Ave/Clinton Ave/Connecticut Ave
16	Stuart Ave/Connecticut Ave
17	Van Buren Ave/Connecticut Ave
18	Maple St/Connecticut Ave
19	Bedford Ave/Connecticut Ave
20	Grandview Ave/Connecticut Ave
21	Spring Hill Ave/Riverside Ave/Belden Ave/Van Buren Ave

Roadway Characteristics – Signal Infrastructure

As noted in Figure 11, there are 21 traffic signals along the 2.9-mile corridor. Traffic signals along Connecticut Avenue/U.S. Route 1 are owned, operated and maintained by CTDOT and traffic signals along Van Buren Avenue are owned, operated and maintained by the City of Norwalk. All traffic signals were operational at the time of inventory and in generally good or fair condition. The signals have been revised or newly constructed within approximately the past 10 years. All but one of the study area intersections are span wire installations, many of which do not provide the desired far side signal heads for optimal visibility for drivers. All signals have either loop or video detection for semi actuation or full actuation (i.e. detection of vehicles from all approaches to the intersection) and are coordinated with one another via a closed loop system. All signals currently include preemption for emergency vehicles for one or more phases.

Roadway Characteristics – Stopping Sight Distance

Stopping sight distance (SSD) is the sum of the distance traveled during a driver's perception/reaction time and the distance traveled while decelerating to a stop. Because of gravitational forces, downgrades require greater distances for braking and upgrades

require lesser distances. The required stopping sight distance design for Route 1 within the study area varies from 200 to 250 feet for areas with a speed limit of 30 mph and 35 mph, respectively.

Existing Travel Demand

Traffic data was collected to establish existing multimodal travel demand in the study area. The sections below describe Turning Movement Counts, queues, signal timing, vehicle delay, and origin-destination data.

Turning Movement Counts (TMC)

Peak hour Turning Movement Count (TMC) data were collected for the following key intersections in the study area:

- U.S. Route 1 (Post Road) at West Norwalk Road
- U.S. Route 1 (Post Road) at I-95 Northbound Exit 13 Off-Ramp
- U.S. Route 1 (Connecticut Avenue) at Richards Avenue
- U.S. Route 1 (Connecticut Avenue) at Walmart Driveway
- U.S. Route 1 (Connecticut Avenue) at Keeler Avenue
- U.S. Route 1 (Connecticut Avenue) at Rampart Road
- U.S. Route 1 (Connecticut Avenue) at Shop Rite Driveway
- U.S. Route 1 (Connecticut Avenue) at Scribner Avenue
- U.S. Route 1 (Connecticut Avenue) at I-95 Southbound Exit 14 Ramps
- U.S. Route 1 (Connecticut Avenue) at Taylor Avenue
- U.S. Route 1 (Connecticut Avenue) at Cedar Street / Ferris Avenue
- U.S. Route 1 (Connecticut Avenue) at Fairfield Avenue and Clinton Avenue
- U.S. Route 1 (Connecticut Avenue) at Stuart Avenue
- U.S. Route 1 (Connecticut Avenue) at Van Buren Avenue (U.S. Route 1)
- U.S. Route 1 (Van Buren Avenue) at Maple Street
- U.S. Route 1 (Van Buren Avenue) at Grandview Avenue / Southbound US-7 Exit 1 Ramps
- U.S. Route 1 (Van Buren Avenue) / Riverside Avenue at U.S. Route 1 (Belden Avenue) / Spring Hill Avenue

The data included vehicle, bicycle, and pedestrian volume counts and vehicle classification counts. Traffic data was collected by WestCOG during April 2024 and May 2024, and supplemented with historical (2021-2023) traffic data provided by the City of Norwalk.

Based on the data collected, the vehicular traffic peak hours for the study area were determined to be:

- 7:45 AM to 8:45 AM for the weekday AM peak hour
- 1:00 PM to 2:00 PM for the weekday Midday peak hour
- 5:00 PM to 6:00 PM for the weekday PM peak hour
- 12:30 PM to 1:30 PM for the Saturday Midday peak hour

Peak hour traffic volumes are presented in **Appendix B**. Peak hour traffic volumes noted a mix in passenger car, bus, and truck use along the roadway network. A maximum of 40 pedestrians and bicyclists were observed during the peak hours at any of the study intersections.

Queues

The total delay for a vehicle along a route is a combination of control delay, representing the time waiting at traffic control devices such as stop signs and traffic signals, and queue delay to account for the effects of queues blocking on short links and turning bays. The 95th percentile queue is typically considered the reasonable worst-case queue to occur with only a 5 percent probability of being exceeded. It is typically used as the design standard for turning lane lengths and storage lengths between intersections to ensure spillback to adjacent intersections is unlikely to occur.

During free flow conditions (total delay less than 35 seconds) all cars queued for the approach are anticipated to clear within the allotted green time. However, as delays increase individual cycle failures where one or more vehicles are unable to clear the intersection and must wait through two or more cycles becomes more frequent. Once congested conditions (greater than 55 seconds of total delay) are reached, most queues fail to clear the intersection within one cycle of the traffic light. Approaches that are located where queuing impedes turning movements can contribute to violation of traffic laws, abrupt stops and increased crash potential and degraded intersection operations. The following approaches were observed to have notable queue lengths that also contributed to cycle failures where vehicles frequently waited for more than one cycle to clear the intersection:

- The southbound shared through/right-turn movement from at Van Buren Avenue and Grandview Avenue with a 95th percentile queue of approximately 300 feet to 350 feet during the weekday AM and PM peak hour.
- The eastbound shared through/right-turn movement of US Route 1 at the intersection of US Route 1 and Rampart Road during both the weekday PM and Saturday midday peak hours where 95th percentile queues exceed 400 feet.
- The eastbound shared through/right-turn movement of US Route 1 at the intersection of US Route 1 and Richards Avenue during both the weekday PM and Saturday midday peak hours where 95th percentile queues exceed 400 feet.

- The southbound shared through/right-turn movement during all peak hours at the intersection of US Route 1 and Scribner Avenue where the 95th percentile queue ranges from approximately 230 feet to 430 feet with moderate to congested operating conditions.
- The westbound left-turn movement during the weekday PM peak hour at the intersection of US Route 1 and Scribner Avenue where queues extend approximately 300 feet with congested operating conditions.
- The westbound shared through/right-turn movement during all peak hours at the intersection of US Route 1 and Scribner Avenue where queues extend approximately 350 feet to 670 feet with moderate to congested operating conditions.
- The northbound Taylor Avenue approach during the weekday AM and PM peak hours at the intersection of US Route 1 and Taylor Avenue with a queue of approximately 200 to 340 feet and congested operating conditions.
- The westbound shared through/right-turn movement during the weekday midday peak hour with a 95th percentile queue of approximately 285 feet with moderate congested operating conditions.

Signal Timing

The existing traffic signals along US Route 1 are operating with a range of cycle lengths from 75 to 105 seconds. The cycle length is the time allocated to provide green time to all movements at an intersection. Generally, low cycle lengths reduce pedestrian wait time as well as side street delay but can contribute to poor progression along a primary corridor with frequent stops and long queues. Short cycle lengths also have a greater proportion of “wasted time” or “lost time” where much of the allotted cycle length is used to transition from one direction of traffic to another. Many of the signals along US Route 1 have a full eight phases of traffic contributing to substantial lost time. Finally, the current cycle length is not long enough to provide for the amount of time a pedestrian needs to cross US Route 1. As such, the signals become out of step with one another when a pedestrian button is activated along the corridor, further contributing to stop and go traffic.

Vehicle Delay

Traffic operating conditions at each study intersection were analyzed using the Synchro 11 software to compute delays, volume-to-capacity (v/c) ratios, and approach queues. These metrics determine a general LOS which assigns a letter grade of A through F based on the Highway Capacity Manual (HCM) methodology provided in **Appendix C**.

While this Corridor Plan aims to improve traffic progression, traffic safety and better accommodate pedestrians, bicyclists, and transit, it does not aim to improve vehicular LOS but to balance the needs of all transportation modes throughout the study area (that is,

vehicles, transit, pedestrians, and cyclists). Corridor operations were evaluated by three categories of delay – free flow with limited to no congestion (less than 35 seconds of average vehicle delay), moderate flow (between 35 seconds and 55 seconds of average vehicle delay) and congested (greater than 55 seconds of average vehicle delay). LOS results and Synchro outputs are provided in **Appendix C**.

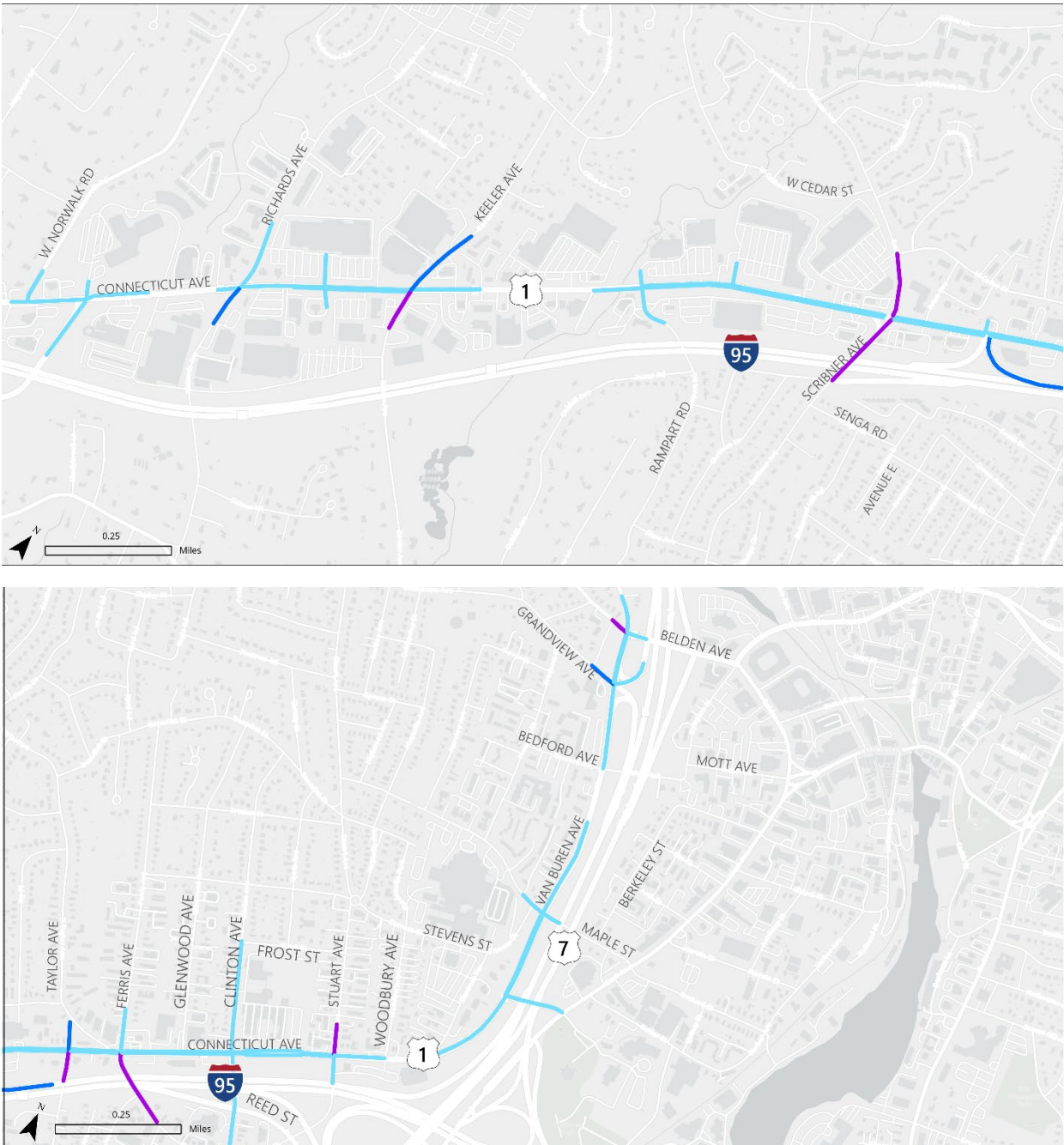
As shown in Figure 12 through Figure 15, the majority of the lanes and approaches currently operate at free flow to moderate flow conditions during the peak hours analyzed, with the exception of the following lanes considered to be congested during at least one of the peak hours analyzed:

- The southbound West Norwalk Road approach during the Saturday midday peak hour at the intersection of West Norwalk Road and US Route 1.
- The eastbound left-turn and westbound left-turn movement during the weekday AM peak hour as well as the southbound left-turn movement during the Saturday midday peak hour.
- The southbound shared left-turn/through movement during the weekday midday, PM and Saturday midday peak hours at the intersection of the Target and Liquidators driveways and US Route 1.
- The northbound Keeler Avenue shared through/right-turn movement during the weekday AM and Saturday midday peak hours at the intersection of Keeler Avenue and US Route 1 as well as the westbound left-turn during the weekday AM peak hour and the eastbound left-turn during the Saturday midday peak hour.
- The southbound left-turn movement during the weekday PM and Saturday midday peak hours at the intersection of the Shoprite driveway and US Route 1.
- The northbound and southbound shared through/right-turn movements and the westbound left-turn movement during the weekday AM, PM and Saturday midday peak hours as well as the eastbound left-turn movement during the weekday midday peak hour, northbound left-turn movement during the Saturday midday peak hour at the intersection of Scribner Avenue and US Route 1.
- The southbound shared left-turn/through movement at the intersection of the Interstate 95 (Exit 14) Ramps and US Route 1 during the weekday midday peak hour.
- The northbound Taylor Avenue approach during the weekday AM and PM peak hours at the intersection of Taylor Avenue and US Route 1.
- The northbound Cedar Street left-turn movement during the weekday AM, PM and Saturday midday peak hours at the intersection of Cedar Street and US Route 1.
- The southbound approach during the weekday AM and PM peak hours at the intersection of Stuart Avenue and US Route 1.
- The eastbound shared left-turn/through movement during the weekday AM and PM peak hours as well as the westbound left-turn movement during the Saturday

midday peak hour at the intersection of Van Buren Avenue with Riverside Avenue, Spring Hill Avenue and Belden Avenue.

While most approaches along US Route 1 operate at free flow to moderate flow conditions indicating the roadway capacity is generally sufficient, the frequency of traffic signals and the short cycle lengths discussed above create “stop and go” traffic flow along the stretch of US Route 1 which increases the time it takes to travel along the corridor. Furthermore, movements to and from US Route 1 have more substantial delays and are near capacity during the peak hours analyzed resulting in cycle failures for these movements and needing to wait through more than one cycle of the traffic light in order to make the desired movement.

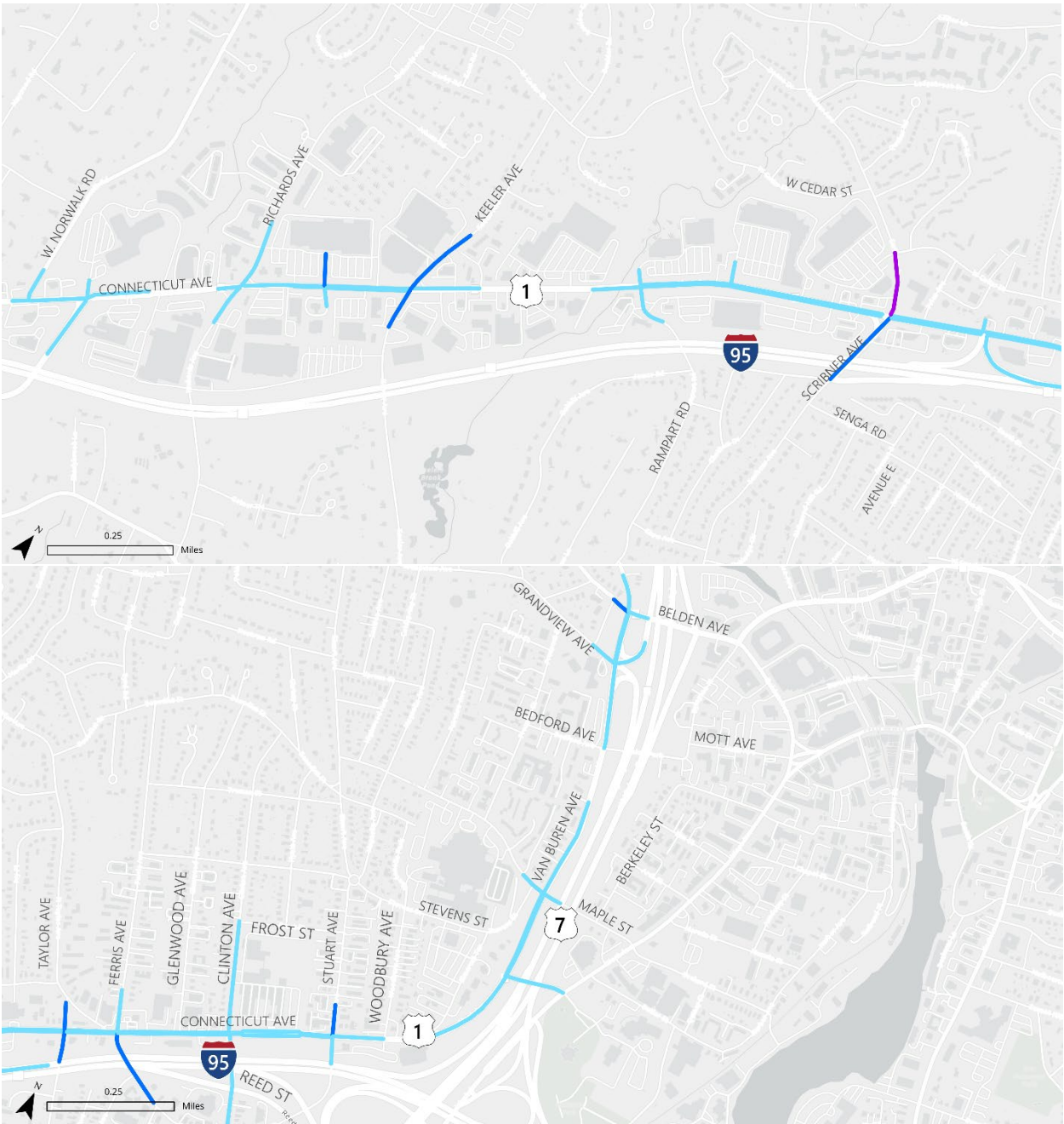
Figure 12. Approach Delay - Existing AM Peak Hour



Approach Delay

- < 35 seconds
- > 35 and < 55 seconds
- > 55 seconds

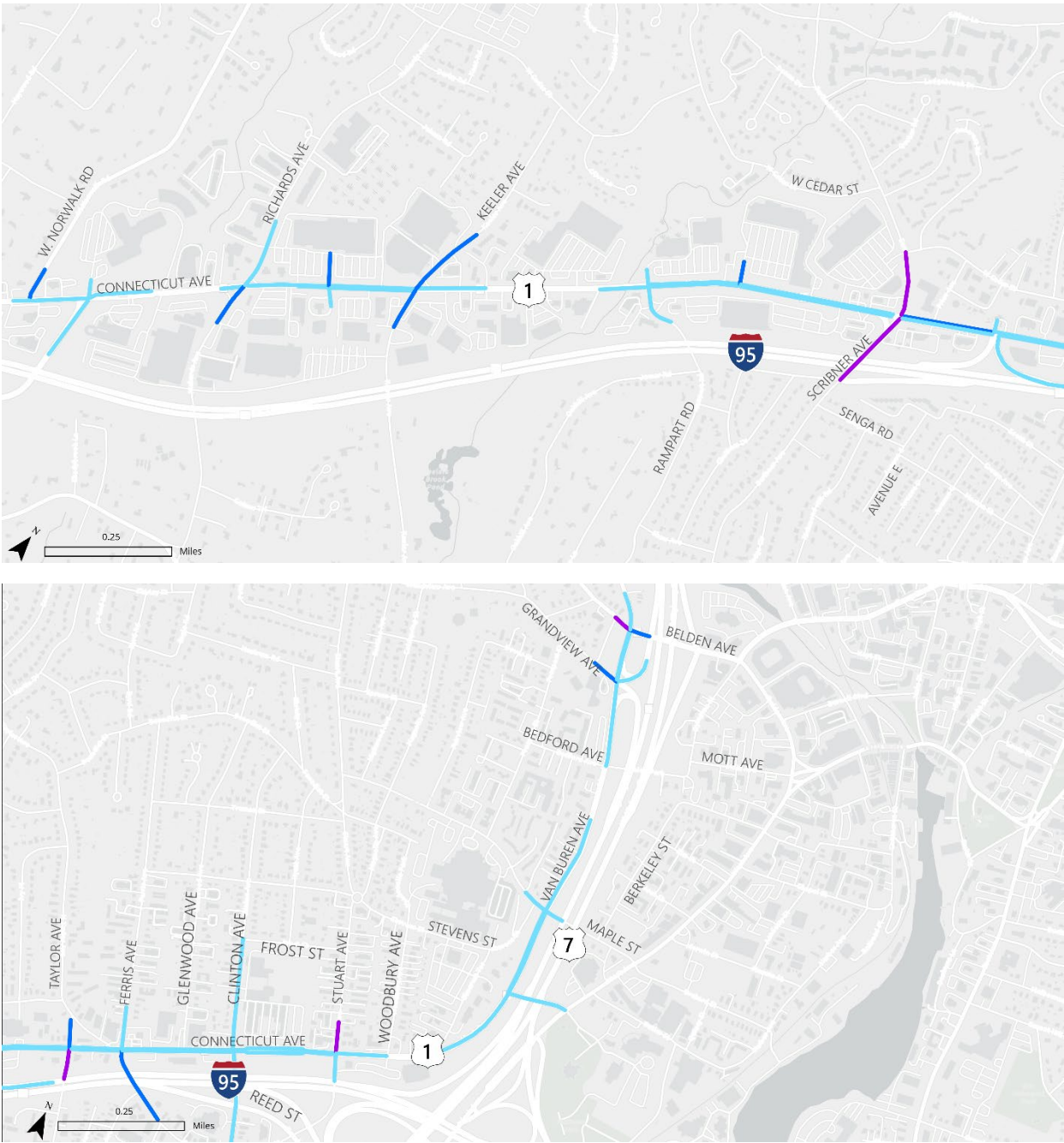
Figure 13. Approach Delay - Existing Mid-Day Peak Hour



Approach Delay

- < 35 seconds
- > 35 and < 55 seconds
- > 55 seconds

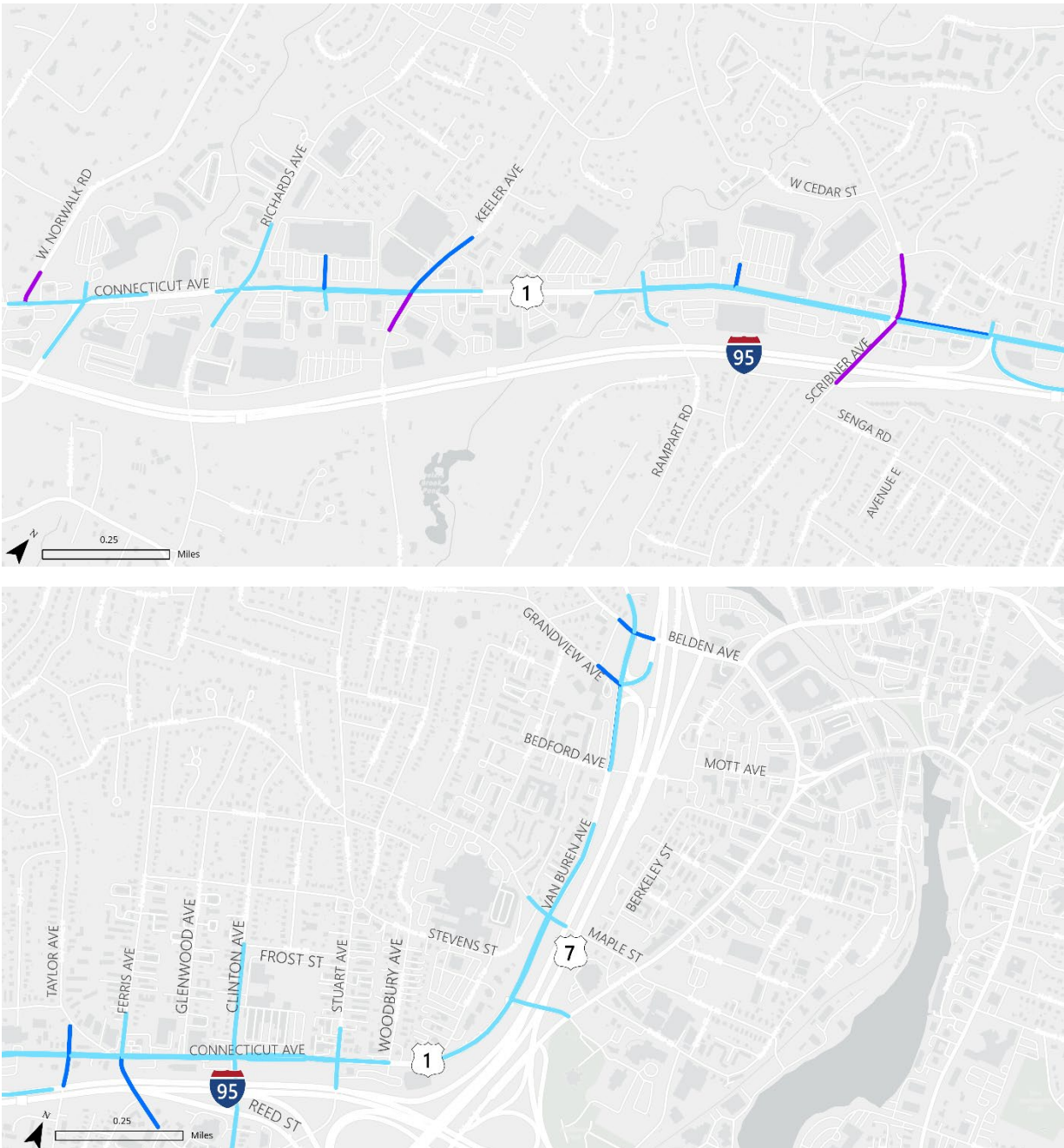
Figure 14. Approach Delay - Existing PM Peak Hour



Approach Delay

- < 35 seconds
- > 35 and < 55 seconds
- > 55 seconds

Figure 15. Approach Delay - Existing Saturday Peak Hour



Approach Delay

- < 35 seconds
- > 35 and < 55 seconds
- > 55 seconds

Origin-Destination Analysis

An origin-destination analysis was conducted for the study area using Streetlight data, which compiles big data from mobile devices for transportation planning. The findings reiterate the regional importance of this stretch of Route 1; although most corridor users reside and work within Fairfield County, a small portion have home locations within New York City, Long Island, and northern New Jersey as well as northern Connecticut (Figure 16). The majority of the road users live and work in Norwalk, while a smaller number of its users are from Stamford, with other nearby municipalities like New Canaan, Darien, and Bridgeport also represented. Trip characteristics vary along the corridor, so it was analyzed in two segments: west of the I-95 SB Exit 14 ramps, and east of the ramps.

Figure 16. Home Locations of Route 1 Users

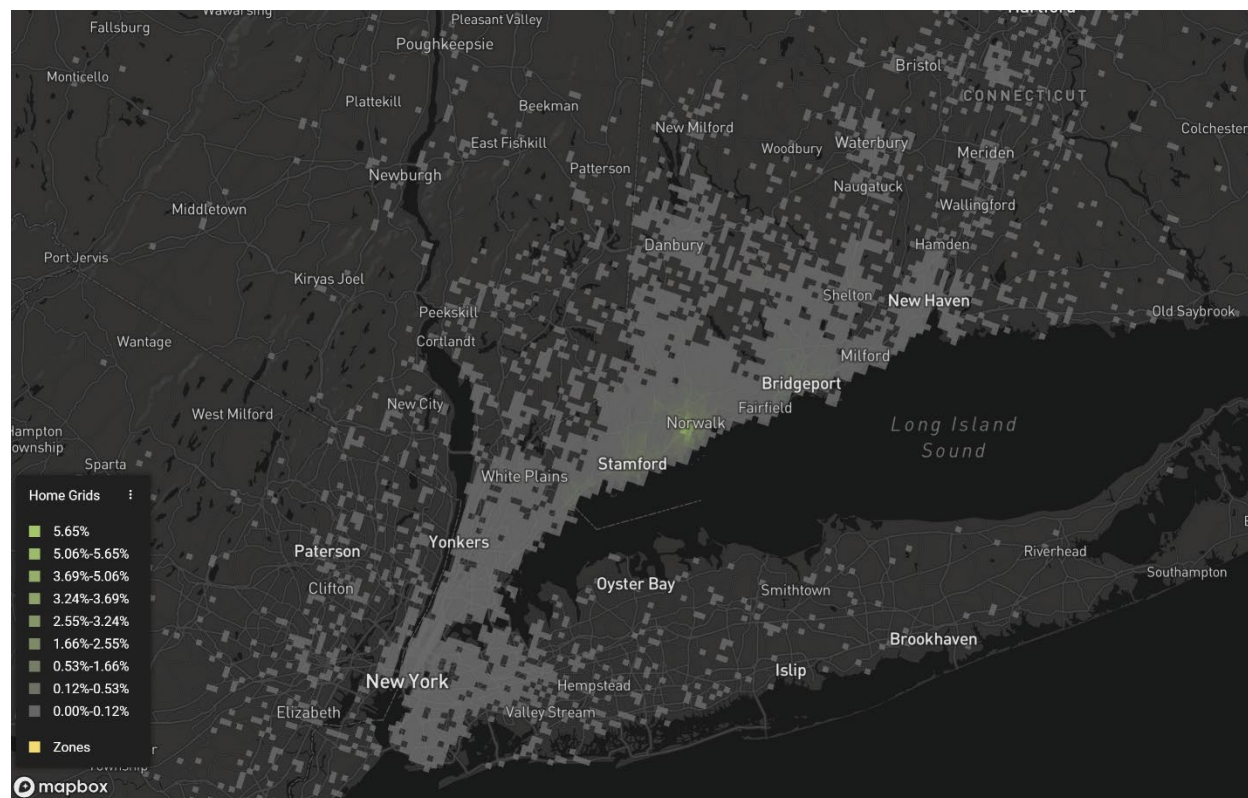
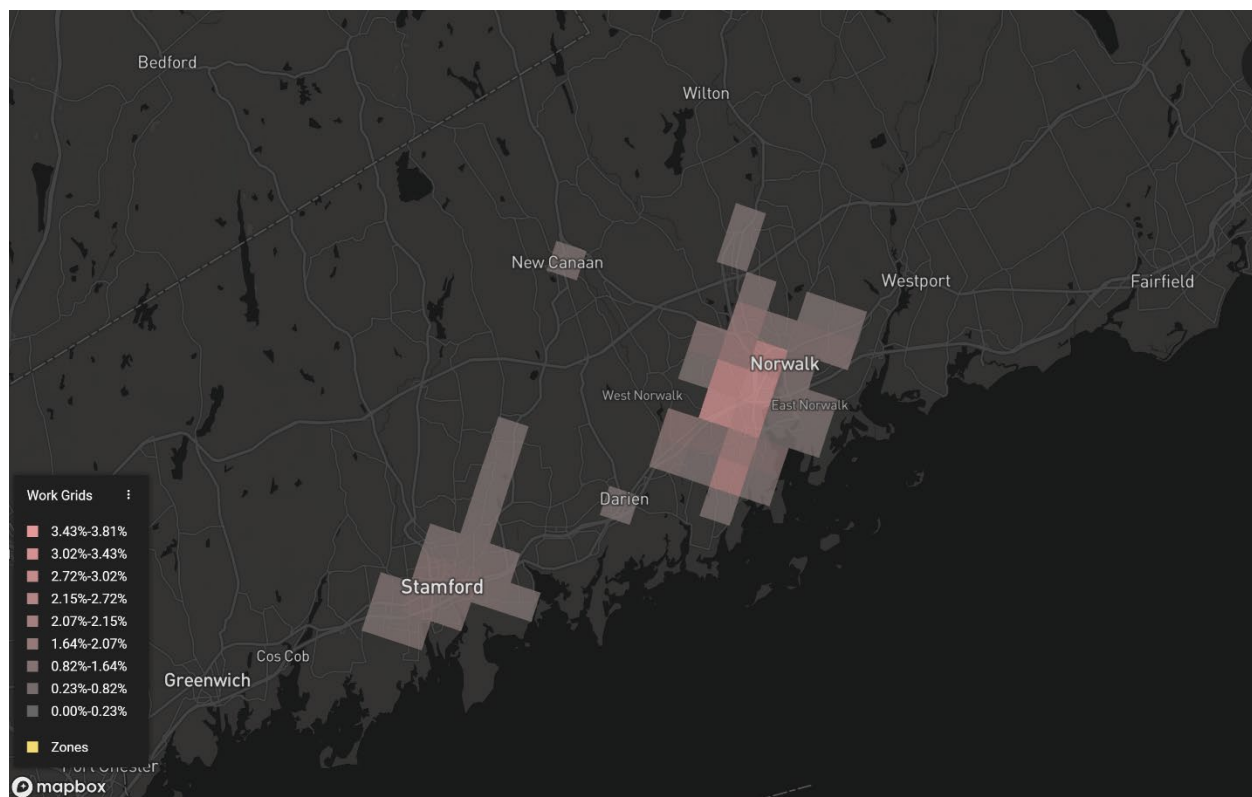


Figure 17. Work Locations of Study Area Users



The western segment (Figure 18) is heavily associated with I-95: 36% of the traffic using this corridor comes from I-95, with 25% coming from adjacent portions of Route 1, 13% coming from Richards Ave, 10% coming from Keeler Ave, 8% from Route 7, and the remaining 8% from other local roads. When leaving the western segment, 33% of traffic goes to I-95 (62% of which uses Scribner Ave), 25% to adjacent portions of Route 1, 12% to Richards Ave, 9% to Keeler Ave, 8% to Route 7, and the remaining 13% to other local roads. The high concentration of highway-destined traffic at Scribner Avenue is tied to the high concentration of crashes at this location as noted within the Safety Analysis. For the western segment, the primary origins/destinations of the long-distance trips are associated with Stamford, Darien, and Westport. These characteristics align with the large retailers in the area including Costco, Home Depot, ShopRite, and Best Buy.

The eastern segment (Figure 19) has a stronger association with municipalities to the north. 26% of the traffic using this corridor comes from I-95, 19% from adjacent portions of Route 1, 17% from Route 7, 7% from Riverside Ave, and the remaining 31% from other local roads. When leaving the eastern segment, 25% of the traffic goes to I-95, 23% to adjacent portions of Route 1, 11% to Route 7, 7% to Riverside Ave, and the remaining 34% to other local roads. For the eastern segment, the primary origins/destinations of long-distance trips

are associated with Stamford, Wilton, New Canaan, and Westport. This reflects the different land use patterns in this segment, with Norwalk Hospital as the most significant trip generator.

Figure 18. West of Exit 14 Inbound Routes

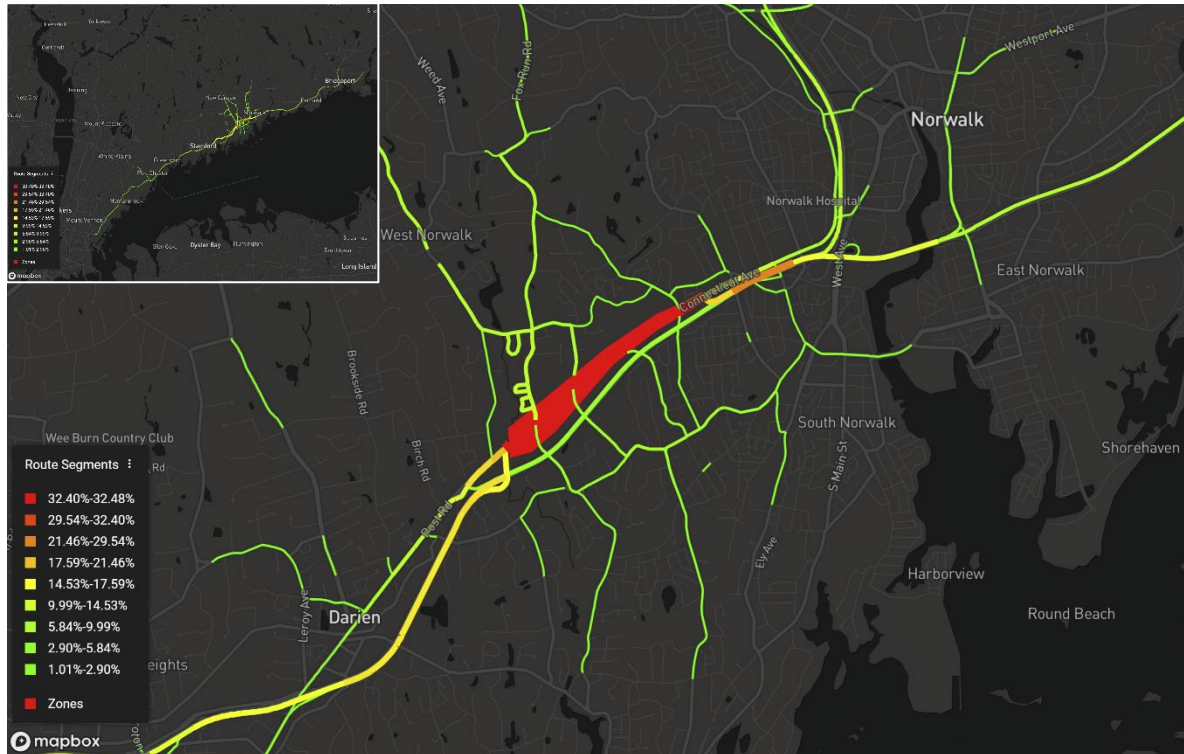
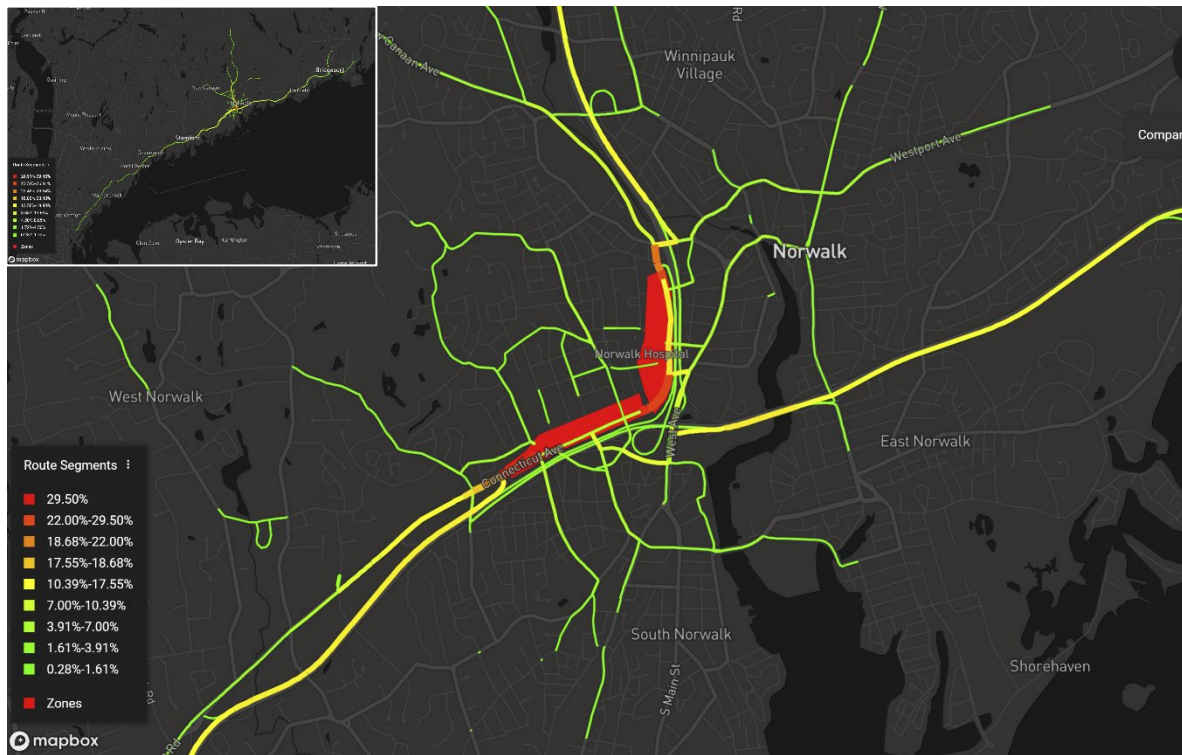


Figure 19. East of Exit 14 Inbound Routes



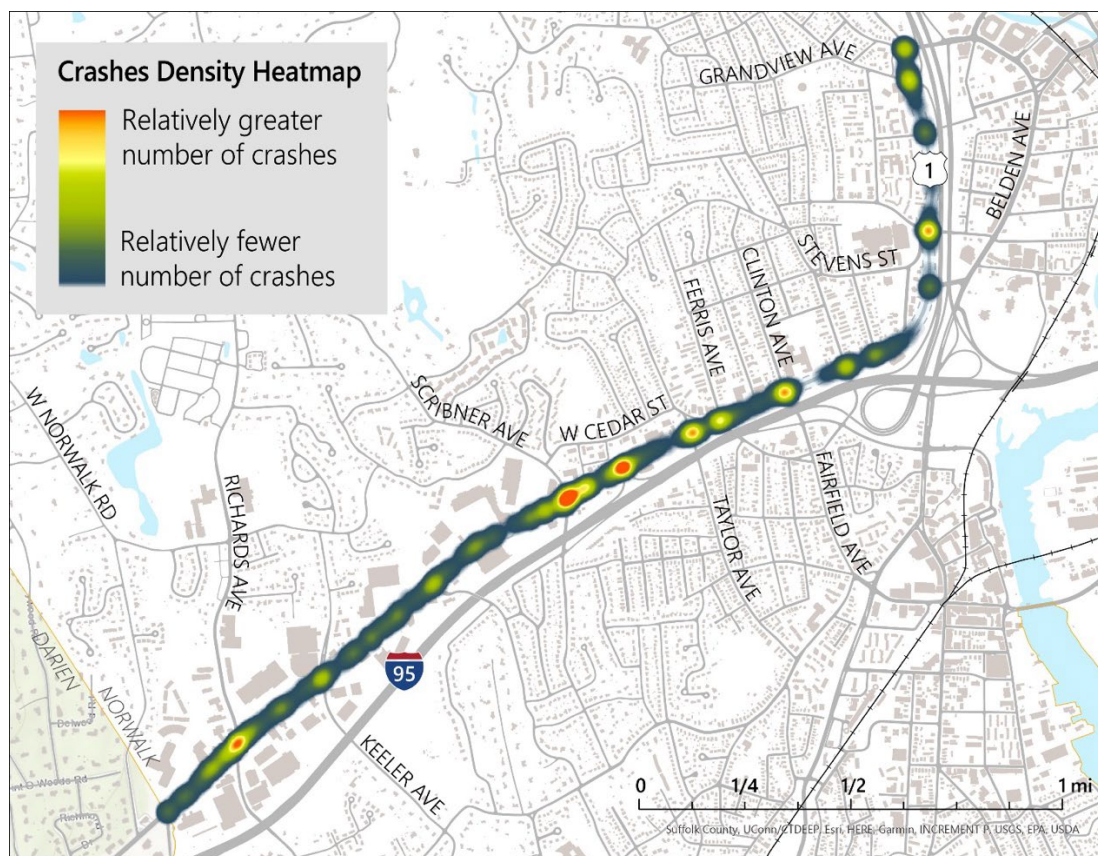
Safety Analysis

An important part of evaluating the existing conditions was a crash analysis of the Route 1 study area. Data was collected from both the Connecticut Crash Data Repository (CTCDR), which is maintained by the University of Connecticut, and the City of Norwalk. Entries to the CTCDR originate from police reports filed when a crash occurs, and, depending on the severity or complexity of the crash, can take up to a year before logged fully in the system. Crash database records include the date, location, severity, type, weather conditions, lighting conditions, and more. The analysis presented in the following sections is for the five-year period from 2019-2023.

Crash Locations

The analysis period from 2019-2023 contained 1,400 total crashes along the 2.9-mile corridor. Figure 20 is a heatmap that shows the relative density of the crash activity.

Figure 20. Heatmap of All Crashes (2019 - 2023)



While there is activity throughout, there are notable locations where the number of crashes is higher:

- Intersection with Scribner Ave
- On and off ramps to I-95 between Scribner Ave and Taylor Ave
- Intersection with Richards Ave
- Intersection with Maple St
- Intersection with Fairfield Ave
- Intersection with Cedar St and Ferris Ave

These locations are regionally significant. In particular, the intersection of Route 1 at Scribner Avenue, and the corridor segment from Scribner Avenue to Taylor Avenue represent the highest crash locations within the City of Norwalk as defined by the total number of crashes per mile.

A set of maps, Figure 21 through Figure 24, display vehicle crash activity starting at the northern end of the corridor. Included are the locations of crashes involving pedestrians and bicycles, and where fatalities occurred.

Figure 21. Crash Locations – 1 of 4

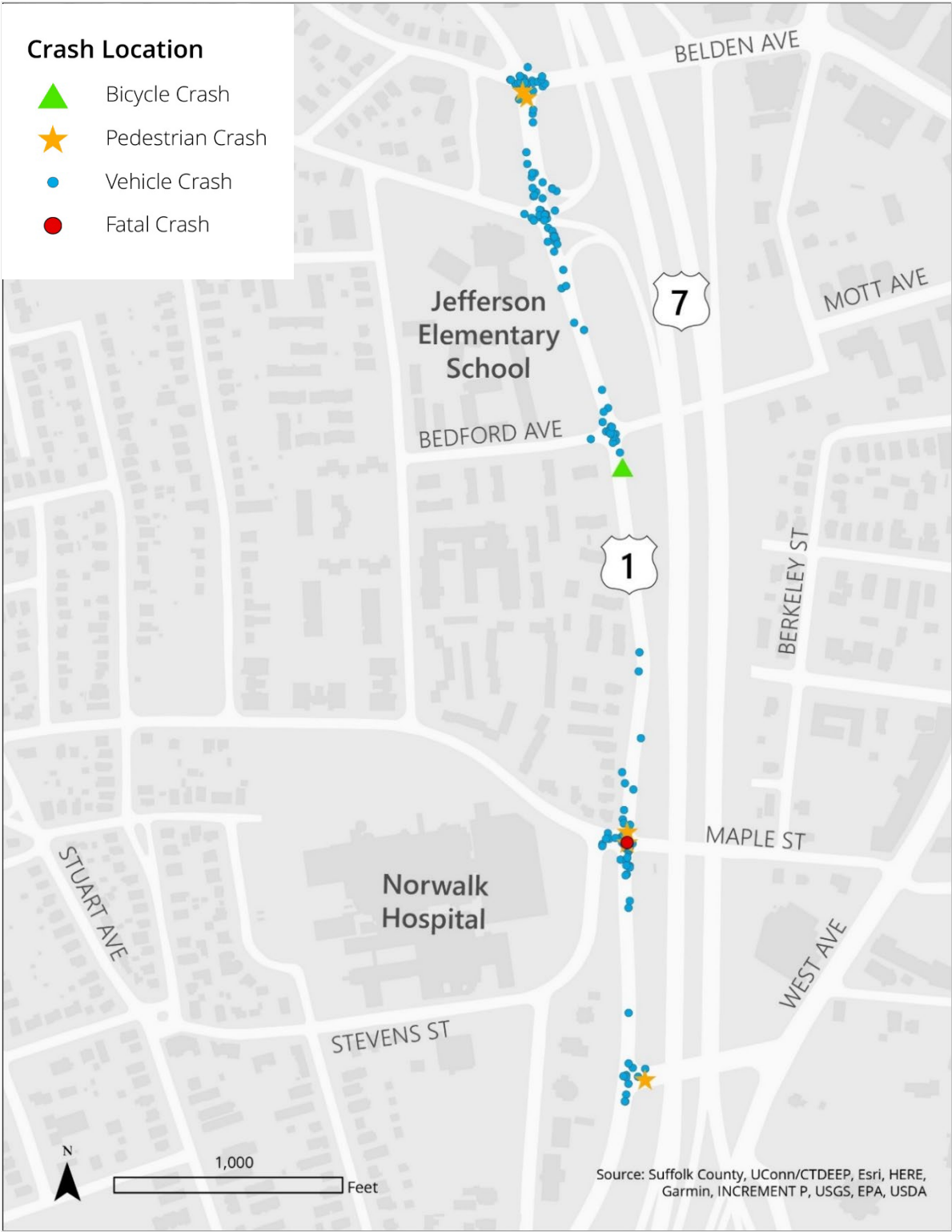


Figure 22. Crash Locations – 2 of 4

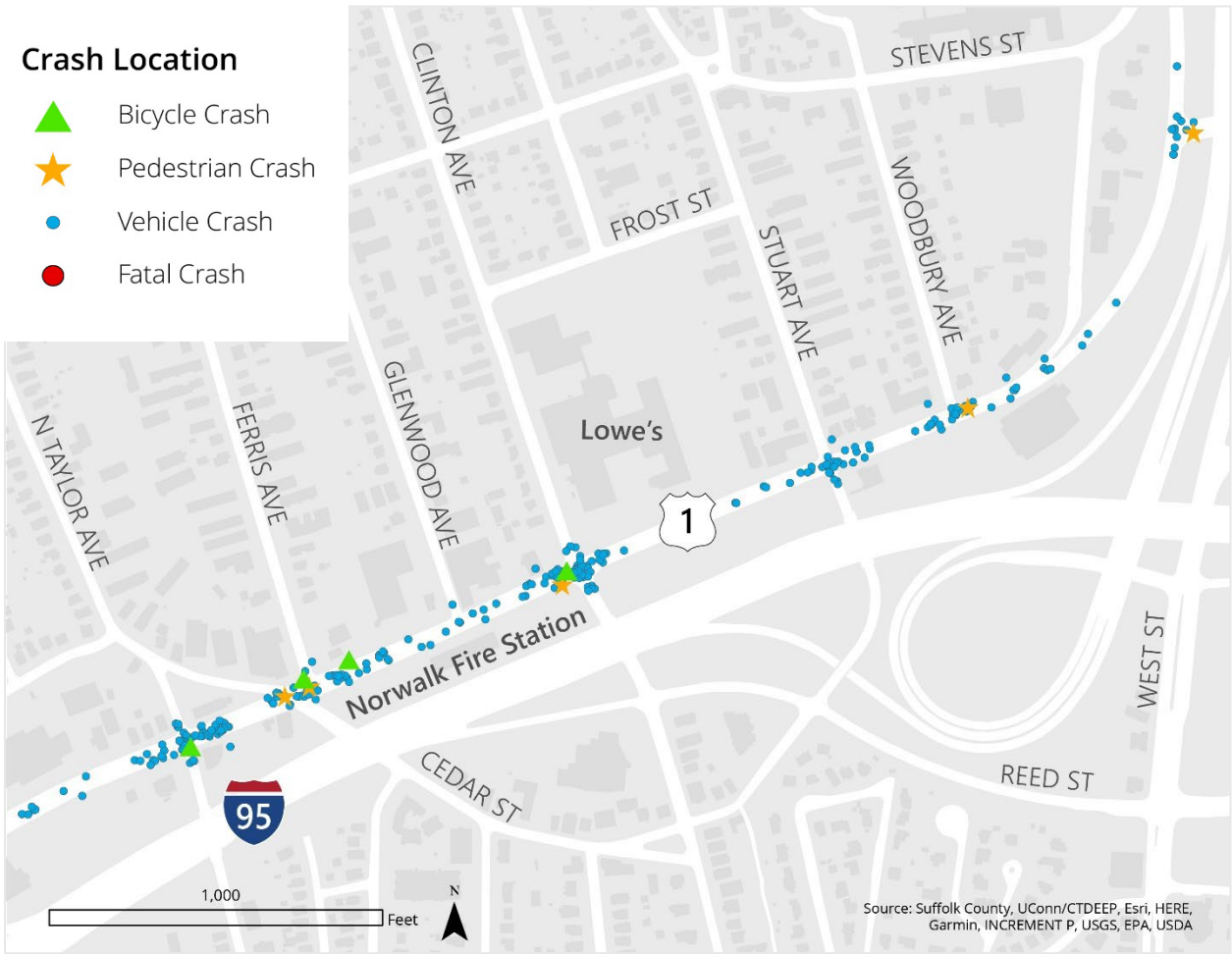


Figure 23. Crash Locations – 3 of 4

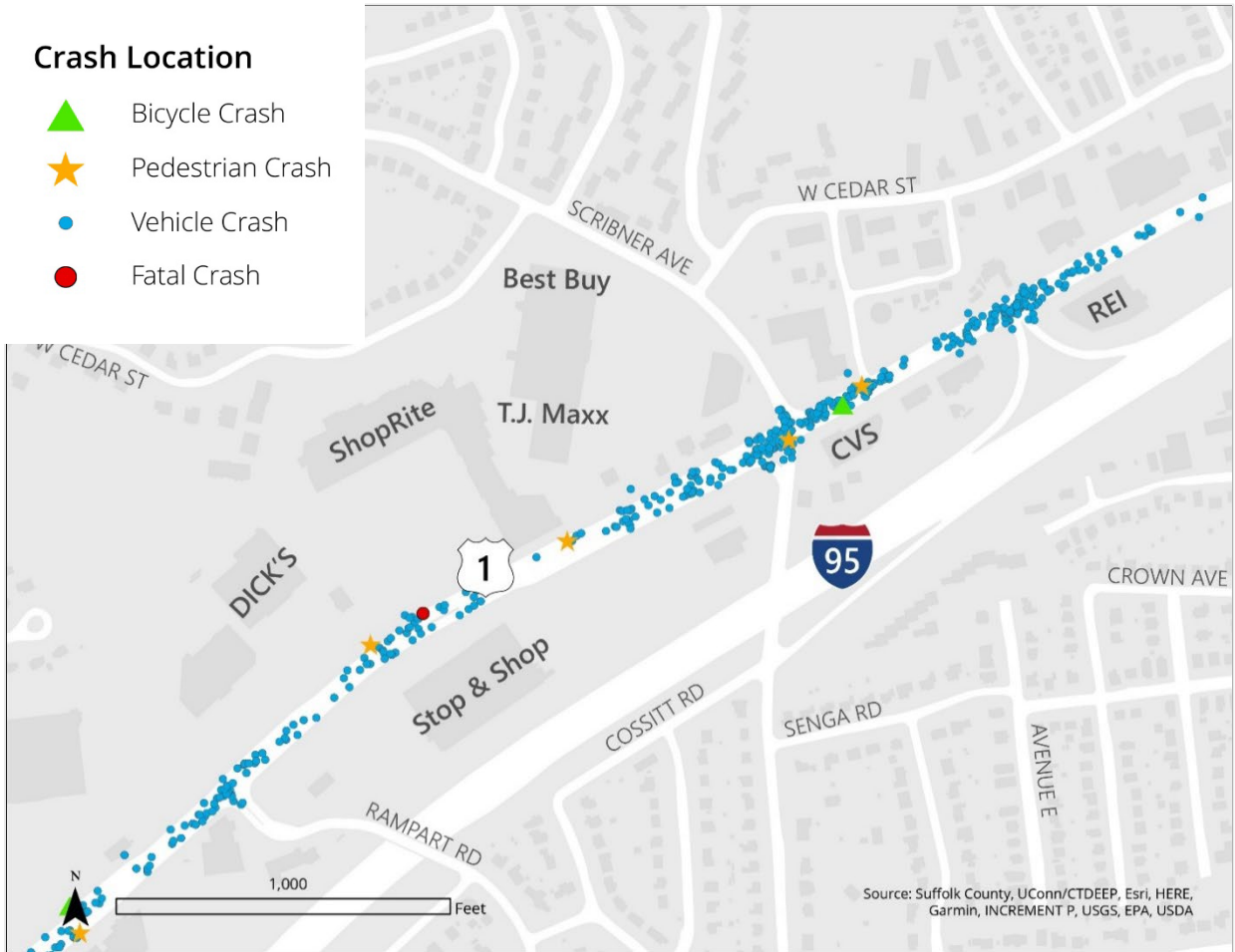
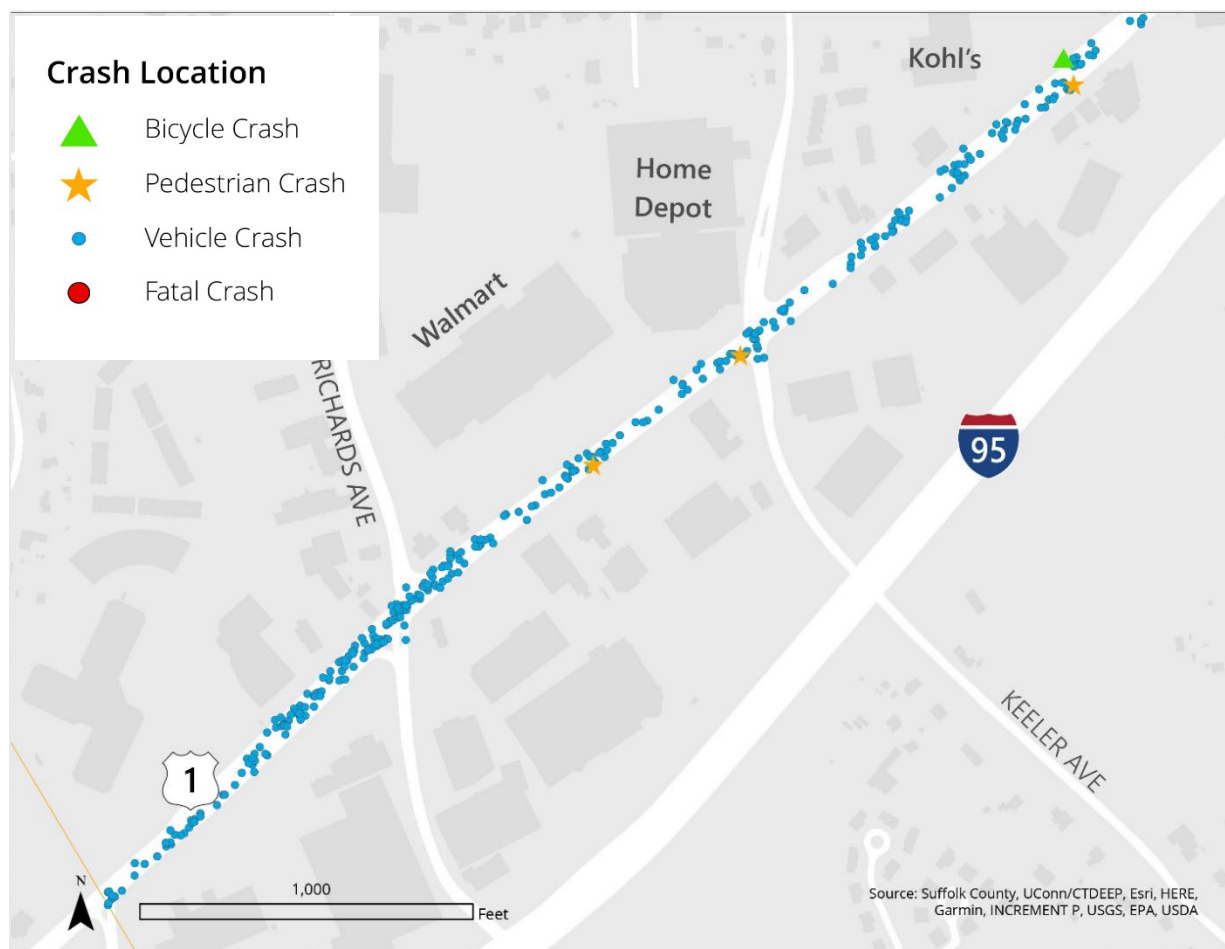


Figure 24. Crash Locations - 4 of 4



Environmental Conditions

The occurrence of a crash may depend on weather conditions, roadway conditions, time of day, or other extrinsic environmental characteristics. Wet weather can contribute to subpar driving conditions, and poorly lit or dark roadways reduce visibility of vulnerable roadway users. Environmental conditions do not appear to impact crash rates along the Route 1 corridor during the five-year study period. A breakdown of weather and lighting conditions is shown in Figure 25 and Figure 26. Most crashes occur in daylight and clear weather conditions.

Figure 25. Weather Conditions

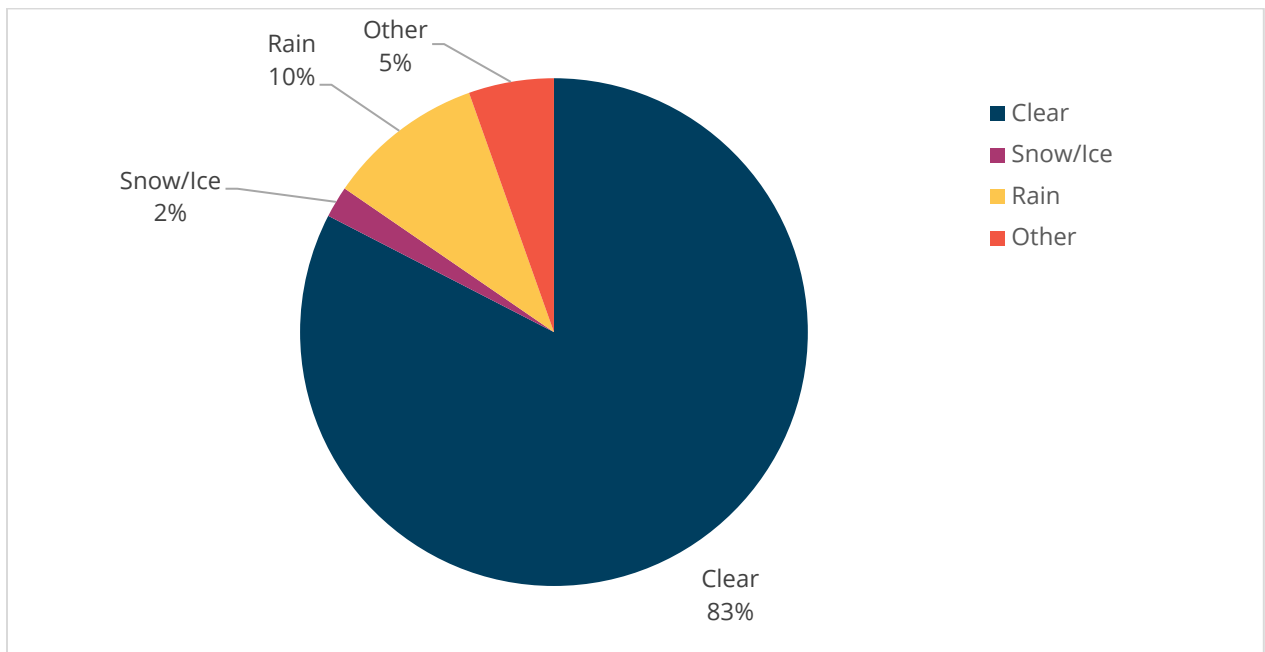


Figure 26. Lighting Conditions

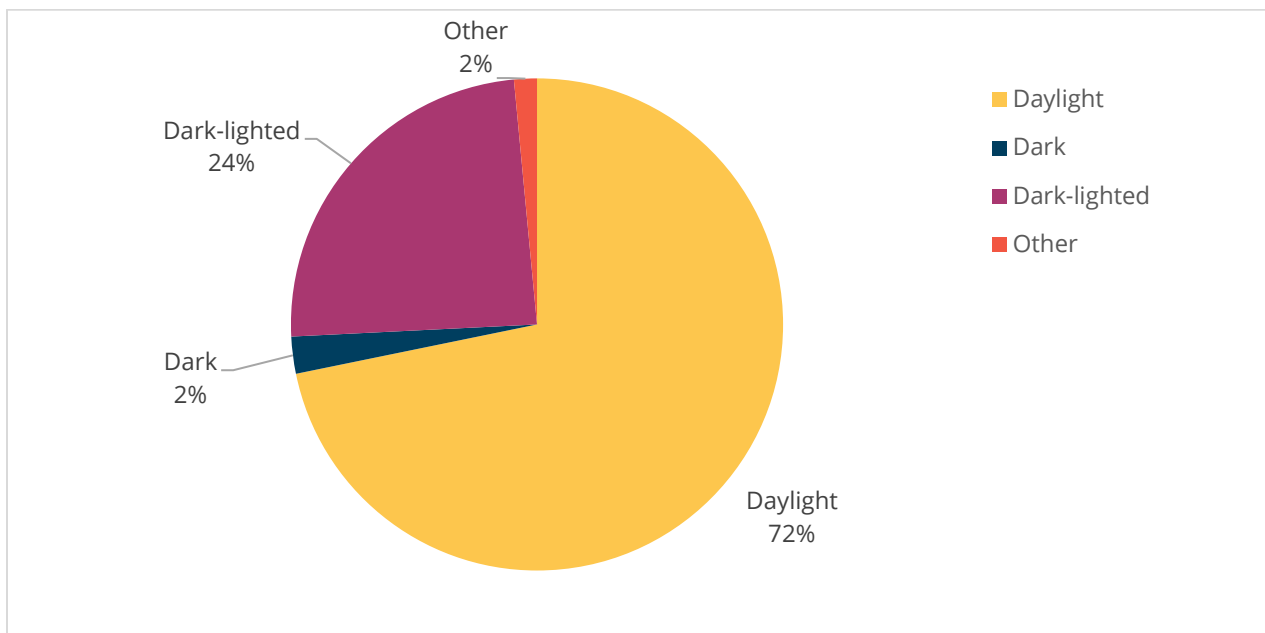
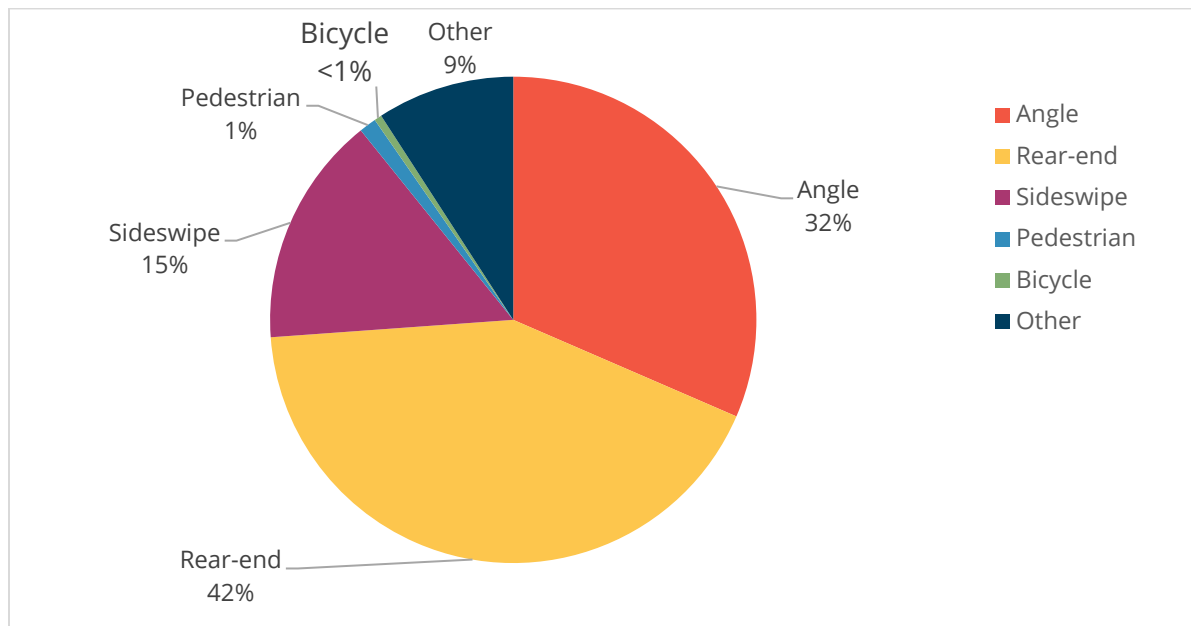


Figure 27. Crash Types



Rear-end crashes make up 42% of the reported 1,400 crashes in the study area, followed next by angle crashes and sideswipe crashes at 31% and 15%, respectively. Rear-end crashes are common in areas with high vehicle volumes, heavy congestion, and lane queues for left turns. Turning type crashes are common with lane merging and ingress/egress movements from roadway-adjacent driveways. The characteristics of the Route 1 study area are consistent with the breakdown of crash type, which is shown in detail in Figure 27. Figure 28 through Figure 31 also show this data on a set of maps starting at the northern end of the study area

Figure 28. Crash Type - 1 of 4

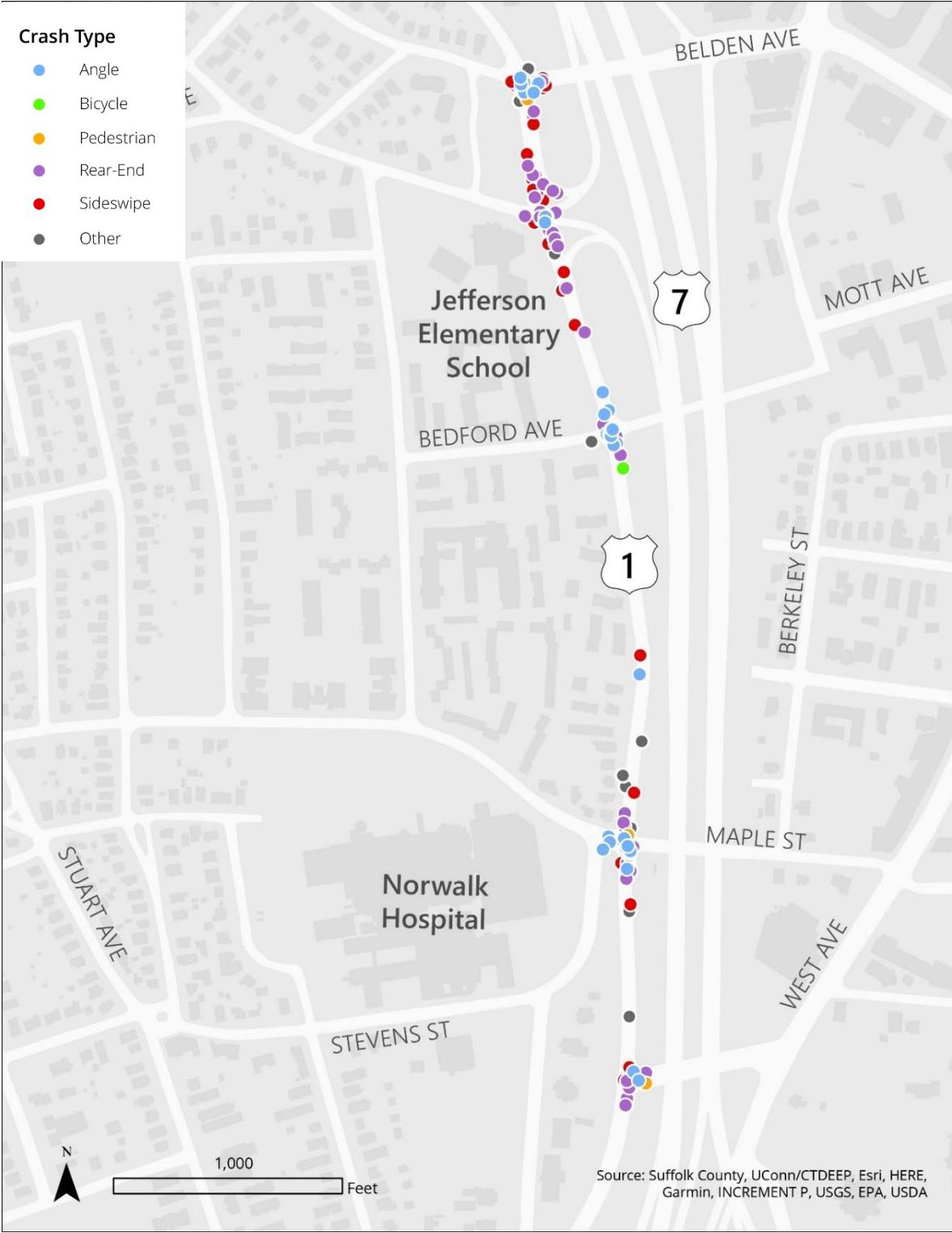


Figure 29. Crash Type - 2 of 4

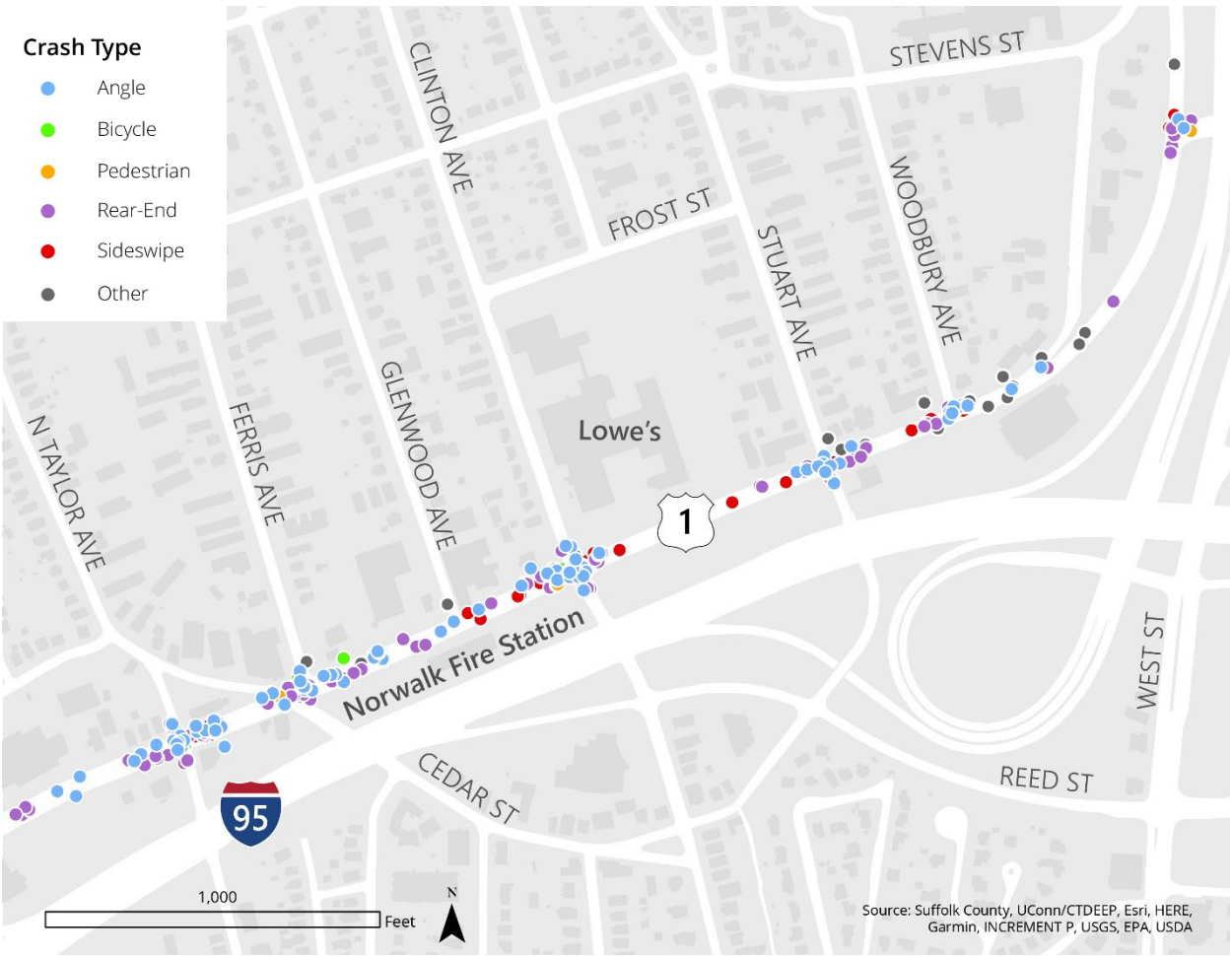
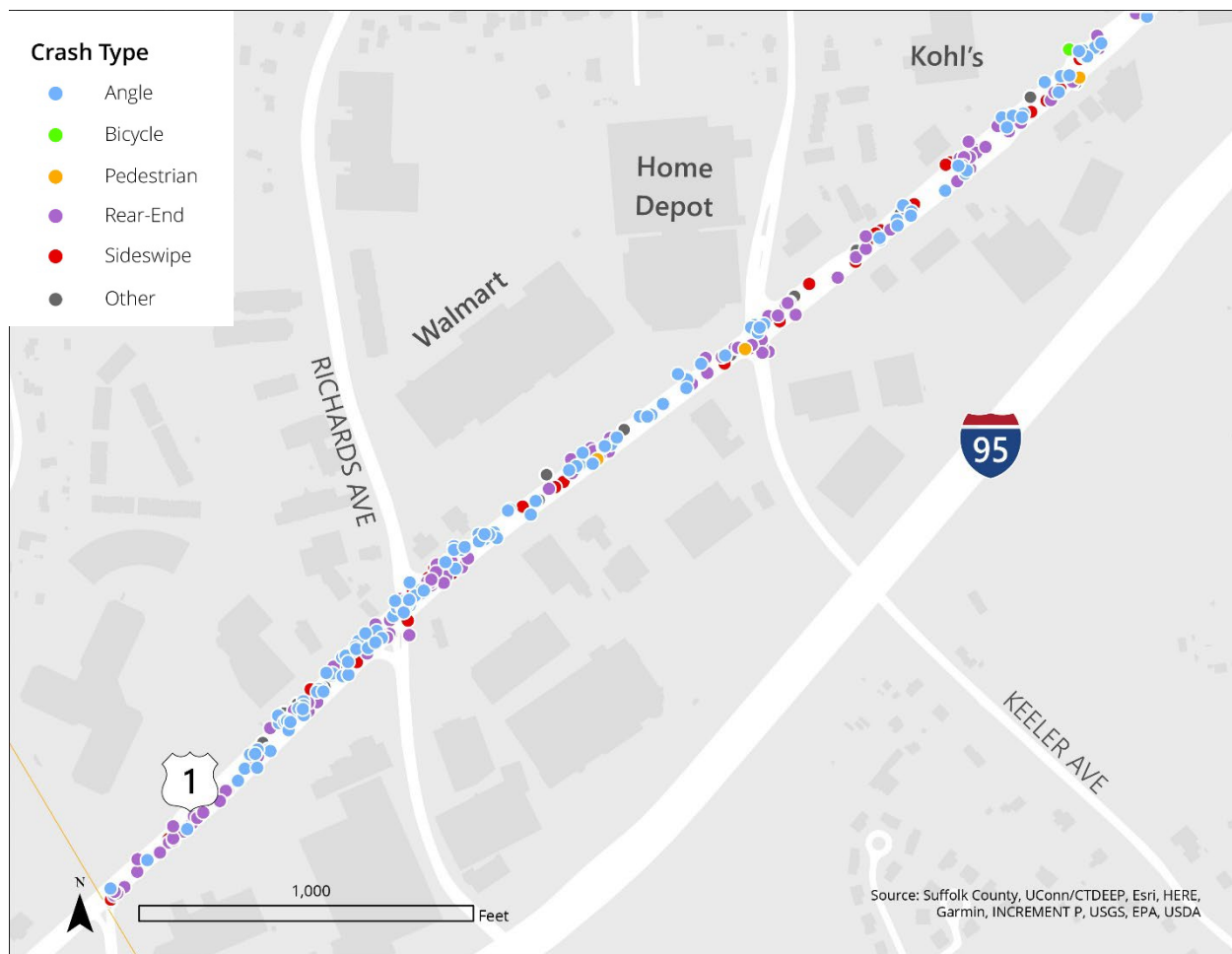


Figure 30. Crash Type - 3 of 4



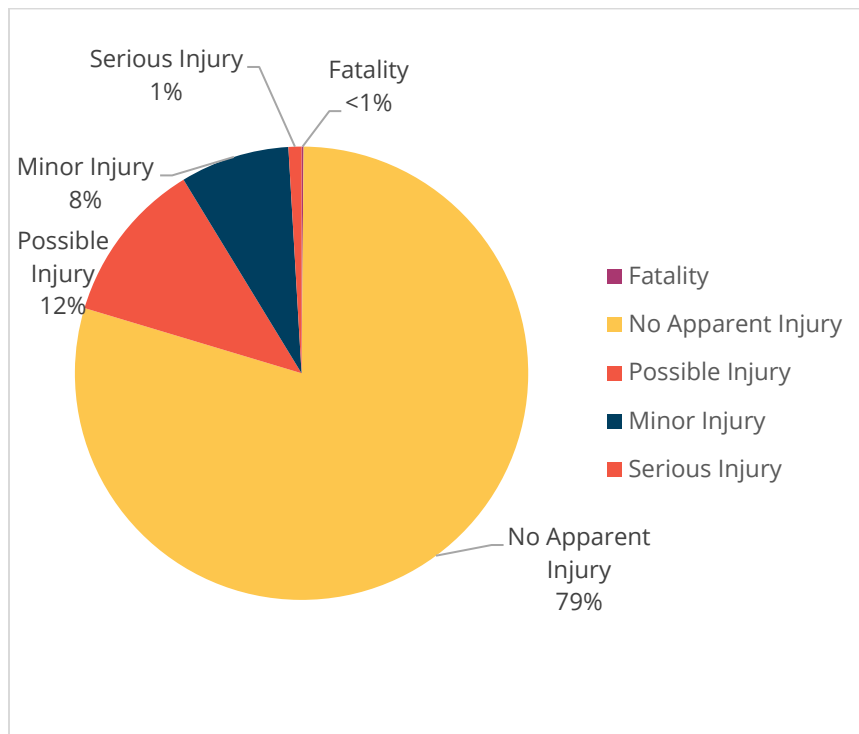
Figure 31. Crash Type - 4 of 4



Crash Severity

The most common result of crashes was no apparent personal injury or only property damage at 79%. Of the crashes recorded during the five-year study period, there were two that resulted in a fatality, making up <1% of the total. Figure 32 shows the full breakdown of crashes by severity. Figure 33 through Figure 36 contain the same data on a set of maps starting at the northern end of the study area.

Figure 32. Crash Severity



One fatality occurred in July 2020 between Rampart Road and Scribner Avenue, near the entrance to ShopRite, where one of the four vehicles involved burst into flames after hitting utility poles. A second fatality occurred in July 2023 at the intersection of Maple Street with Route 1, after an SUV collided with a moped. Whereas the 2020 crash occurred midday, the latter occurred late in the evening.

Figure 33. Crash Severity - 1 of 4

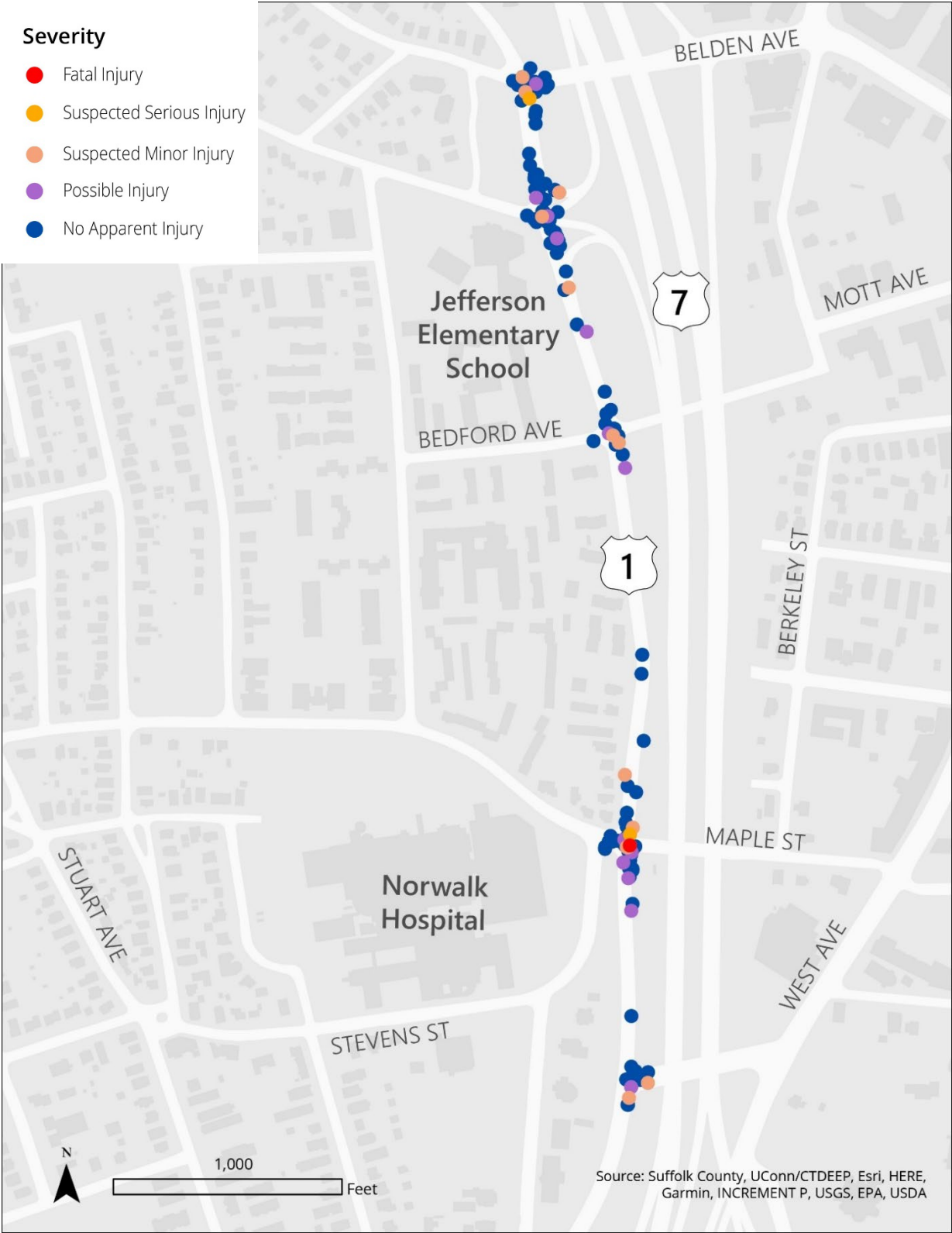


Figure 34. Crash Severity - 2 of 4



Figure 35. Crash Severity - 3 of 4

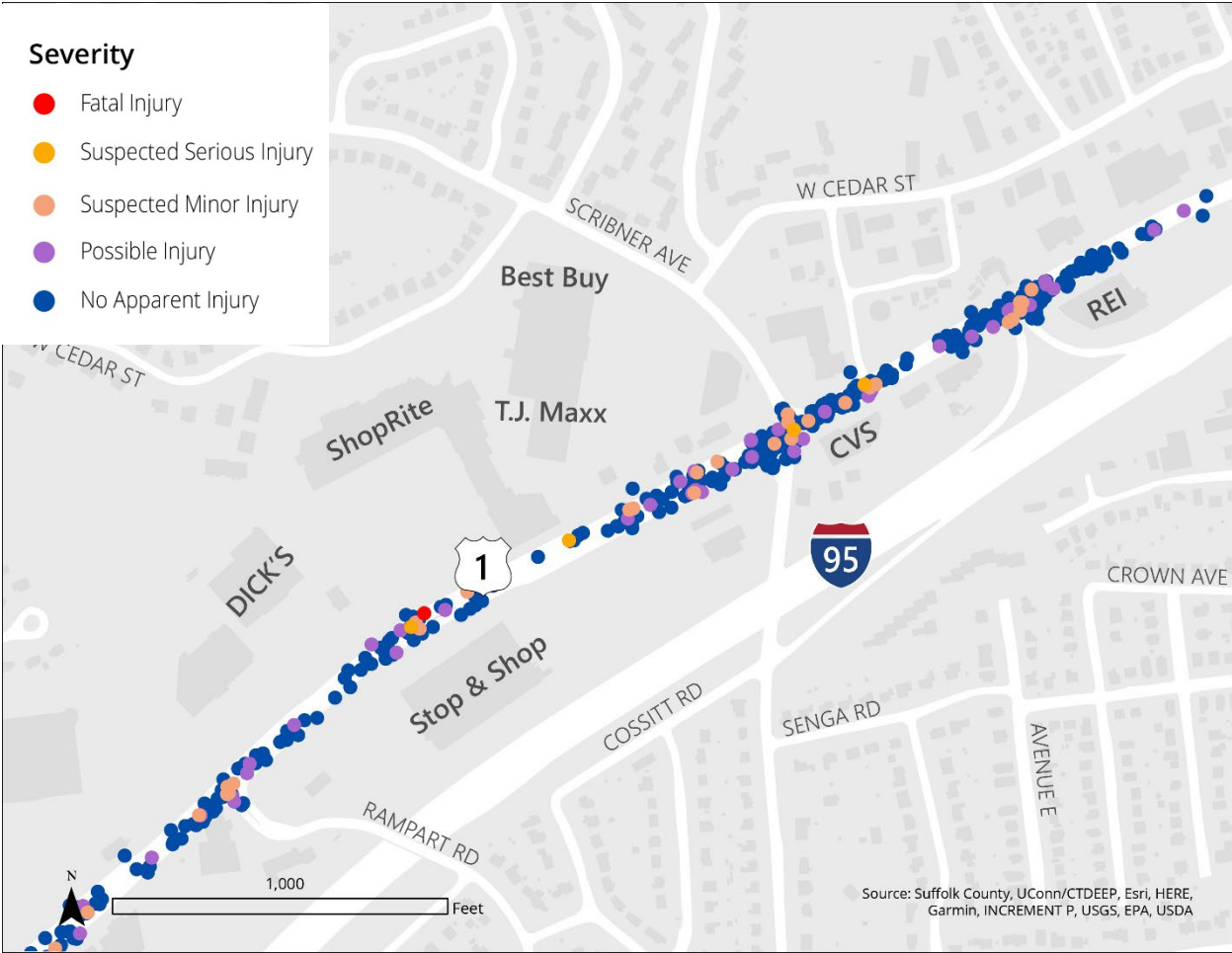


Figure 36. Crash Severity - 4 of 4



Pedestrian Environment

Along the heavily commercialized Route 1 corridor, the presence of large strip malls and big box stores with large parking lots hinders walkability. In some areas, there are sidewalks in good condition with ramps at corners on both sides of the road with sidewalk widths of six to seven feet - above average. Amenity zones are generally absent and dependent on the quality of maintenance provided by the commercial lot adjacent to the sidewalk. The majority of existing amenity zones are grass patches measuring between three to six feet in width. Pedestrian-scale lighting is absent. Additionally, maintenance is lacking in some locations, driveways cut through the sidewalks throughout the corridor, and obstructions (such as signage, poles) that reduce the sidewalk width are present. Gaps in the sidewalk network are noted under Roadway Characteristics above.

Crossing the road can be challenging as there are only a select number of intersections, including those at large shopping plazas, which have pedestrian signals, crosswalks, and curb ramps. There are long distances on Route 1 where there are no opportunities to cross the multiple lanes of travel particularly on the western portions where these distances can measure up to a quarter mile. This, combined with inadequate crossing time with pedestrian signals, present safety concerns, when pedestrians grow frustrated and run across the street.

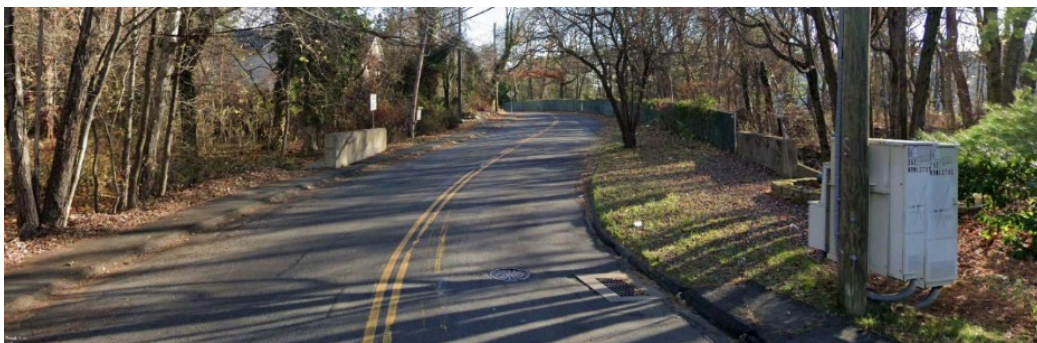


Route 1 at Scribner Avenue (Source: Google Earth)

On Flax Hill Road, the sidewalk system is continuous on at least one side of the road and is in good condition and well-maintained. Sidewalks generally are 4.5 feet in width and have buffers to the road and ramps on corners. There is also good visibility on the sidewalks, as the land is generally flat and clear of vegetation that may hinder the line of sight. Though these factors contribute to a welcoming environment for pedestrians, there is a lack of signage and traffic lights to navigate pedestrian crossings. Additionally, since these

sidewalks are in front of residential homes, large trash cans on trash days can hinder access and sidewalk maintenance is dependent on the property owner.

Throughout W. Cedar Street, there is a sidewalk on one side of the road that is generally continuous but abruptly ends at multiple points. There are a number of residential driveways crossing the sidewalk, and at Richards Avenue, the sidewalk switches to the other side of the roadway. The sidewalk is narrow but in fair condition with cracks that can make it difficult to use. Additionally, there are no shoulder markings or buffers, so pedestrians are closer to traffic which reduces pedestrian comfort, especially in areas with frequent speeding. Due to the residential land use and zoning patterns and adjacent forestry, there are reduced traffic volumes, and more limited signage and markings to facilitate a vibrant pedestrian experience.



Top: Intersection at Frances Avenue, Arbor Drive, and Flax Hill Road; Bottom: W. Cedar Street Between Orlando Road and Scribner Avenue (Source: Google Earth)

Figure 37. Pedestrian Conditions (1 of 4)

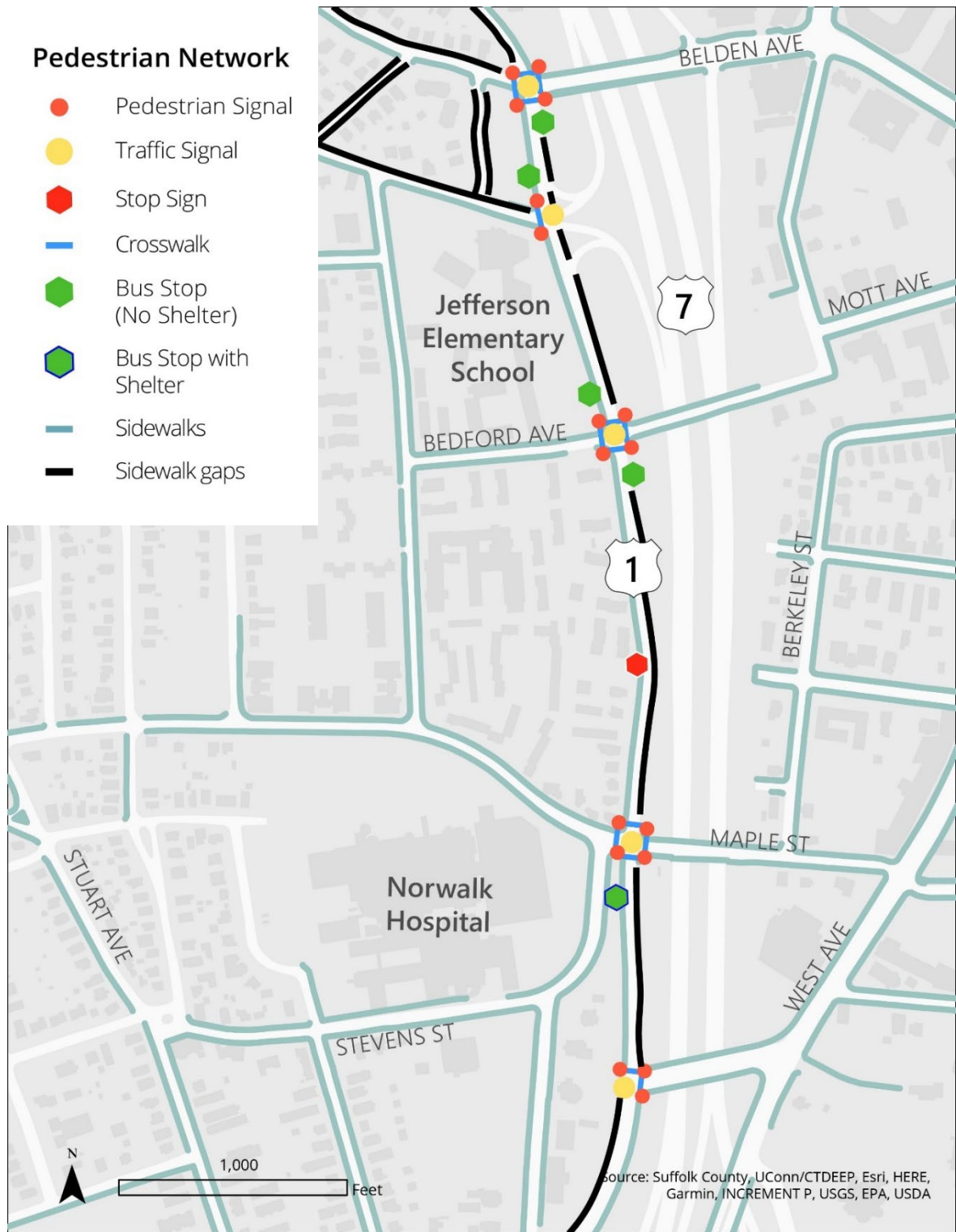


Figure 38. Pedestrians Conditions (2 of 4)

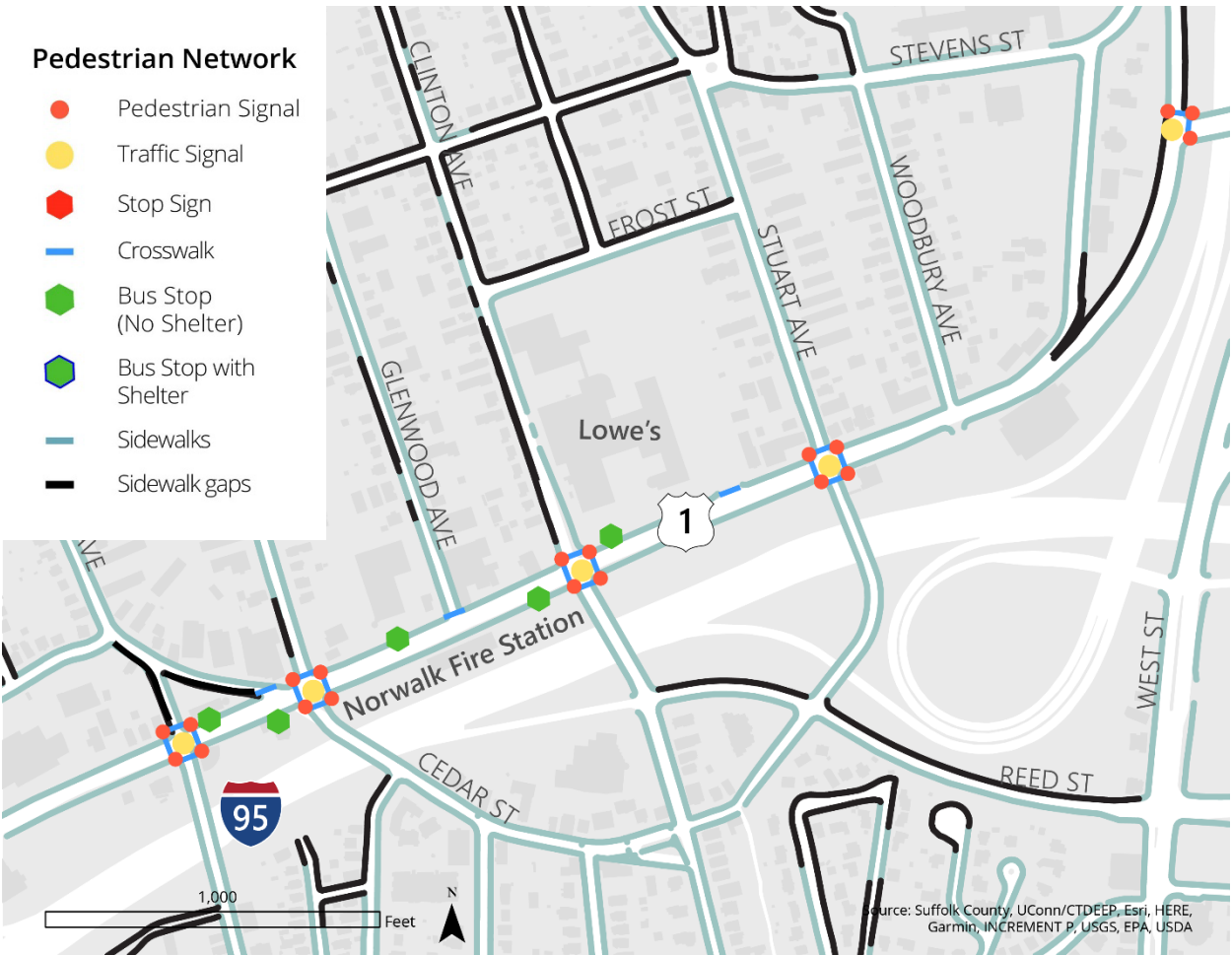


Figure 39. Pedestrian Conditions (3 of 4)

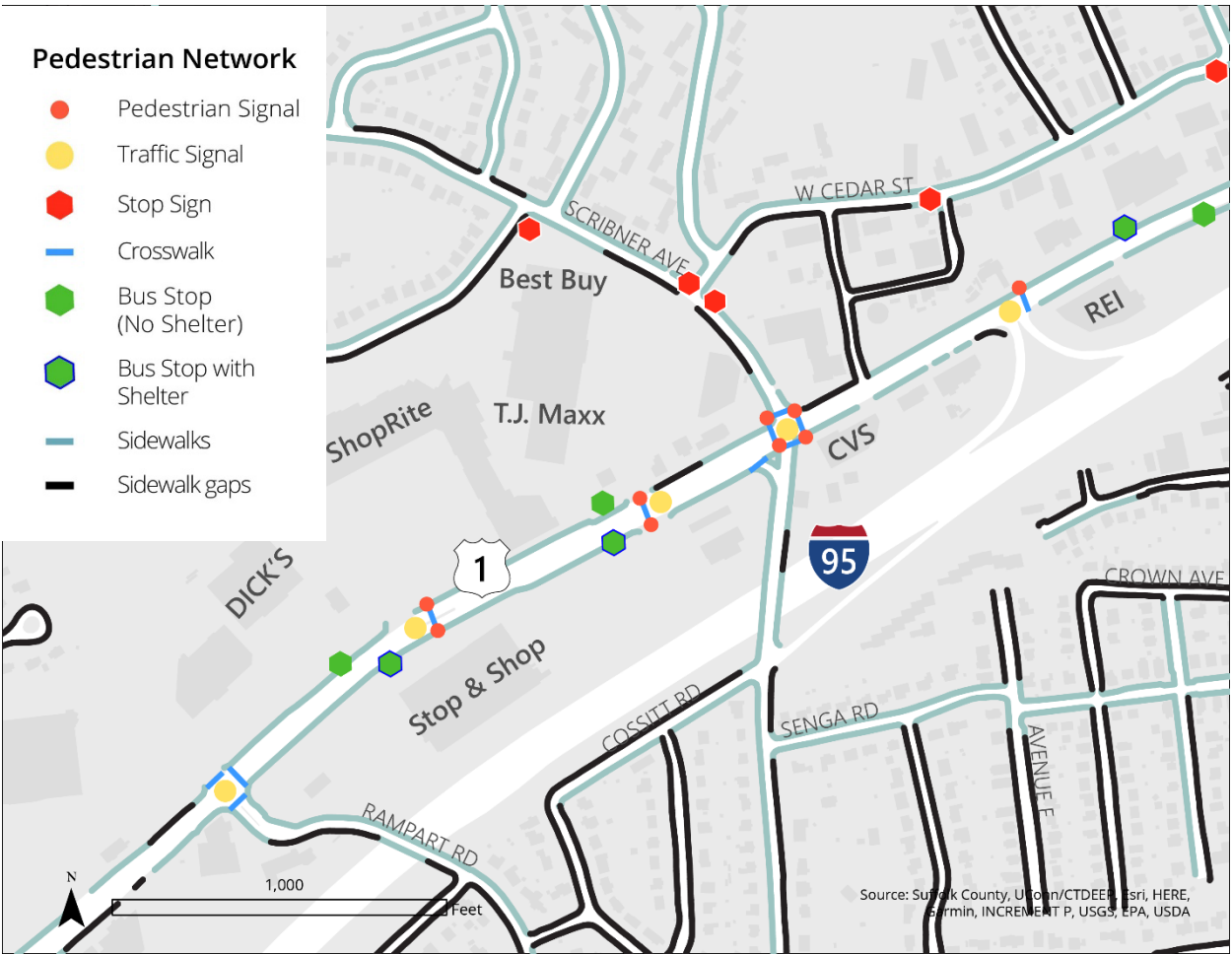
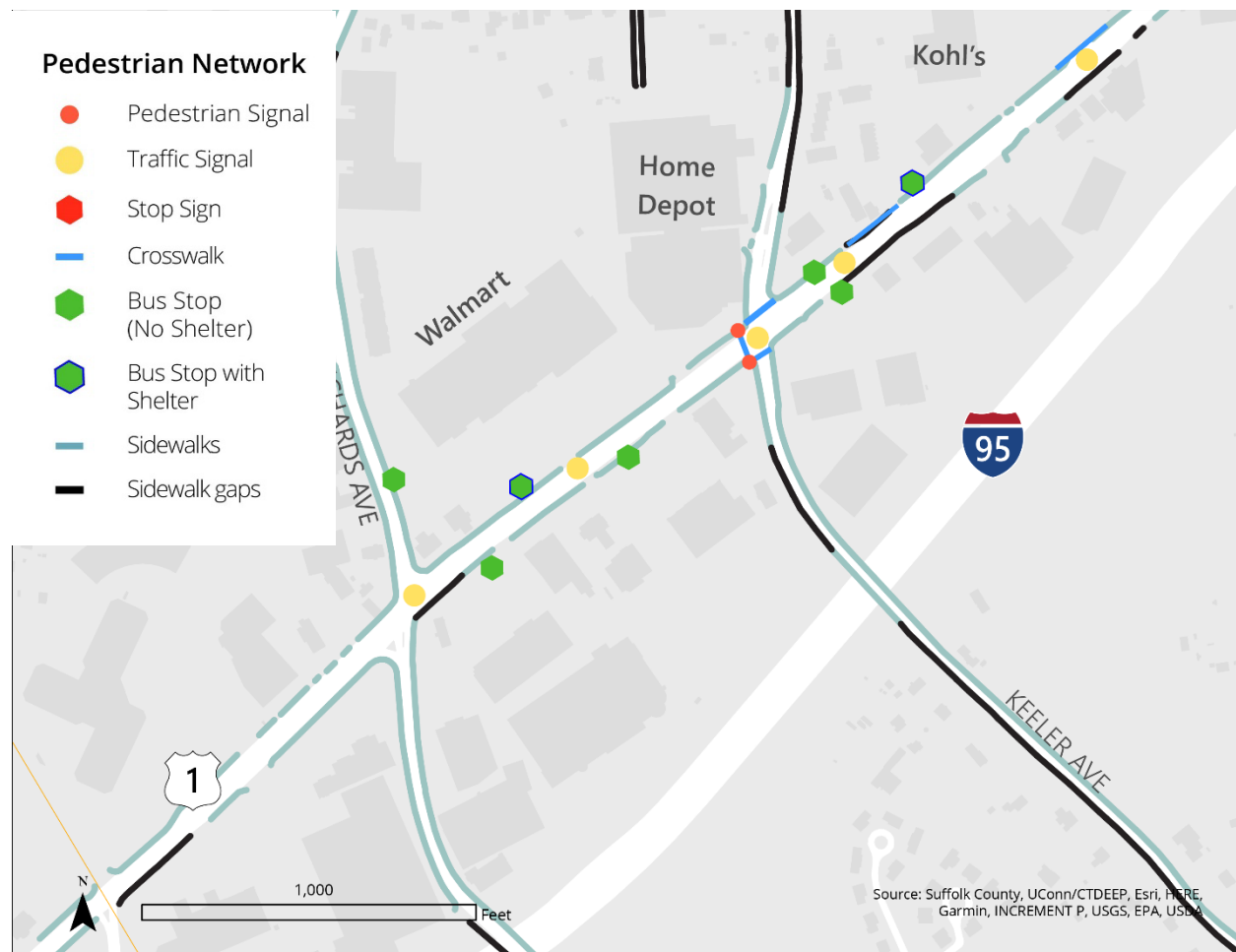
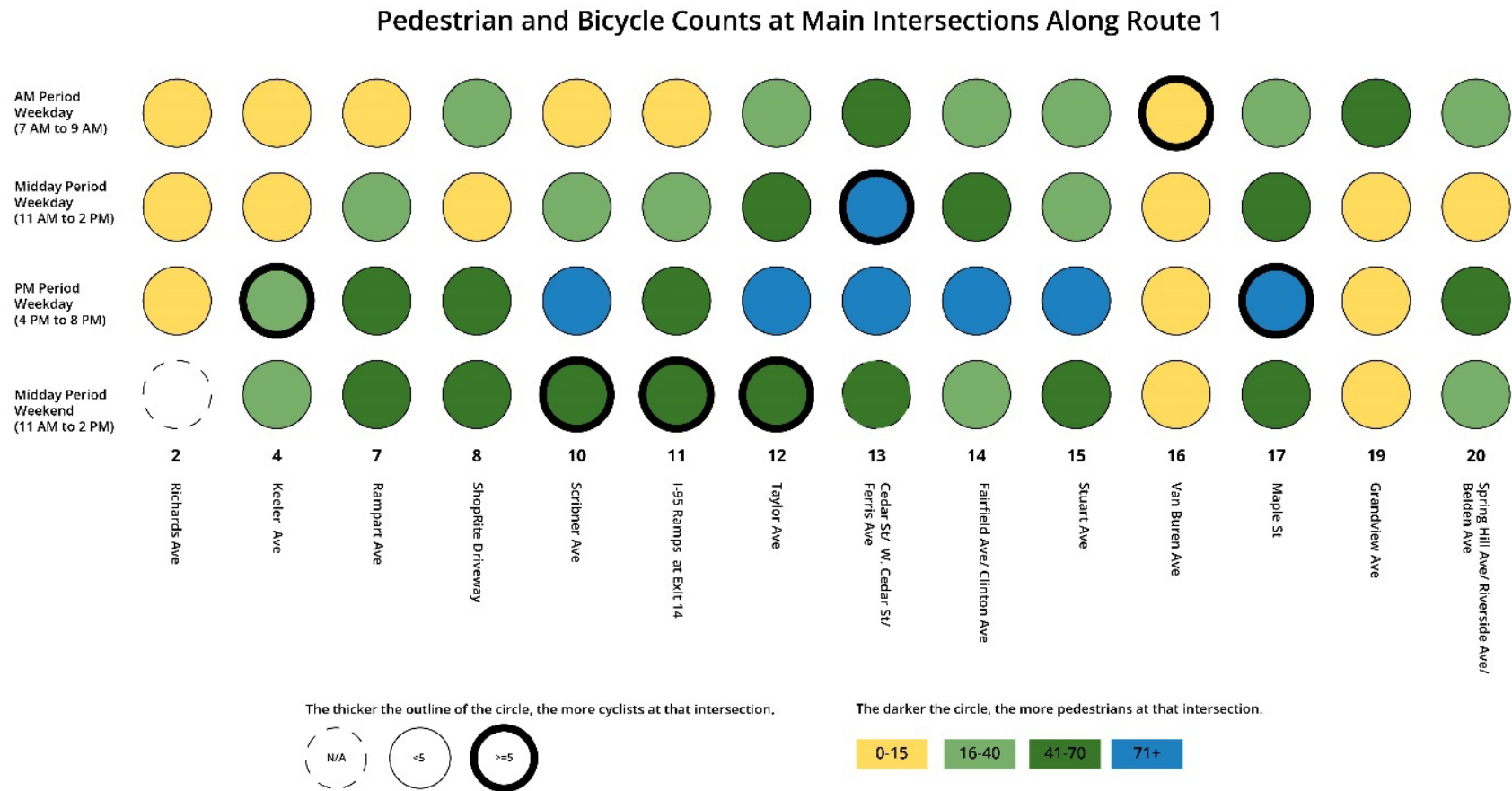


Figure 40. Pedestrian Conditions (4 of 4)



Data collected for the study indicates that some pedestrians are present throughout the corridor at all times of day, despite the challenging pedestrian environment. As highlighted in Figure 41, weekday evenings in the central portion of the corridor have the highest concentrations of pedestrians, whereas volumes are lower on the western portion of the corridor (where big box stores abound) and the eastern end of the study area (where large bluffs and proximity to I-95 creates a larger barrier to travel outside of a vehicle).

Figure 41. Pedestrian and Bicycle Counts



Note: Intersection numbers correspond with labels on Figure 11.

Bicycle Environment

On this segment of Route 1, there is a lack of bike infrastructure and a narrow shoulder (less than 4 feet). Moreover, the corridor carries high volumes of traffic traveling at high speeds and with many turning movements. The corridor includes multiple lanes of vehicular traffic, traffic signals with turn-only directions, turn-only lanes, and commercial driveways. These conditions and unpredictable vehicular movements present an inhospitable environment for bicycling.



Cyclist on Sidewalk Near Scribner Avenue and Route 1 (Source: FHI Studio)

The lack of alternative east/west routes in the bicycle network, however, make this an important corridor, as evidenced by the presence of bicyclists on the corridor even without bike infrastructure (pictured above). Furthermore, north/south access between the city's neighborhoods and essential destinations is inhibited by the significant intersections on the west side of the study area as well as the significant slopes on the northeastern side of the study area. Although not accessible via separate facilities today, much of Norwalk falls within a 10-minute bicycle ride, including Sono and its train station (Figure 44).

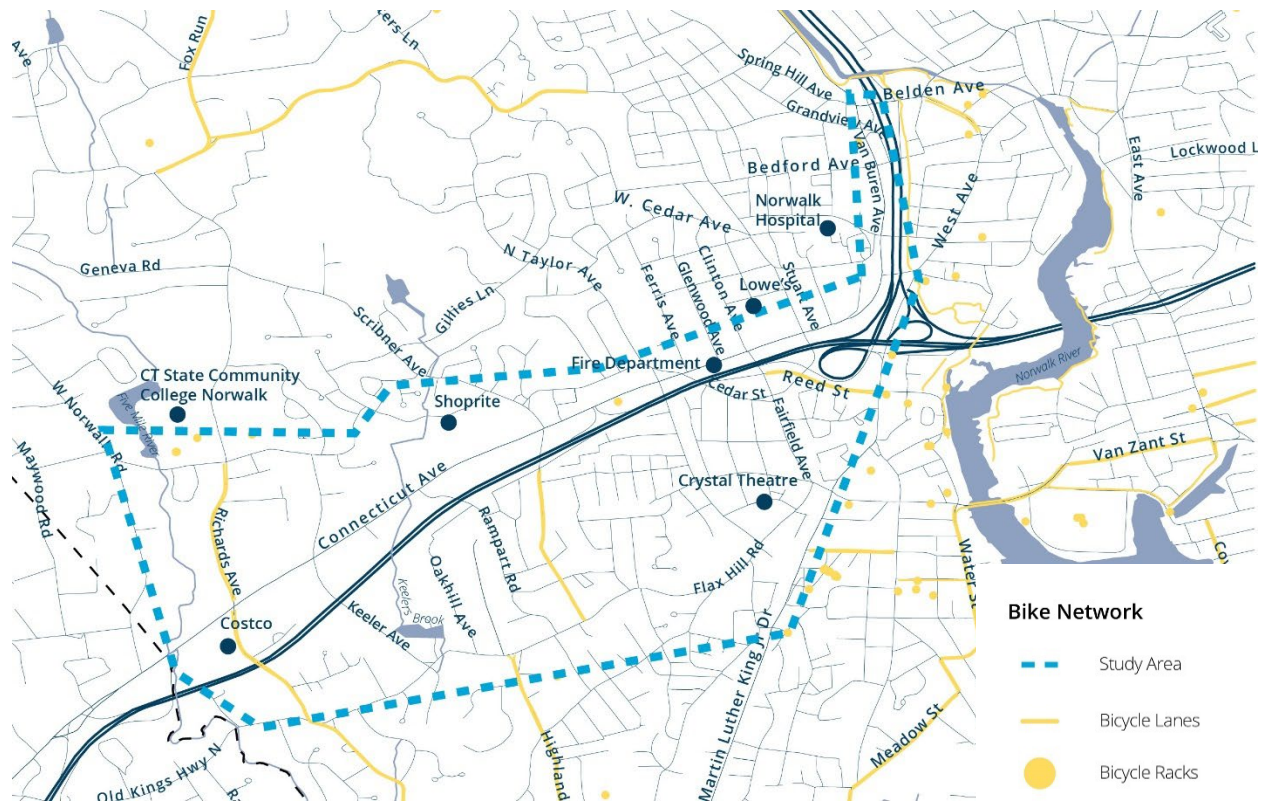
As Norwalk develops a separated bicycle network, the barrier presented by Route 1 (and the adjacent I-95 corridor) becomes more apparent. Several cross streets have or are identified for future bicycle lanes, including Richards, Scribner, Reed, and Belden Avenues as illustrated on Figure 42. The Norwalk River Valley Trail, is also proximate to the study area (Figure 43).

Flax Hill Road does not have bike infrastructure, such as a bike lane or bike traffic lights, to enable bike access. However, the well-maintained markings for shoulders, standard to wide sized shoulders, 25 mph speed limit, and one lane of travel per direction are factors that point to a less traveled route that can have lower stressors for multimodal access. While it can be another route for east-west travel, it may not be the ideal alternative as there is a lack of traffic signage at intersections, beyond stop signs, that can be improved with traffic lights, and curves that can benefit from larger shoulders. Flax Hill Road also has steep hills and blind curves that may make a challenging environment for cyclists.

W. Cedar Street is a narrow road without markings for a shoulder. There is also a lack of signage and traffic lights, as well as blind corners, winding hills, and greenery which impact

visibility. The challenging topography and lack of infrastructure to facilitate safe navigation on this tight road make it challenging for bike access. Within the first block north of Route 1 (Connecticut Avenue), W. Cedar Street is one-lane northbound and includes shared lane markings (sharrows).

Figure 42. Bicycle Infrastructure



A portion of the Norwalk River Valley Trail (NRVT) runs parallel to US-7 near the eastern boundary of the study area. The NRVT is a partially complete recreational trail that will ultimately run 30 miles connecting Calf Pasture Beach in Norwalk to Rogers Park in Danbury. A parking area for the trail is located on Riverside Avenue, just north of the study area boundary. From the parking area, the 10-foot-wide stone dust trail continues south briefly before turning east, crossing under US-7, and continuing south along US-7 for approximately two-thirds of a mile before exiting the study area near Connecticut Avenue.

Figure 43. Norwalk River Valley Trail

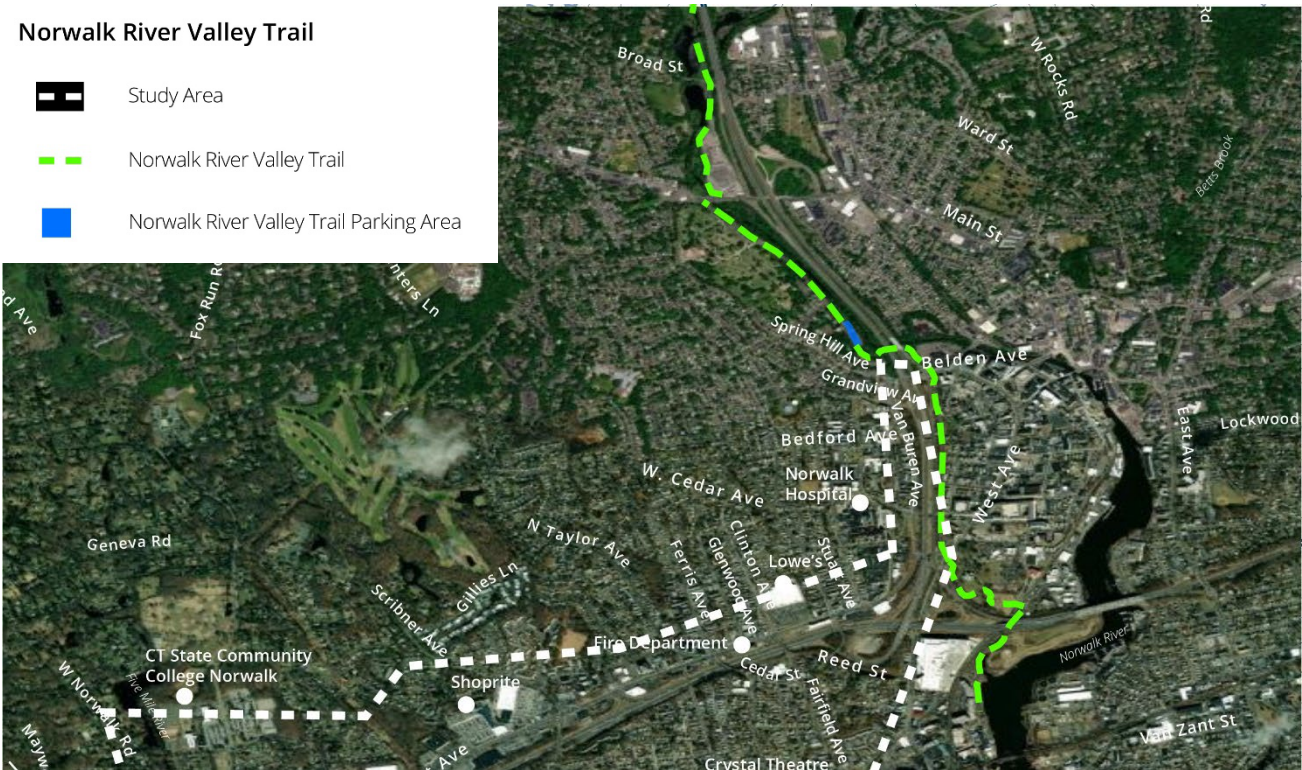
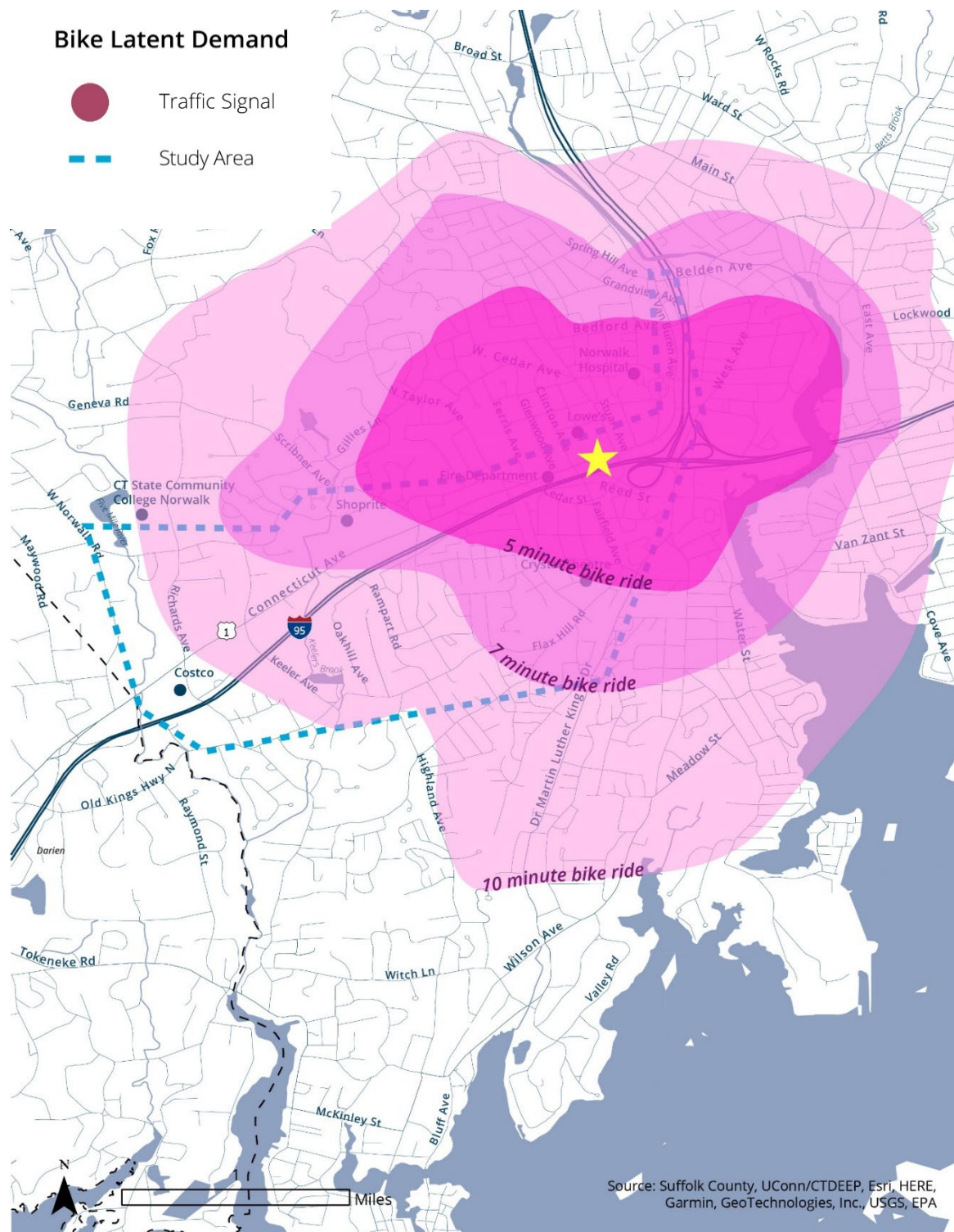


Figure 44. Bicycle Potential Latent Demand



Note: bicycle travel times are approximate based on Google Maps estimates.

Transit

The transit access to the Route 1 study area is an important component of its accessibility to serve residents, employees, and visitors that each abound on the corridor. While infrastructure supporting the bus routes is limited, they provide essential access.

The Norwalk Transit District (NTD) provides public transportation in Norwalk through the WHEELS fixed-route bus service, commuter shuttles, the shuttle ride sharing service Wheels2U, and Dispatch-A-Ride ADA services. Five of the nine system routes travel along the study corridor and provide mobility access to destinations such as the Norwalk Community College, Norwalk Hospital, and to retail stores such as Walmart and Lowe's. The regional Coastal Link provides access to Fairfield, Bridgeport, Stratford, and Milford, operated by CT Transit. There are also six commuter shuttles that have stops along the study area of Route 1 and provide access to destinations such as essential transit stations, the Norwalk Hospital, and commercial corridors.

NTD also operates Wheels 2U, a ride sharing shuttle service. It is an on-demand service using the Via platform operationally funded by the Connecticut Department of Transportation. Wheels 2U provides shuttle service from 7 AM to 7 PM on Mondays through Wednesdays, 7 AM to 11 PM on Thursdays and Fridays, 1 PM to 12 AM on Saturdays, and 1 PM to 9 PM on Sundays. To participate, riders use an app to request and pay for rides which are at a flat price per ride.

According to ridership data from October 2023, approximately 463 passengers are served by NTD on a daily basis along Route 1. On average, more passengers are served daily on weekends (516 passengers) compared to weekdays (447 passengers). The data indicates that WHEELS Routes 11 and 13 carry the most transit riders on the corridor and that westbound riders account for nearly double eastbound riders. Boardings are moderately higher during weekends compared to weekdays (by 15%) with a peak in average boardings by hour in the mornings between 9 to 11 AM. Buses do not appear to consistently stop in one location associated with a given stop. Beyond the individual boardings on the corridor, the significant destinations that are accessed by Route 1 (Norwalk Hospital, CT State Community College Norwalk) suggest notable on-board ridership, though this data is not available from NTD.

Based on CT Transit ridership data from October 2023, Route 341 serves 553 daily weekday boardings within the study area on Connecticut Avenue. The highest concentrations of boardings exist at the following stops: Connecticut Avenue at Richards Avenue, Norwalk Community College at West Campus, and Connecticut Avenue at Pearl Vision.

Table 6. Transit Routes Serving Route 1

Operator	Route	Hours of Operation	Frequency	Origin & Destination
NTD	WHEELS Route 1	5:50 AM – 5:35 PM	Every 40 minutes with no service between 10:20 AM -1:40 PM	Hub – Ponus & Spring Hill Avenue
NTD	WHEELS Route 9	5:50 AM – 7:20 PM, service ends at 6:55 PM on weekends	Every 20 minutes	Hub – South Norwalk Dock
NTD	WHEELS Route 11	5:40 AM – 8:15 PM	Every 20 minutes	Hub - Norwalk Community College
NTD	WHEELS Route 13	5:50 AM – 7:35 AM	Every 40 minutes	Hub – Norwalk Community College
NTD	Connecticut Avenue	7:20 PM – 10:30 PM; 8:40 AM – 8:05 PM for all-day Sunday service	Every 30 minutes; Every 40 minutes on Sundays	Hub – Norwalk Community College
NTD	Norwalk Hospital Belden Commuter Shuttle	6:45 AM – 9:30 AM and 3:08 PM – 6:31 PM	Every 30 minutes	Hub – Monroe Street & Dr Martin Luther King Jr. Drive
CT Transit	341	4:55 AM – 11:45 PM; 5:40 AM – 9:47 PM for Saturday service	Every 20-30 minutes	Hub – Stamford Transportation Center
CT Transit	341-C	7:10 AM – 11:05 PM; 7:20 AM – 1:10 PM for Saturday service	Every 1-2 hours	Hub – Stamford Transportation Center
NTD/GBT	Coastal Link	5:29 AM – 11:06 PM; 5:55 AM – 11:34 PM for Saturday service; 7:30 AM – 8:21 PM for Sunday service	Every 30 minutes on weekdays and Saturdays, every 1 hour on Sundays	Hub – Westfield Connecticut Post Mall

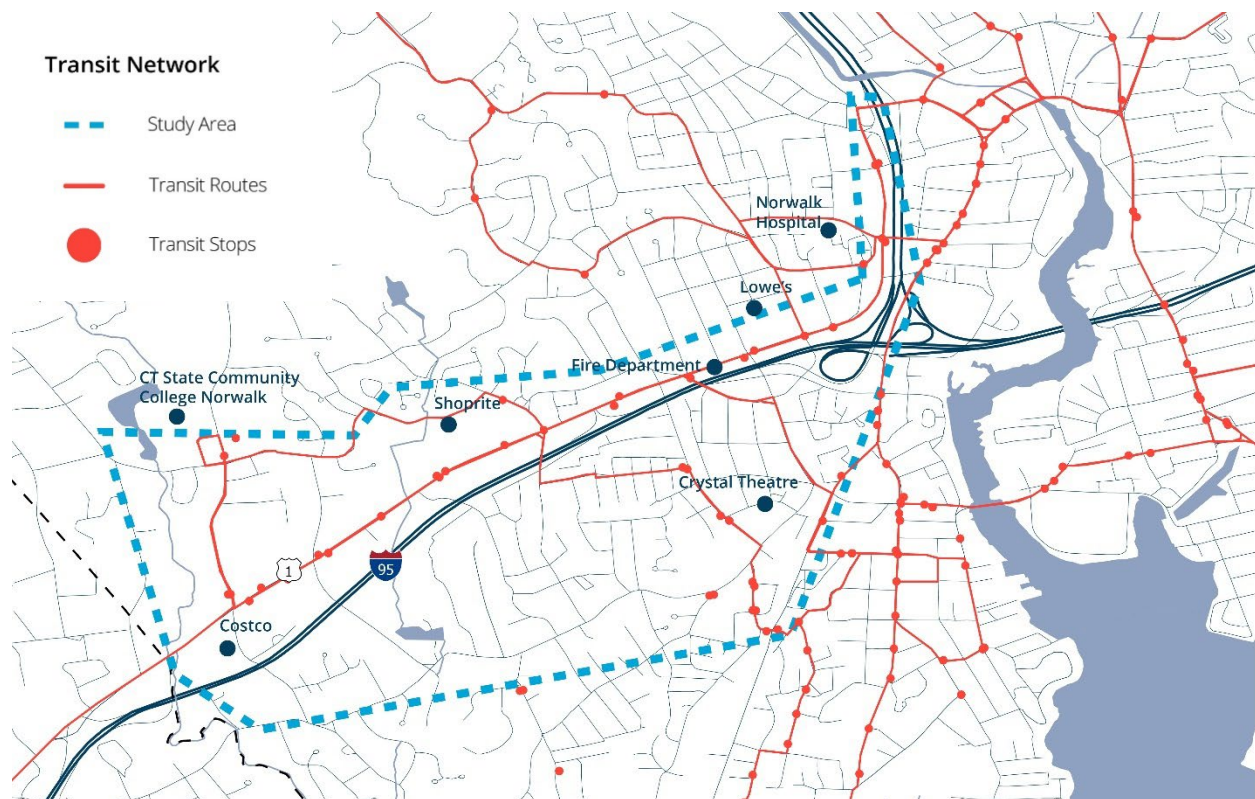
Table 7. Top NTD Stops by Boardings Data

Stop Location	Estimated Boardings (October 2023)	Average Daily Boardings
Route 1 between Taylor Ave and Fairfield Ave	1,672	64
Route 1 and Richards Ave in front of Walmart	1,634	60
Route 1 between Taylor Ave and Glenwood Ave	1,460	56
Route 1 near Scribner Ave in front of T.J. Maxx	1,186	46
Route 1 and Scriber Ave in front of Shell Gas Station	1,069	41
Route 1 near Keeler Avenue in front of Town Fair Tire	976	38
Richards Ave near Route 1 across from KFC	727	27
Route 1 and Maple Street near Norwalk Hospital	682	26
Route 1 near Scribner Ave in front of Best Buy	512	19

Source: Norwalk Transit District for WestCOG

Note: Individual boarding data from October 2023 was analyzed and grouped by stop through relative geographic locations.

Figure 45. Transit Service¹¹ Along Route 1



Transit riders are also pedestrians, and therefore issues pertaining to safety, comfort, and accessibility at the street and sidewalk level also pertain to NTD riders. Marked bus stops are located along the Route 1 corridor in both directions with an average spacing of 700 feet. Bus stops close to signalized intersections with crosswalks are inherently safer and more comfortable for riders, as mid-block crossings force a choice between a longer walk to destinations and a dangerous crossing of Route 1 without any signal control.



Transit Rider Crossing for Bus Near Richards Avenue and Route 1 (Source: FHI Studio)

¹¹ Map portrays all NTD bus stops (including shuttle stops) and NTD WHEELS bus service routes (but not shuttle routes).

Bus stops are located within 200-300 feet of signalized intersections and are often placed close to commercial driveways. On the eastern portion of the corridor, bus stops are located more closely to pedestrian signals while on the western portion of the corridor, bus stops are located further from signalized intersections. Moreover, during project outreach, transit riders were witnessed running across the corridor at locations without intersections or signals to catch a bus on the western portion of the corridor. This behavior was also cited to be common by transit riders due to the absence of timely and well-positioned pedestrian infrastructure to facilitate safe crossings.

The availability of benches and shelters for transit riders varies across the study area, and frequently amenities are only available for stops in one direction of a two-way pair of corresponding stops. For instance, the opposing bus stops near Scribner Avenue (in front of T.J. Maxx) and Rampart Road (in front of ShopRite) have varying amenities: the bus stops for eastbound service have bus shelters and benches while the bus stops for westbound service only have benches and not shelter. The absence of facilities at bus stops is especially apparent based on rider behavior: tree roots are used as benches; clusters of trees are used to shield from the rain, and makeshift paths indicate shortcuts that riders use to quickly access bus stops from retailers. A local organization has provided temporary benches in some locations.

Regional Rail Connections

Within the study area, regional access is provided by MTA stations South Norwalk, Merritt 7, and Rowayton. South Norwalk and Rowayton are serviced by the New Haven line (New Haven to New York City) and Merritt 7 is served by the Danbury line (Danbury to New York City) on the MTA Metro-North Railroad. In 2023, the annual ridership of the Inner New Haven Branch was 2.12 million and .28 million on the Danbury Branch, accounting for 4% of the entire Metro-North system's 2023 ridership (at 60.14 Million).¹²

On the New Haven line to New York City, trains arrive every twenty minutes on weekday morning peaks, every thirty minutes on weekday afternoons and evening, and every thirty minutes to one hour on weekends. On the New Haven line to New Haven, trains arrive every thirty minutes on weekday morning peaks, every ten to thirty minutes on weekday evening peaks, and every hour on weekday non-peak times and weekends. On the Danbury line, on-peak trains in both directions arrive every forty minutes and off-peak

¹² "Metro-North Railroad 2023 Annual Ridership Report," MTA, <https://new.mta.info/document/138236#:~:text=The%2060.1%20million%20riders%20of,year%20of%20service%20in%201984.&text=Total%20East%20of%20Hudson%20ridership,of%202.6%20million%20annual%20rides>.

trains in both directions arrive every one and a half hours. Late night service is also available for the last run, and there are only two morning peak trains bound for Danbury.

Freight, Access Management, and Parking

Daily vehicle classification data collected by CTDOT in 2023 at count stations along US Route 1 in the study area shows that heavy vehicles, including trucks and buses, comprise approximately 6 to 15 percent of the daily traffic volumes on US Route 1, as illustrated in Figure 46. The highest heavy vehicle percentages are southbound between the intersections of Van Buren Avenue and Connecticut Avenue and US Route 1 and Exit 14 of Interstate 95 where approximately 10 to 15 percent of vehicles are trucks or buses. Based on CTDOT AADT Portable Count data, US Route 1 in adjacent urban areas such as Stamford, Bridgeport and New Haven experience on average 5 to 8 percent of trucks and buses.

Route 1 is marked with numerous driveways particularly west of I-95 Exit 14. These are highly concentrated around the regional commercial destinations which characterize the western segment of the study area. This concentration of driveways in combination with high volumes and speeds on the corridor increases the number of potential conflicts while also contributing to congestion, confusion, and frustration for motorists as they attempt to find a break in traffic. This potential conflict increase is realized with the number and location of clusters of severe crashes on the corridor including one fatality during the five-year horizon of crash data analyzed (as indicated in Figure 47). Many businesses use signage to attempt to provide clarification on which driveway should be used to access the establishment, but this contributes to significant visual clutter on the corridor.



Route 1 Near Scribner Avenue (Source: FHI Studio)

Many of the driveways also act as entrances to drive-throughs, which add convenience for drivers but complicate congestion, visibility, and multimodal safety. The following table includes all the drive-throughs on or adjacent to the corridor.

Table 7 Route 1 Drive-Throughs

Establishment	Address	Unique Driveways	Permit Left Turns Exiting?
McDonald's	726 Connecticut Avenue	2 – both on Route 1	Yes
KFC	75 Richards Avenue	2 – both on Richards Avenue	Yes
First County Bank	700 Connecticut Avenue	2 – entrance on Route 1, exit on Richards Avenue	Yes
Donut Delight	707 Connecticut Avenue	1 – entrance/exit on Richards Avenue	Yes
Wells Fargo Bank	667 Connecticut Avenue	0 – shared driveway on Route 1	Yes
Citi Bank	586 Connecticut Avenue	2 – entrance on Route 1, entrance/exit on Keeler Avenue	Yes
Burger King	575 Connecticut Avenue	2 – both on Route 1 on Route 1	No
Dunkin'	544 Connecticut Avenue	1 – exit on Route 1, entrance is shared	Yes
Starbucks	524 Connecticut Avenue	0 – shared driveway on Route 1	Yes
Popeyes Louisiana Kitchen	497 Connecticut Avenue	2 – both on Route 1	No
Wendy's	496 Connecticut Avenue	0 – shared driveway on Route 1	Yes
Chick-fil-A	467 Connecticut Avenue	0 – shared driveway on Rampart Road	Yes
Webster Bank	402 Connecticut Avenue	1 – exit on Route 1; entrance is shared	No
CVS	281 Connecticut Avenue	2 – entrance/exits on Route 1 and Scribner Avenue	Yes
Fred's Car Wash	64 Connecticut Avenue	2 – entrance/exits on Route 1	Yes

Much of the development in the study area was designed with large setbacks to allow for large parking lots to exist in the front of the building. Many of these commercial buildings share parking, but equal numbers do not. Although some uses have a high demand for parking, other lots appear to have excess capacity, as indicated in aerial imagery for the western segment of the study area (see Figure 47). As an example, Stop & Shop's parking lot appears fairly empty while ShopRite's, just across the street, is fuller. Similarly, the parking lots of Home Depot and Dick's Sporting Goods appear to have significant capacity available.) The new zoning regulations, passed in 2024, offer an opportunity for the city to achieve a higher productivity of land along the corridor through an update of parking minimums.

Figure 46. Heavy Vehicle Traffic

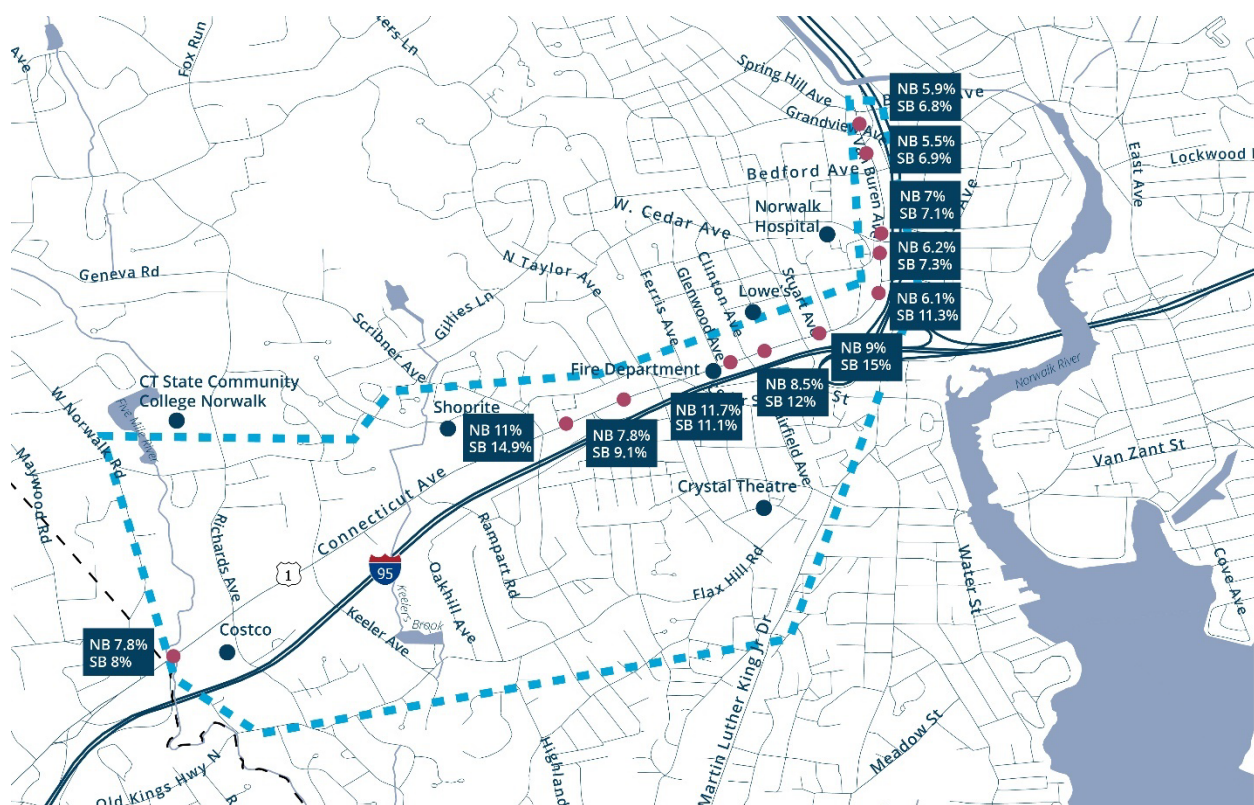


Figure 47. West Norwalk Road to Exit 14 Driveways, Parking, and Severe Crashes



There are concentrations of serious injury crashes outside of signalized intersections along the western segment of the study area, at big box commercial driveways.

6. ISSUES AND OPPORTUNITIES

This assessment of existing transportation and land use along the Route 1 corridor and in the study area more broadly highlighted a number of areas of improvement and opportunities to enhance the functionality of the corridor to meet the vision and goals for the study, as articulated through public and stakeholder engagement and echoed in the documented planning context for the area. These issues and opportunities are highlighted below, sorted into four geographical segments with the addition of corridor-wide issues and opportunities. The next steps in the study will review how future growth affect the transportation system, and this will be followed by the commencement of concept development to address the issues and opportunities identified herein.

Corridor-wide

Issues	Opportunities
• Limited tree canopy contributes to heat island effect. • Insufficient pedestrian crossing time • Inefficient vehicle phasing • Auto-oriented development hinders walkability. • There are gaps in the sidewalk network. • Lack of transit shelters and benches. • Pedestrians frequently cross at unmarked locations because of long distances between intersections. • There is a lack of pedestrian-scale lighting contributing to a lack of comfort and perception of safety issues on the corridor.	• Where there are sidewalks, they are in good condition and most have pedestrian signals and crosswalks. • Strong transit ridership on the corridor, particularly to retail destinations, justify transit stop improvements and possibly transit-priority measures. • Proximity to Northeast Corridor rail service and Danbury line at South Norwalk Station. • New zoning code will promote more pedestrian-oriented design and density. • Pedestrian refuge islands may help facilitate safer crossings.

Van Buren Avenue from Connecticut Avenue to Belden Avenue

Issues	Opportunities
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• Steep grade creates visibility challenges and limits connectivity to local streets. • Jefferson Elementary School experiences congestion during pick-up and drop-off times. • Relatively large pedestrian volumes at Maple Street throughout the day; intersections near school has high pedestrian volumes during peak times. • Maple Street intersection is a high-crash location with a concentration of primarily angled crashes. Crashes in the vicinity of the school are side swipes and rear-end crashes. • There is a lack of bike lanes, signage for shared roads, and bike parking. East-west alternatives to Route 1 are limited, due in part to significant grades on either side of the corridor. • Sidewalks generally exist on only one side of the street at a time, so pedestrians need to cross multiple times to stay on Route 1. • Significant gaps in the sidewalk network exist within the neighborhoods on either side of the Route 1/ I-95 corridors. • Anecdotal evidence suggests that running red lights at Grandview Avenue is common. Documented 85th percentile speeds exceed speed limits by nearly 10 mph.	• Relatively lower AADT of about 13,000 vehicles, which could indicate possibility for road diet. • Norwalk River Valley Trail is major recreational asset and can generate relatively high bike and pedestrian volumes. • Much of the study area falls within a 10-minute bicycle ride, as well as Sono and its train station. • Traffic generally slows at the curve, and there is a drop in crashes between intersections.
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Connecticut Avenue from Taylor Avenue to Van Buren Avenue

Issues	Opportunities
• The Fairfield Avenue Bridge is currently being replaced due to a fire in spring 2024. • The close proximity between the Taylor Avenue and Cedar Street intersections contribute to operational challenges including weaving movements, significant vehicle delay of more than 55 seconds. • The Cedar Street intersection in effect has 5 legs due to the Cedar Street entrance, a particularly unsafe maneuver. • The roadway segment between Taylor Avenue and Clinton Avenue has a relatively high number of crashes, particularly angle and rear-end crashes. • Significant gaps in the sidewalk network exist within the neighborhoods on either side of the Route 1/I-95 corridors. • Noise levels and a lack of street trees contribute to an uncomfortable pedestrian environment. • The Elmcrest Terrace intersection (one-way) presents a dangerous merge onto Route 1 due to limited sight lines from the roadway curve.	• Relatively lower AADT of about 16,000 - 13,000 vehicles, which could indicate possibility for road diet. • Relatively high number of pedestrians on the corridor from Taylor Avenue to Stuart Avenue, with PM peak period, experiencing the highest volumes. • In this segment of the study area, residential neighborhoods exist within 0.25 miles of Route 1. • Much of the study area falls within a 10-minute bicycle ride, as well as Sono and its train station. This portion of the corridor could provide a better connection between Sono and CT State Community College – Norwalk. • Commercial properties within this segment are typically smaller, with fewer big-box chain retailers. • Limited setbacks and higher density reflect a pedestrian-oriented environment. • Closing vehicular access to West Cedar Street and Elmcrest Terrace from Route 1 may offer substantial operational and safety benefits.

Connecticut Avenue from Rampart Road to Taylor Avenue

Issues	Opportunities
• Scribner Avenue intersection has significant vehicle delay of more than 55 seconds. • Scribner Avenue intersection and adjacent Exit 14 ramps are the highest	• Sidewalks are present on both sides of the street and are generally in good condition.

crash locations citywide. Rear-end and angle crashes are common at both locations. • Slopes in the intersection vicinity may contribute to operational and safety challenges at the intersection. • Nearby residents struggle to exit their neighborhood due to the high volume of vehicles using Scribner Avenue. • Access management at big box retailers creates additional conflict points and visual clutter. • Large setbacks and long blocks create lengthy walk for pedestrians and transit riders. • There is a perception of discarded trash in this section of the study area.	• Much of the study area falls within a 10-minute bicycle ride, as well as Sono and its train station. • Proactive congestion management may offer the potential for reducing unsignalized right-turn pockets along the corridor, helping to decrease pedestrian crossing distance and providing space for amenity zones. • Bike lanes on Scribner Avenue and Highland Avenue south of the study area provide a bike connection to Flax Hill and Sono neighborhoods. • The blind curve at Scribner Avenue and associated grading may need to be addressed in a long-term concepts but interim signaling updates may alleviate some conflicts.
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Connecticut Avenue from Darien Town Line to Rampart Road

Issues	Opportunities
• Keeler Brook and Five Mile River are within floodplains south of Route 1. • Keeler Avenue intersection has significant vehicle delay of more than 55 seconds. • Richards Avenue intersection is a high-crash location, primarily consisting of angle crashes. • Access management at big box retailers creates additional conflict points and visual clutter. • Large setbacks and long blocks create a lengthy walk and unpleasant conditions for pedestrians and transit riders. • A lack of tree canopy hinders pedestrian and transit rider comfort and contribute to an unappealing aesthetic for travelers entering Norwalk from the west. • There are gaps in the sidewalk network, particularly near Fivemile River and near Wendy's (at 496 Connecticut Avenue).	• There could be gateway opportunities on the town line. • Most roadway segments have sidewalk coverage, though there are some gaps and maintenance needs. Sidewalk gaps including at Five Mile River and near Wendy's should be completed. • Much of the study area falls within a 10-minute bicycle ride, as well as SoNo and its train station. • Proactive congestion management may offer the potential for reducing unsignalized right-turn pockets along the corridor, helping to decrease pedestrian crossing distance and providing space for amenity zones. • Improved and dynamic signal timing may reduce travel delay, and offer the potential to increase pedestrian signal timing. • Bike lanes on Richard Avenue provide a north/south connection along the western end of the corridor. • Connectivity from SoNo to CT State Community College – Norwalk runs through the study area and warrants improvements to transit and bicycle facilities. • Parking seems overbuilt at many big box stores, so there may be opportunity for shared parking of future developments.



Appendix A:
Roadway Classification and Geometric
Considerations – Flax Hill Road, W. Cedar
Street

ROADWAY CLASSIFICATION AND GEOMETRIC CONSIDERATIONS

Flax Hill Road

Flax Hill Road is a minor arterial travelling in the north-south direction that parallels Route 1 and I-95. It starts from Rampart Road and ends at Washington Street adjacent to Dr. Martin Luther King Jr. Drive. It is a two-lane road that travels through residential neighborhoods with large setbacks, no traffic lights or stop signs. Many residential driveways are accessed along the road. The roadway has one lane of travel in each direction that is separated by two solid yellow lines. There are not consistent shoulders, and on-street parking is unmarked. Lane widths average 12 to 14 feet. Turn lanes are provided at Scribner Avenue, and toward the eastern edge of the study area, approaching Sono, lanes and marked shoulders widen. Traffic lights are not available and intersection markings for pedestrian use are sparsely available and only provided when commercial, recreational, and social institutions are nearby. Narrow sidewalks are typically provided on one side of the street.

Table 1. Minor Urban Arterials (3R Projects)

Minor Urban Arterials (3R Projects)				
Design Element		Design Values (by Type of Area)		
		Suburban	Intermediate	Built-Up
Travel Lane Width		11' – 12'	10' – 12'	10' – 12'
Turn Lanes	Lane Width	1' Less than Travel Lane Width – Same as Travel Lane		
	Shoulder Width	1' – 4'	1' – 4'	1' – 4'
Shoulder Width	Right (Non-NHS)	2' – 8'	2' – 8'	2' – 8'
	Right (NHS)	4' – 8'	4' – 8'	4' – 8'
	Left (All)	2' – 4'	2' – 4'	2' – 4'
Sidewalk Width		5' Minimum	5' Minimum	5' Minimum
Parking Lane Width		N/A	9' – 11'	8' – 11'

Source: CTDOT Highway Design Manual 2003 Edition (Including Revisions to January 2023)

West Cedar Street

West Cedar Street is a local road with one lane in each direction that also parallels Route 1 and I-95. It starts from West Norwalk Road near Norwalk Community College, runs behind the commercial corridor retail fronts, and ends at Route 1 at Cedar Street. West Cedar Street is characterized by many curves along residential homes with driveways, and one intermittent sidewalk. The roadway has one lane of travel in each direction, with lane widths averaging 11 feet and separated by two solid yellow lines with no markings for shoulders. It is a winding road with multiple curves due to the topography and has limited visibility due to the varying elevations of hills.

Table 2. Local Urban Arterials (3R Projects)

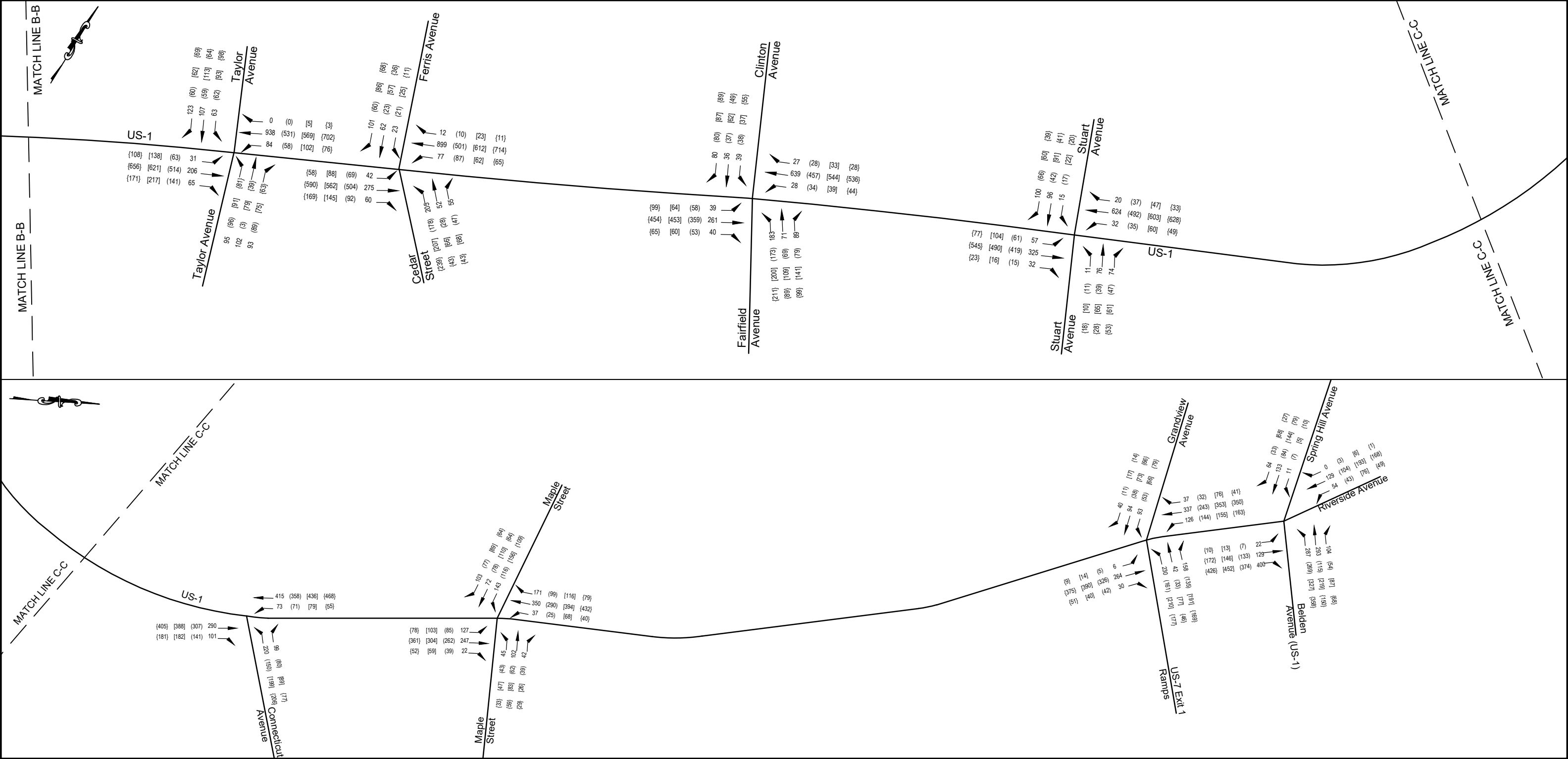
Local Urban Streets (3R Projects)				
Design Element		Design Values (by Type of Area)		
		Suburban	Intermediate	Built-Up
Travel Lane Width		10' – 11'	10' – 11'	9' – 11'
Turn Lanes	Lane Width	1' Less than Travel Lane Width (9' Min.) – Same as Travel Lane		
	Shoulder Width	1' – 4'	1' – 4'	1' – 4'
Shoulder Width		2' – 4'	2' – 4'	2' – 4'
Sidewalk Width		5' Minimum	5' Minimum	5' Minimum
Parking Lane Width		7' – 10'	7' – 11'	7' – 11'

Source: CTDOT Highway Design Manual 2003 Edition (Including Revisions to January 2023)



Appendix B:

Existing Conditions Traffic Volumes



XX (XX) [XX] {XX} = AM (Midday) [PM] {Saturday}
Peak Hour Volumes

Existing Conditions Traffic Volumes

WESTCOG ROUTE 1 CORRIDOR MASTER PLAN STUDY

HIGHWAY CAPACITY MANUAL & ANALYSIS METHODOLOGY

SIGNALIZED INTERSECTIONS

The operation of signalized intersections in the study area was analyzed by applying the Percentile Delay Methodology included in the Synchro 11 traffic signal software. The Percentile Delay Methodology differs from the *Highway Capacity Manual (HCM)* Methodology by calculating vehicle delays for five different percentile scenarios (10th, 30th, 50th, 70th and 90th) and taking the volume weighted average of the scenarios as compared to HCM which calculates delay for a single average scenario. In addition, the Percentile Delay Methodology includes an additional queue delay component to account for the effects of queues and blocking on short links and turning bays. The methodology evaluates signalized intersections for average delay per vehicle and level of service (LOS).

LOS can be characterized for the entire intersection, each intersection approach, and each lane group. Delay alone is used to characterize LOS for the entire intersection or an approach. Total delay and volume-to-capacity (v/c) ratio are used to characterize LOS for a lane group. The volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group.

LOS A describes operation with a delay of 10 seconds per vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable, or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operation with delay between 10 and 20 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable, or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operation with delay between 20 and 35 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is favorable, or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operation with delay between 35 and 55 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective, or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E describes operation with delay between 55 and 80 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operation with delay exceeding 80 seconds per vehicle or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

A lane group can incur a delay less than 80 seconds per vehicle when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when

lane group LOS is established. A ratio of 1.0 or more indicates that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80 seconds per vehicle represents failure from a delay perspective).

The delay criteria for the range of service levels for signalized intersections are shown in **Table 1**.

Table 1
LOS Criteria for Signalized Intersections

Total Delay Per Vehicle	Level-of-Service (LOS) ⁽¹⁾	
	v/c ratio ≤ 1.0	v/c ratio > 1.0
≤ 10.0 seconds	A	F
>10.0 and ≤ 20.0 seconds	B	F
>20.0 and ≤ 35.0 seconds	C	F
>35.0 and ≤ 55.0 seconds	D	F
>55.0 and ≤ 80.0 seconds	E	F
>80.0 seconds	F	F
Note: (1) For approach-based and intersection-wide assessments, LOS is defined solely by delay. Source: Transportation Research Board. <i>Highway Capacity Manual 6th Edition</i> .		

UNSIGNALIZED INTERSECTIONS

The operation of unsignalized intersections was analyzed by utilizing the Synchro 11 traffic signal software. LOS for two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections is determined by the computed or measured control delay using *Highway Capacity Manual 6th Edition* (HCM) Methodology. For vehicles, LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns at TWSC intersections and for all movements at AWSC intersections. Per the HCM, LOS is not defined for the intersection as a whole for TWSC intersections for three primary reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles at a typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay for all vehicles; and (c) the resulting low delay can mask LOS deficiencies for minor movements.

Total delay and volume-to-capacity (v/c) ratio are used to characterize LOS for a lane group. The volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group.

LOS A describes operation with a delay of 10 seconds per vehicle or less and a volume-to-capacity ratio no greater than 1.0.

LOS B describes operation with delay between 10 and 15 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0.

LOS C describes operation with delay between 15 and 25 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0.

LOS D describes operation with delay between 25 and 35 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0.

LOS E describes operation with delay between 35 and 50 seconds per vehicle and a volume-to-capacity ratio no greater than 1.0.

LOS F describes operation with delay exceeding 50 seconds per vehicle or a volume-to-capacity ratio greater than 1.0.

A lane group can incur a delay less than 50 seconds per vehicle when the volume-to-capacity ratio exceeds 1.0. A ratio of 1.0 or more indicates that capacity is fully utilized and represents failure

from a capacity perspective (just as delay in excess of 50 seconds per vehicle represents failure from a delay perspective).

The LOS criteria for both TWSC and AWSC unsignalized intersections are summarized in **Table 2**. At TWSC intersections, drivers on the stop-controlled approaches are required to select gaps in the major-street flow in order to execute crossing or turning maneuvers. In the presence of a queue, each driver on the controlled approach must also use some time to move into the front-of-queue position and prepare to evaluate gaps in the major-street flow. AWSC intersections require drivers on all approaches to stop before proceeding into the intersection.

Table 2
LOS Criteria for Unsignalized Intersections

Control Delay Per Vehicle	Level-of-Service (LOS) ⁽¹⁾	
	v/c ratio ≤ 1.0	v/c ratio > 1.0
≤ 10.0 seconds	A	F
>10.0 and ≤ 15.0 seconds	B	F
>15.0 and ≤ 25.0 seconds	C	F
>25.0 and ≤ 35.0 seconds	D	F
>35.0 and ≤ 50.0 seconds	E	F
>50.0 seconds	F	F
Note: (1) For TWSC intersections, the LOS criteria apply to each lane on a given approach and to each approach on the minor street (for TWSC intersections). LOS is not calculated for major-street approaches or for the intersection as a whole. Source: Transportation Research Board. <i>Highway Capacity Manual 6th Edition</i>		

INTERSECTION CAPACITY ANALYSES

Traffic operating conditions at each study intersection were analyzed using the Synchro software to compute delays, v/c ratios, and LOS as described above. Capacity analysis results are presented in **Table 3** and **Table 4**.

	Intersection	Lane Group	Existing AM				
			V/C Ratio	Delay (s)	LOS	Queue Length 50th% (ft)	Queue Length 95th% (ft)
1	US Route 1 & W Norwalk Rd	SB-LR	0.67	30.7	D		96
		EB-LTT	0.05	11.4	B		20
		EB-T	0.00	0.3	A		0
2	I-95 NB Exit 13 Off Ramp & US Route 1	NB-L	0.60	51.3	D	75	#236
		NB-TR	0.52	12.0	B	11	68
		NB-R	0.49	9.4	A	0	53
		SB-L	0.03	39.0	D	2	7
		SB-R	0.01	0.0	A	0	0
		EB-L	0.21	43.8	D	13	36
		EB-TT	0.10	5.6	A	16	39
		WB-TTR	0.61	13.2	B	105	239
		Overall		15.1	B		
3	Richards Ave & Connecticut Avenue/US Route 1	NB-L	0.54	45.5	D	53	85
		NB-TR	0.44	33.2	C	53	85
		SB-L	0.50	44.4	D	44	80
		SB-T	0.39	37.7	D	50	84
		SB-R	0.60	10.1	B	0	57
		EB-L	0.65	60.7	E	60	#120
		EB-TTR	0.19	9.6	A	35	72
		WB-L	0.39	55.8	E	31	64
		WB-TT	0.38	12.1	B	67	290
		WB-R	0.07	1.9	A	0	9
		Overall		20.1	C		
4	Liquidators Driveway/Walmart Driveway & US Route 1	NB-L	0.01	33.0	C	1	4
		NB-TR	0.01	0.0	A	0	0
		SB-LT	0.03	34.0	C	3	13
		SB-R	0.36	8.2	A	0	31
		EB-L	0.15	47.9	D	0	28
		EB-TTR	0.13	2.6	A	0	56
		WB-L	0.04	32.0	C	2	m6
		WB-TTR	0.32	6.3	A	27	173
		Overall		6.1	A		
5	Keeler Ave & US Route 1	NB-L	0.28	42.6	D	22	51
		NB-TR	0.73	61.6	E	55	#130
		SB-LL	0.40	41.7	D	34	60
		SB-TR	0.28	28.1	C	23	65
		EB-L	0.17	43.1	D	12	27
		EB-TTR	0.19	10.6	B	62	106
		WB-L	0.30	62.3	E	20	52
		WB-TT	0.39	6.0	A	36	49
		WB-R	0.17	0.9	A	0	1
		Overall		16.4	B		

6

Rampart Road/Driveway & US Route 1

NB-L	0.52	44.5	D	55	92
NB-TR	0.07	0.2	A	0	0
SB-L	0.03	31.0	C	3	5
SB-TR	0.01	0.0	A	0	0
EB-L	0.03	42.3	D	2	m9
EB-TTR	0.23	10.6	B	86	114
WB-L	0.36	46.5	D	25	58
WB-TT	0.35	6.2	A	72	198
WB-R	0.00	0.0	A	0	0
Overall		11.1	B		

7

US Route 1 & Shop Rite Driveway

SB-LL	0.43	47.1	D	42	67
SB-R	0.35	14.2	B	0	39
EB-L	0.14	3.9	A	5	25
EB-TT	0.17	3.1	A	21	66
WB-TT	0.38	12.8	B	221	383
WB-R	0.14	1.9	A	9	45
Overall		11.6	B		

8

Scribner Avenue & US Route 1

NB-L	0.44	34.9	C	36	69
NB-TR	0.83	63.8	E	107	#202
SB-L	0.41	32.0	C	27	58
SB-TR	0.79	61.1	E	171	#288
EB-L	0.41	40.1	D	19	41
EB-TT	0.15	23.9	C	60	101
EB-R	0.23	1.0	A	0	0
WB-L	0.75	60.6	E	89	m141
WB-TTR	0.76	22.6	C	261	#614
Overall		30.7	C		

9

I-95 Ramps/Global Gas Driveway & US Route 1

NB-LL	0.81	42.8	D	214	213
NB-TR	0.20	9.8	A	9	33
SB-LT	0.09	47.7	D	5	19
SB-R	0.20	2.1	A	0	0
EB-LTTR	0.26	20.5	C	76	m102
WB-L	0.77	26.6	C	151	m#307
WB-TTR	0.53	23.5	C	152	m219
Overall		28.3	C		

10

Taylor Ave & US Route 1

NB-LTR	0.95	71.9	E	182	#346
SB-LTR	0.78	43.8	D	160	#271
EB-L	0.13	10.1	B	6	20
EB-TTR	0.18	8.9	A	24	48
WB-L	0.16	8.7	A	18	m42
WB-TTR	0.57	14.6	B	145	m222
Overall		26.6	C		

11

Cedar Street & US Route 1

NB-L	0.96	85.9	F	135	#274
NB-TR	0.23	16.9	B	30	74
SB-LTR	0.52	27.0	C	86	141
EB-L	0.17	11.6	B	14	m24
EB-TTR	0.24	16.8	B	58	m91
WB-L	0.16	11.2	B	20	51

		WB-TTR	0.57	20.6	C	223	365
		Overall		26.8	C		
12	Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave	NB-L	0.47	23.8	C	83	119
		NB-TR	0.34	15.8	B	45	89
		SB-L	0.19	21.0	C	16	32
		SB-T	0.24	40.3	D	22	51
		SB-R	0.23	1.3	A	0	0
		EB-L	0.15	16.3	B	12	39
		EB-TTR	0.25	20.5	C	65	129
		WB-L	0.06	8.9	A	10	m8
		WB-TTR	0.52	23.8	C	190	m#380
		Overall		20.9	C		
13	Stuart Ave & US Route 1/Van Buren Ave	NB-LTR	0.54	31.3	C	75	129
		SB-LTR	0.91	64.0	E	144	169
		EB-L	0.16	12.7	B	20	58
		EB-TTR	0.23	17.9	B	82	145
		WB-L	0.06	10.1	B	5	30
		WB-TTR	0.39	16.7	B	107	253
		Overall		26.8	C		
14	Van Buren Ave & Connecticut Ave	NB-TTR	0.24	8.1	A	39	93
		SB-LTT	0.27	7.7	A	39	134
		WB-LL	0.51	35.2	D	58	89
		WB-R	0.21	5.7	A	0	34
		Overall		12.7	B		
15	Van Buren Ave & Maple St	NB-LTTR	0.38	9.2	A	15	151
		SB-LTTR	0.38	7.8	A	22	98
		EB-L	0.68	38.9	D	72	102
		EB-TR	0.49	22.2	C	64	103
		WB-L	0.23	23.0	C	21	40
		WB-TR	0.61	35.9	D	73	111
		Overall		16.9	B		
16	Van Buren Ave & Grandview Ave/US 7	NB-L	0.02	15.8	B	2	8
		NB-TR	0.51	25.2	C	105	148
		SB-L	0.38	17.1	B	50	m76
		SB-TR	0.55	23.1	C	160	#349
		EB-LTR	0.78	41.6	D	129	167
		WB-L	0.67	25.4	C	101	126
		WB-TR	0.33	5.2	A	16	41
		Overall		23.9	C		
17	Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave	NB-L	0.04	17.0	B	5	m19
		NB-T	0.18	15.5	B	35	m90
		NB-R	0.37	1.9	A	9	29
		SB-L	0.12	17.0	B	18	51
		SB-TR	0.21	16.8	B	44	99
		EB-LT	0.90	83.5	F	79	#187
		EB-R	0.25	2.2	A	0	0
		WB-L	0.69	26.3	C	114	176
		WB-TR	0.68	24.2	C	163	248

		Overall		22.0	C		
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	Intersection	Lane Group	Existing Midday				
			V/C Ratio	Delay (s)	LOS	Queue Length 50th% (ft)	Queue Length 95th% (ft)
1	US Route 1 & W Norwalk Rd	SB-LR	0.48	28.6	D		50
		EB-LTT	0.11	11.2	B		20
		EB-T	0.00	0.8	A		0
2	I-95 NB Exit 13 Off Ramp & US Route 1	NB-L	0.40	42.0	D	54	#195
		NB-TR	0.54	8.3	A	0	40
		NB-R	0.54	8.2	A	0	38
		SB-L	0.05	34.3	C	4	15
		SB-R	0.05	0.4	A	0	0
		EB-L	0.08	36.7	D	4	17
		EB-TT	0.29	7.5	A	59	107
		WB-TTR	0.59	19.1	B	212	188
		Overall		14.7	B		
3	Richards Ave & Connecticut Avenue/US Route 1	NB-L	0.47	36.5	D	47	80
		NB-TR	0.67	33.6	C	75	121
		SB-L	0.53	42.2	D	37	75
		SB-T	0.36	32.1	C	44	80
		SB-R	0.33	2.8	A	0	8
		EB-L	0.57	50.4	D	47	99
		EB-TTR	0.48	10.6	B	142	#213
		WB-L	0.47	36.0	D	37	81
		WB-TT	0.40	28.5	C	159	254
		WB-R	0.09	3.2	A	1	18
		Overall		22.7	C		
4	Liquidators Driveway/Walmart Driveway & US Route 1	NB-L	0.10	29.8	C	7	21
		NB-TR	0.20	11.8	B	2	24
		SB-LT	0.77	57.2	E	76	#144
		SB-R	0.12	5.7	A	0	21
		EB-L	0.33	48.6	D	20	m54
		EB-TTR	0.41	4.8	A	15	77
		WB-L	0.22	38.5	D	13	37
		WB-TTR	0.43	10.4	B	120	178
		Overall		12.7	B		
5	Keeler Ave & US Route 1	NB-L	0.37	44.2	D	33	68
		NB-TR	0.77	53.5	D	50	#134
		SB-LL	0.62	46.3	D	62	92
		SB-TR	0.52	40.2	D	49	#118
		EB-L	0.27	44.7	D	18	47
		EB-TTR	0.49	16.4	B	164	217
		WB-L	0.47	52.2	D	33	73
		WB-TT	0.42	14.7	B	149	198
		WB-R	0.24	2.8	A	0	36
		Overall		22.7	C		

6

Rampart Road/Driveway & US Route 1

NB-L	0.63	42.2	D	70	121
NB-TR	0.30	9.5	A	5	43
SB-L	0.15	27.4	C	15	33
SB-TR	0.20	11.3	B	6	31
EB-L	0.25	40.7	D	16	45
EB-TTR	0.56	13.8	B	93	239
WB-L	0.51	42.3	D	45	78
WB-TT	0.45	10.9	B	93	214
WB-R	0.05	0.3	A	0	0
Overall		15.4	B		

7

US Route 1 & Shop Rite Driveway

SB-LL	0.43	47.0	D	42	67
SB-R	0.35	14.2	B	0	39
EB-L	0.15	4.3	A	5	28
EB-TT	0.35	4.2	A	53	173
WB-TT	0.37	6.4	A	55	341
WB-R	0.14	0.7	A	0	0
Overall		7.6	A		

8

Scribner Avenue & US Route 1

NB-L	0.54	40.7	D	45	79
NB-TR	0.62	33.4	C	34	87
SB-L	0.44	35.0	D	37	66
SB-TR	0.89	68.7	E	154	#230
EB-L	0.59	61.0	E	54	m105
EB-TT	0.33	16.6	B	122	202
EB-R	0.43	3.2	A	104	69
WB-L	0.78	52.8	D	113	#196
WB-TTR	0.57	24.0	C	213	#346
Overall		26.5	C		

9

I-95 Ramps/Global Gas Driveway & US Route 1

NB-LL	0.79	42.3	D	206	248
NB-TR	0.46	7.9	A	11	68
SB-LT	0.35	55.7	E	21	50
SB-R	0.28	3.0	A	0	0
EB-LTTR	0.50	12.1	B	77	82
WB-L	0.47	15.0	B	59	112
WB-TTR	0.41	22.7	C	140	218
Overall		22.9	C		

10

Taylor Ave & US Route 1

NB-LTR	0.78	43.3	D	69	#159
SB-LTR	0.81	49.9	D	93	145
EB-L	0.13	8.3	A	9	39
EB-TTR	0.38	13.2	B	87	197
WB-L	0.14	4.4	A	8	m22
WB-TTR	0.31	7.9	A	52	80
Overall		19.0	B		

11

Cedar Street & US Route 1

NB-L	0.77	49.3	D	91	146
NB-TR	0.20	12.3	B	12	42
SB-LTR	0.39	14.8	B	25	46
EB-L	0.15	7.4	A	9	m24
EB-TTR	0.38	12.1	B	58	115
WB-L	0.21	18.1	B	34	84
WB-TTR	0.33	25.2	C	135	205

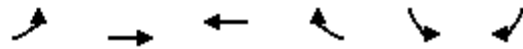
12	Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave	Overall		20.6	C		
		NB-L	0.38	19.2	B	58	94
		NB-TR	0.28	13.3	B	29	71
		SB-L	0.15	17.5	B	12	28
		SB-T	0.18	33.7	C	18	46
		SB-R	0.18	0.9	A	0	0
		EB-L	0.18	18.9	B	7	56
		EB-TTR	0.36	22.9	C	28	#190
		WB-L	0.09	20.2	C	14	m48
		WB-TTR	0.46	35.4	D	144	#284
13	Stuart Ave & US Route 1/Van Buren Ave	Overall		24.5	C		
		NB-LTR	0.56	32.1	C	31	76
		SB-LTR	0.80	51.6	D	51	#106
		EB-L	0.13	4.0	A	4	16
		EB-TTR	0.24	6.9	A	21	176
		WB-L	0.07	7.3	A	4	27
		WB-TTR	0.33	12.8	B	68	189
		Overall		16.0	B		
14	Van Buren Ave & Connecticut Ave	NB-TTR	0.26	7.3	A	36	92
		SB-LTT	0.27	6.1	A	37	87
		WB-LL	0.35	31.6	C	35	61
		WB-R	0.18	6.3	A	0	30
		Overall		9.9	A		
15	Van Buren Ave & Maple St	NB-LTTR	0.31	6.6	A	28	52
		SB-LTTR	0.28	7.9	A	12	77
		EB-L	0.49	28.6	C	50	82
		EB-TR	0.49	23.6	C	53	99
		WB-L	0.24	22.4	C	20	36
		WB-TR	0.48	27.2	C	41	70
		Overall		13.8	B		
16	Van Buren Ave & Grandview Ave/US 7	NB-L	0.01	11.6	B	1	7
		NB-TR	0.58	21.2	C	121	183
		SB-L	0.41	15.6	B	54	m66
		SB-TR	0.33	15.7	B	108	m215
		EB-LTR	0.54	34.5	C	56	82
		WB-L	0.51	23.5	C	72	95
		WB-TR	0.36	6.6	A	14	38
		Overall		18.9	B		
17	Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave	NB-L	0.01	16.4	B	1	m7
		NB-T	0.17	14.1	B	28	m93
		NB-R	0.38	2.3	A	0	15
		SB-L	0.09	13.2	B	12	36
		SB-TR	0.16	12.9	B	30	71
		EB-LT	0.66	53.1	D	51	#102
		EB-R	0.14	1.1	A	0	0
		WB-L	0.70	29.6	C	106	#179
		WB-TR	0.32	16.3	B	50	99
		Overall		16.8	B		

	Intersection	Lane Group	Existing PM				
			V/C Ratio	Delay (s)	LOS	Queue Length 50th% (ft)	Queue Length 95th% (ft)
1	US Route 1 & W Norwalk Rd	SB-LR	0.62	41.1	E		72
		EB-LTT	0.18	11.1	B		20
		EB-T	0.00	2.5	A		0
2	I-95 NB Exit 13 Off Ramp & US Route 1	NB-L	0.39	41.3	D	50	#205
		NB-TR	0.56	8.5	A	1	67
		NB-R	0.56	8.4	A	0	65
		SB-L	0.08	32.5	C	6	20
		SB-R	0.20	1.4	A	0	0
		EB-L	0.05	33.5	C	3	14
		EB-TT	0.34	7.4	A	63	121
		WB-TTR	0.49	14.8	B	117	204
		Overall		12.0	B		
3	Richards Ave & Connecticut Avenue/US Route 1	NB-L	0.55	38.9	D	57	81
		NB-TR	0.70	35.0	D	85	112
		SB-L	0.52	42.5	D	33	71
		SB-T	0.36	31.5	C	47	87
		SB-R	0.39	4.4	A	0	24
		EB-L	0.77	42.0	D	78	m142
		EB-TTR	0.56	11.6	B	206	#415
		WB-L	0.36	34.0	C	26	61
		WB-TT	0.33	33.4	C	119	180
		WB-R	0.17	8.8	A	7	38
4	Liquidators Driveway/Walmart Driveway & US Route 1	Overall		23.0	C		
		NB-L	0.08	29.4	C	6	17
		NB-TR	0.15	11.5	B	0	17
		SB-LT	0.78	58.7	E	75	#160
		SB-R	0.10	6.9	A	0	20
		EB-L	0.28	49.6	D	18	m39
		EB-TTR	0.44	4.0	A	17	73
		WB-L	0.13	37.3	D	7	25
		WB-TTR	0.40	9.7	A	107	160
5	Keeler Ave & US Route 1	Overall		11.5	B		
		NB-L	0.34	35.3	D	28	53
		NB-TR	0.71	43.5	D	47	#96
		SB-L	0.45	34.1	C	40	65
		SB-TR	0.60	41.5	D	77	#191
		EB-L	0.30	37.3	D	20	50
		EB-TTR	0.65	20.3	C	212	293
		WB-L	0.32	40.3	D	17	59
		WB-TT	0.32	11.9	B	66	75
6	Rampart Road/Driveway & US Route 1	WB-R	0.21	3.7	A	3	37
		Overall		22.6	C		
		NB-L	0.61	37.8	D	66	106
		NB-TR	0.29	8.2	A	3	34
		SB-L	0.14	25.0	C	13	27
		SB-TR	0.13	11.0	B	3	20
		EB-L	0.18	36.6	D	12	m26
		EB-TTR	0.73	15.9	B	40	#432
		WB-L	0.55	39.9	D	52	97
		WB-TT	0.31	9.6	A	54	152
		WB-R	0.03	0.0	A	0	0
		Overall		16.4	B		

Lanes, Volumes, Timings

1: US Route 1 & W Norwalk Rd

09/16/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	27	203	986	122	16	197
Future Volume (vph)	27	203	986	122	16	197
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						
Frt			0.983		0.875	
Flt Protected		0.994			0.996	
Satd. Flow (prot)	0	3454	3381	0	1641	0
Flt Permitted		0.994			0.996	
Satd. Flow (perm)	0	3454	3381	0	1641	0
Link Speed (mph)		30	35		35	
Link Distance (ft)		588	464		319	
Travel Time (s)		13.4	9.0		6.2	
Confl. Peds. (#/hr)						2
Peak Hour Factor	0.91	0.91	0.96	0.96	0.79	0.79
Heavy Vehicles (%)	3%	4%	4%	5%	0%	1%
Bus Blockages (#/hr)	0	0	4	0	0	0
Adj. Flow (vph)	30	223	1027	127	20	249
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	253	1154	0	269	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.01	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Lanes, Volumes, Timings
1: US Route 1 & W Norwalk Rd

09/16/2024

Intersection Capacity Utilization 51.1%
Analysis Period (min) 15

ICU Level of Service A

Lanes, Volumes, Timings
2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	21	182	0	0	982	10	125	20	342	2	0	2	
Future Volume (vph)	21	182	0	0	982	10	125	20	342	2	0	2	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	11	11	11	12	12	14	
Storage Length (ft)	105		0	0		0	430		450	75		0	
Storage Lanes	1		0	0		0	1		1	1		1	
Taper Length (ft)	90			25			100			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	
Frt					0.998			0.866	0.850			0.850	
Flt Protected	0.950						0.950			0.950			
Satd. Flow (prot)	1685	3242	0	0	3119	0	1601	1434	1399	1805	0	1723	
Flt Permitted	0.950						0.950			0.950			
Satd. Flow (perm)	1685	3242	0	0	3119	0	1601	1434	1399	1805	0	1723	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)					1			191	207			143	
Link Speed (mph)		35			35			30			30		
Link Distance (ft)		464			619			634			228		
Travel Time (s)		9.0			12.1			14.4			5.2		
Peak Hour Factor	0.86	0.86	0.86	0.85	0.85	0.85	0.86	0.86	0.86	0.50	0.50	0.50	
Heavy Vehicles (%)	0%	7%	0%	0%	5%	0%	9%	0%	6%	0%	0%	0%	
Bus Blockages (#/hr)	0	3	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)					4								
Adj. Flow (vph)	24	212	0	0	1155	12	145	23	398	4	0	4	
Shared Lane Traffic (%)									48%				
Lane Group Flow (vph)	24	212	0	0	1167	0	145	214	207	4	0	4	
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)		12			12			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.05	1.04	1.09	1.13	1.04	1.04	1.04	1.04	1.00	1.00	0.92	
Turning Speed (mph)	15		9	15		9	15		9	15		9	

Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report
Page 3

Lanes, Volumes, Timings
2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Number of Detectors	1	2			2		1	2	1	1		1	
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right	
Leading Detector (ft)	20	100			100		20	100	20	20		20	
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			6		20	6	20	20		20	
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					
Detector 2 Size(ft)		6			6			6					
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex					
Detector 2 Channel													
Detector 2 Extend (s)		0.0			0.0			0.0					
Turn Type	Prot	NA			NA		Prot	NA	Perm	Prot		pm+ov	
Protected Phases	1	1 2			2		4	3 4		5		1	3
Permitted Phases									3 4			5	
Detector Phase	1	2			2		4	4	4	5		1	
Switch Phase													
Minimum Initial (s)	5.0				15.0		9.0			7.0		5.0	1.0
Minimum Split (s)	11.9				22.5		13.1			11.0		11.9	23.0
Total Split (s)	15.0				40.0		8.0			15.0		15.0	12.0
Total Split (%)	16.7%				44.4%		8.9%			16.7%		16.7%	13%
Maximum Green (s)	8.6				33.3		3.9			11.0		8.6	8.0
Yellow Time (s)	3.0				4.1		3.0			3.0		3.0	4.0
All-Red Time (s)	3.4				2.6		1.1			1.0		3.4	0.0
Lost Time Adjust (s)	0.0				0.0		0.0			0.0		0.0	
Total Lost Time (s)	6.4				6.7		4.1			4.0		6.4	
Lead/Lag	Lead				Lag		Lag					Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes					Yes	Yes
Vehicle Extension (s)	2.0				2.5		2.0			2.0		2.0	3.0
Recall Mode	None				C-Min		None			None		None	None

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Synchro 11 Report
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Lanes, Volumes, Timings
2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Walk Time (s)													7.0
Flash Dont Walk (s)													12.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)	6.0	61.3			55.6		13.6	16.1	16.1	7.0		8.2	
Actuated g/C Ratio	0.07	0.68			0.62		0.15	0.18	0.18	0.08		0.09	
v/c Ratio	0.21	0.10			0.61		0.60	0.52	0.49	0.03		0.01	
Control Delay	43.8	5.6			13.3		51.3	12.0	9.4	39.0		0.0	
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0	
Total Delay	43.8	5.6			13.3		51.3	12.0	9.4	39.0		0.0	
LOS	D	A			B		D	B	A	D		A	
Approach Delay		9.5			13.3			21.1			19.5		
Approach LOS		A			B			C			B		
Queue Length 50th (ft)	13	16			105		75	11	0	2		0	
Queue Length 95th (ft)	36	39			239		#236	68	53	7		0	
Internal Link Dist (ft)		384			539			554			148		
Turn Bay Length (ft)	105						430		450	75			
Base Capacity (vph)	161	2208			1926		241	413	420	220		332	
Starvation Cap Reductn	0	0			0		0	0	0	0		0	
Spillback Cap Reductn	0	0			0		0	0	0	0		0	
Storage Cap Reductn	0	0			0		0	0	0	0		0	
Reduced v/c Ratio	0.15	0.10			0.61		0.60	0.52	0.49	0.02		0.01	
Intersection Summary													
Area Type:	Other												
Cycle Length: 90													
Actuated Cycle Length: 90													
Offset: 60 (67%), Referenced to phase 2:EBWB, Start of Yellow													
Natural Cycle: 105													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.61													
Intersection Signal Delay: 15.1				Intersection LOS: B									
Intersection Capacity Utilization 53.5%				ICU Level of Service A									
Analysis Period (min) 15													
# 95th percentile volume exceeds capacity, queue may be longer.													

Lanes, Volumes, Timings

2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

Queue shown is maximum after two cycles.

Splits and Phases: 2: I-95 NB Exit 13 Off Ramp & US Route 1



Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations		 			 								
Traffic Volume (vph)	97	305	53	47	678	53	81	73	25	73	84	241	
Future Volume (vph)	97	305	53	47	678	53	81	73	25	73	84	241	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	12	11	11	10	10	10	
Storage Length (ft)	0		0	210		75	163		0	135		135	
Storage Lanes	1		0	1		1	1		0	1		1	
Taper Length (ft)	25			50			50			50			
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		0.978				0.850		0.962				0.850	
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1652	3295	0	1620	3388	1406	1703	1754	0	1589	1690	1507	
Flt Permitted	0.950			0.950			0.695			0.681			
Satd. Flow (perm)	1652	3295	0	1620	3388	1406	1246	1754	0	1139	1690	1507	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		23				153		18				274	
Link Speed (mph)		35			35			30			30		
Link Distance (ft)		601			420			331			299		
Travel Time (s)		11.7			8.2			7.5			6.8		
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.83	0.83	0.83	0.88	0.88	0.88	
Heavy Vehicles (%)	2%	3%	7%	4%	3%	11%	6%	1%	0%	6%	2%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	7	0	
Adj. Flow (vph)	104	328	57	51	737	58	98	88	30	83	95	274	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	104	385	0	51	737	58	98	118	0	83	95	274	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.04	1.04	1.09	1.13	1.09	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2		1	2	1	1	2		1	2	1	

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Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
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	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm	
Protected Phases	1	6		5	2			4			4		3
Permitted Phases						2	4			4		4	
Detector Phase	1	6		5	2	2	4	4		4	4	4	
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	8.0	8.0		8.0	8.0	8.0	1.0
Minimum Split (s)	10.4	22.5		10.4	22.5	22.5	14.7	14.7		14.7	14.7	14.7	29.0
Total Split (s)	15.0	35.0		15.0	35.0	35.0	30.0	30.0		30.0	30.0	30.0	10.0
Total Split (%)	16.7%	38.9%		16.7%	38.9%	38.9%	33.3%	33.3%		33.3%	33.3%	33.3%	11%
Maximum Green (s)	10.1	29.8		10.1	29.8	29.8	23.3	23.3		23.3	23.3	23.3	6.0
Yellow Time (s)	3.0	4.1		3.0	4.1	4.1	4.0	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.9	1.1		1.9	1.1	1.1	2.7	2.7		2.7	2.7	2.7	0.0
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)	4.9	5.2		4.9	5.2	5.2	6.7	6.7		6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0		2.0	2.0	2.0	3.0
Recall Mode	None	Max		None	C-Max	C-Max	None	None		None	None	None	None
Walk Time (s)													7.0

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Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Flash Dont Walk (s)													18.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)	9.7	54.8		7.4	50.5	50.5	13.1	13.1		13.1	13.1	13.1	
Actuated g/C Ratio	0.11	0.61		0.08	0.56	0.56	0.15	0.15		0.15	0.15	0.15	
v/c Ratio	0.59	0.19		0.38	0.39	0.07	0.54	0.44		0.50	0.39	0.60	
Control Delay	55.2	9.7		54.8	13.1	2.1	45.5	33.2		44.4	37.7	10.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	55.2	9.7		54.8	13.1	2.1	45.5	33.2		44.4	37.7	10.1	
LOS	E	A		D	B	A	D	C		D	D	B	
Approach Delay		19.3			14.8			38.8			22.2		
Approach LOS		B			B			D			C		
Queue Length 50th (ft)	60	35		31	37	0	53	53		44	50	0	
Queue Length 95th (ft)	117	72		63	295	9	85	85		80	84	57	
Internal Link Dist (ft)		521			340			251			219		
Turn Bay Length (ft)				210		75	163			135		135	
Base Capacity (vph)	201	2016		182	1900	855	322	467		294	437	593	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0	
Reduced v/c Ratio	0.52	0.19		0.28	0.39	0.07	0.30	0.25		0.28	0.22	0.46	
Intersection Summary													
Area Type:	Other												
Cycle Length: 90													
Actuated Cycle Length: 90													
Offset: 55 (61%), Referenced to phase 2:WBT, Start of Yellow													
Natural Cycle: 80													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.60													
Intersection Signal Delay: 20.2				Intersection LOS: C									
Intersection Capacity Utilization 55.8%				ICU Level of Service B									
Analysis Period (min) 15													

Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

Splits and Phases: 3: Richards Ave & Connecticut Avenue/US Route 1

 Ø1 15 s	 Ø2 (R) 35 s	 Ø3 10 s	 Ø4 30 s
 Ø5 15 s	 Ø6 35 s		

Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	346	9	4	759	3	1	0	4	5	0	99
Future Volume (vph)	14	346	9	4	759	3	1	0	4	5	0	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	12	12	12
Storage Length (ft)	0		0	50		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	0		1
Taper Length (ft)	60			80			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
Frt		0.996			0.999			0.850				0.850
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1685	3476	0	1685	3486	0	1805	1615	0	0	1805	1615
Flt Permitted	0.950			0.950			0.816				0.816	
Satd. Flow (perm)	1685	3476	0	1685	3486	0	1550	1615	0	0	1550	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			1			559				118
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		293			385			261			246	
Travel Time (s)		5.7			7.5			5.9			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.76	0.76	0.76	0.84	0.84	0.84
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	15	376	10	4	825	3	1	0	5	6	0	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	386	0	4	828	0	1	5	0	0	6	118
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)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template	Left			Left			Left			Left		Right

Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report

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Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)	20	181		20	206		20	6		20	6	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		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
Detector 1 Channel		2,3		6	7,8			5			9	
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)		175			200							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel		40,41			43,44							
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	1	6		5	2			4			4	1
Permitted Phases							4			4		4
Detector Phase	1	6		5	2		4	4		4	4	1
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		9.0	9.0		9.0	9.0	4.0
Minimum Split (s)	8.6	20.2		8.6	20.2		35.5	35.5		35.5	35.5	8.6
Total Split (s)	15.0	54.0		15.0	54.0		21.0	21.0		21.0	21.0	15.0
Total Split (%)	16.7%	60.0%		16.7%	60.0%		23.3%	23.3%		23.3%	23.3%	16.7%
Maximum Green (s)	10.4	48.8		10.4	48.8		15.5	15.5		15.5	15.5	10.4
Yellow Time (s)	3.0	4.1		3.0	4.1		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.6	1.1		1.6	1.1		2.5	2.5		2.5	2.5	1.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.6	5.2		4.6	5.2		5.5	5.5			5.5	4.6
Lead/Lag	Lead	Lag		Lead	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	C-Max		None	None		None	None	None
Walk Time (s)							18.0	18.0		18.0	18.0	
Flash Dont Walk (s)							1.0	1.0		1.0	1.0	

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Synchro 11 Report

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Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)							5	5		5	5	
Act Effct Green (s)	5.4	78.8		4.8	67.7		10.3	10.3			10.3	12.5
Actuated g/C Ratio	0.06	0.88		0.05	0.75		0.11	0.11			0.11	0.14
v/c Ratio	0.15	0.13		0.04	0.32		0.01	0.01			0.03	0.36
Control Delay	47.8	2.6		32.2	6.3		33.0	0.0			34.0	8.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	47.8	2.6		32.2	6.3		33.0	0.0			34.0	8.2
LOS	D	A		C	A		C	A			C	A
Approach Delay		4.3			6.4			5.5			9.4	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	0	0		2	27		1	0			3	0
Queue Length 95th (ft)	27	56		m7	173		4	0			13	31
Internal Link Dist (ft)		213			305			181			166	
Turn Bay Length (ft)				50			150					
Base Capacity (vph)	194	3044		194	2621		266	740			266	408
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.08	0.13		0.02	0.32		0.00	0.01			0.02	0.29

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 18 (20%), Referenced to phase 2:WBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.36

Intersection Signal Delay: 6.1

Intersection LOS: A

Intersection Capacity Utilization 47.5%

ICU Level of Service A

Analysis Period (min) 15

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

Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

Splits and Phases: 4: Liquidators Driveway/Walmart Driveway & US Route 1



Lanes, Volumes, Timings
5: Keeler Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	21	317	29	31	702	155	36	72	28	1	114	39	28
Future Volume (vph)	21	317	29	31	702	155	36	72	28	1	114	39	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	10	10	10	10
Storage Length (ft)	0		0	0		210	0		150		190		0
Storage Lanes	1		0	1		1	1		1		2		0
Taper Length (ft)	75			25			25				40		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00		0.98							
Frt		0.988				0.850		0.958				0.937	
Flt Protected	0.950			0.950			0.950				0.950		
Satd. Flow (prot)	1685	3262	0	1504	3347	1546	1770	1771	0	0	3268	1615	0
Flt Permitted	0.326			0.526			0.950				0.950		
Satd. Flow (perm)	578	3262	0	832	3347	1510	1770	1771	0	0	3268	1615	0
Right Turn on Red			Yes			Yes			Yes				Yes
Satd. Flow (RTOR)		14				170		17				30	
Link Speed (mph)		35			35			30				30	
Link Distance (ft)		282			847			500				530	
Travel Time (s)		5.5			16.5			11.4				12.0	
Confl. Peds. (#/hr)	3		2	2		3							
Peak Hour Factor	0.99	0.99	0.99	0.94	0.94	0.94	0.87	0.87	0.87	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	6%	0%	12%	3%	1%	2%	0%	10%	0%	0%	0%	7%
Bus Blockages (#/hr)	0	0	0	0	6	0	0	0	0	0	0	0	0
Adj. Flow (vph)	21	320	29	33	747	165	41	83	32	1	123	42	30
Shared Lane Traffic (%)													
Lane Group Flow (vph)	21	349	0	33	747	165	41	115	0	0	124	72	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right
Median Width(ft)		10			10			12				20	
Link Offset(ft)		0			0			0				0	
Crosswalk Width(ft)		16			16			16				16	
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.04	1.09	1.06	1.04	1.00	1.00	1.00	1.09	1.09	1.09	1.09

Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report
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Lanes, Volumes, Timings
5: Keeler Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Turning Speed (mph)	15		9	15		9	15		9	9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	20	100	
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	20	6	
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	Prot	NA		Prot	Prot	NA	
Protected Phases	1	6		5	2		7	4		3	3	8	
Permitted Phases	6			2		2							
Detector Phase	1	6		5	2	2	7	4		3	3	8	
Switch Phase													
Minimum Initial (s)	4.0	15.0		4.0	15.0	15.0	4.0	5.0		4.0	4.0	5.0	
Minimum Split (s)	10.3	22.5		10.3	22.5	22.5	9.5	31.6		9.5	9.5	14.0	
Total Split (s)	13.0	48.0		13.0	48.0	48.0	15.0	14.0		15.0	15.0	14.0	
Total Split (%)	14.4%	53.3%		14.4%	53.3%	53.3%	16.7%	15.6%		16.7%	16.7%	15.6%	
Maximum Green (s)	7.2	42.3		7.2	42.3	42.3	10.4	7.4		10.4	10.4	7.6	
Yellow Time (s)	3.0	4.7		3.0	4.7	4.7	3.0	3.7		3.0	3.0	3.5	
All-Red Time (s)	2.8	1.0		2.8	1.0	1.0	1.6	2.9		1.6	1.6	2.9	
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)	5.8	5.7		5.8	5.7	5.7	4.6	6.6			4.6	6.4	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	

Lanes, Volumes, Timings
5: Keeler Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Recall Mode	None	Max		None	C-Max	C-Max	None	None		None	None	None	
Walk Time (s)								24.0					
Flash Dont Walk (s)								1.0					
Pedestrian Calls (#/hr)								5					
Act Effct Green (s)	52.6	49.0		54.2	51.6	51.6	7.6	8.0			8.6	13.5	
Actuated g/C Ratio	0.58	0.54		0.60	0.57	0.57	0.08	0.09			0.10	0.15	
v/c Ratio	0.05	0.20		0.06	0.39	0.18	0.28	0.66			0.40	0.27	
Control Delay	5.3	10.8		2.9	5.7	1.0	42.6	53.9			41.7	27.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0			0.0	0.0	
Total Delay	5.3	10.8		2.9	5.7	1.0	42.6	53.9			41.7	27.4	
LOS	A	B		A	A	A	D	D			D	C	
Approach Delay		10.5			4.8			50.9				36.4	
Approach LOS		B			A			D				D	
Queue Length 50th (ft)	6	62		3	36	0	22	54			34	22	
Queue Length 95th (ft)	2	106		3	50	1	51	#130			60	65	
Internal Link Dist (ft)		202			767			420				450	
Turn Bay Length (ft)						210					190		
Base Capacity (vph)	430	1780		556	1917	937	204	176			377	267	
Starvation Cap Reductn	0	0		0	0	0	0	0			0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0			0	0	
Storage Cap Reductn	0	0		0	0	0	0	0			0	0	
Reduced v/c Ratio	0.05	0.20		0.06	0.39	0.18	0.20	0.65			0.33	0.27	
Intersection Summary													
Area Type:	Other												
Cycle Length: 90													
Actuated Cycle Length: 90													
Offset: 30 (33%), Referenced to phase 2:WBTL, Start of Yellow													
Natural Cycle: 75													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.66													
Intersection Signal Delay: 14.1				Intersection LOS: B									
Intersection Capacity Utilization 45.8%				ICU Level of Service A									
Analysis Period (min) 15													

Lanes, Volumes, Timings 5: Keeler Ave & US Route 1

09/16/2024

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Keeler Ave & US Route 1



Lanes, Volumes, Timings

6: Rampart Road/Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	441	61	44	850	2	87	0	40	2	0	1
Future Volume (vph)	3	441	61	44	850	2	87	0	40	2	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	13	13	12	13	13
Storage Length (ft)	200		0	200		230	120		0	0		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	75			80			80			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
Ped Bike Factor	1.00	1.00		1.00		0.97						
Frt		0.982				0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1685	3274	0	1589	3355	1561	1787	1669	0	1805	1669	0
Flt Permitted	0.950			0.950			0.756			0.726		
Satd. Flow (perm)	1676	3274	0	1587	3355	1522	1422	1669	0	1379	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23				93		492			330	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		539			722			374			244	
Travel Time (s)		10.5			14.1			8.5			5.5	
Confl. Peds. (#/hr)	5		1	1		5						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.86	0.86	0.86	0.38	0.38	0.38
Heavy Vehicles (%)	0%	5%	0%	6%	4%	0%	1%	0%	0%	0%	0%	0%
Adj. Flow (vph)	3	459	64	46	885	2	101	0	47	5	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	523	0	46	885	2	101	47	0	5	3	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)		12			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	0.96	0.96	1.00	0.96	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9

Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report

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Lanes, Volumes, Timings

6: Rampart Road/Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	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)		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		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Detector Phase	1	6		5	2	2	4	4		4	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	11.0	22.9		11.0	22.9	22.9	30.2	30.2		30.2	30.2	
Total Split (s)	19.0	47.0		19.0	47.0	47.0	24.0	24.0		24.0	24.0	
Total Split (%)	21.1%	52.2%		21.1%	52.2%	52.2%	26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	13.5	41.5		13.5	41.5	41.5	18.8	18.8		18.8	18.8	
Yellow Time (s)	3.0	4.1		3.0	4.1	4.1	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	1.4		2.5	1.4	1.4	2.2	2.2		2.2	2.2	
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)	5.5	5.5		5.5	5.5	5.5	5.2	5.2		5.2	5.2	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Max		None	C-Max	C-Max	None	None		None	None	

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Lanes, Volumes, Timings
6: Rampart Road/Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)							24.0	24.0		24.0	24.0	
Flash Dont Walk (s)							1.0	1.0		1.0	1.0	
Pedestrian Calls (#/hr)							5	5		5	5	
Act Effct Green (s)	5.1	62.3		7.2	68.5	68.5	12.4	12.4		12.4	12.4	
Actuated g/C Ratio	0.06	0.69		0.08	0.76	0.76	0.14	0.14		0.14	0.14	
v/c Ratio	0.03	0.23		0.36	0.35	0.00	0.52	0.07		0.03	0.01	
Control Delay	42.3	10.5		46.5	6.2	0.0	44.5	0.2		31.0	0.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	42.3	10.5		46.5	6.2	0.0	44.5	0.2		31.0	0.0	
LOS	D	B		D	A	A	D	A		C	A	
Approach Delay		10.7			8.1			30.5			19.4	
Approach LOS		B			A			C			B	
Queue Length 50th (ft)	2	86		25	72	0	55	0		3	0	
Queue Length 95th (ft)	m9	114		58	198	0	92	0		5	0	
Internal Link Dist (ft)		459			642			294			164	
Turn Bay Length (ft)	200			200		230	120					
Base Capacity (vph)	252	2273		238	2554	1181	297	737		288	609	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.01	0.23		0.19	0.35	0.00	0.34	0.06		0.02	0.00	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 15 (17%), Referenced to phase 2:WBT, Start of Yellow												
Natural Cycle: 65												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.52												
Intersection Signal Delay: 11.1						Intersection LOS: B						
Intersection Capacity Utilization 52.6%						ICU Level of Service A						
Analysis Period (min) 15												
m Volume for 95th percentile queue is metered by upstream signal.												

Lanes, Volumes, Timings

6: Rampart Road/Driveway & US Route 1

09/16/2024

Splits and Phases: 6: Rampart Road/Driveway & US Route 1

 Ø1 19 s	 Ø2 (R) 47 s	 Ø4 24 s
 Ø5 19 s	 Ø6 47 s	

Lanes, Volumes, Timings
7: US Route 1 & Shop Rite Driveway

09/16/2024

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Lane Configurations					 		
Traffic Volume (vph)	60	410	837	168	114	68	
Future Volume (vph)	60	410	837	168	114	68	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	11	10	13	
Storage Length (ft)	315			460	0	0	
Storage Lanes	1			1	2	1	
Taper Length (ft)	85				25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor	1.00			0.98		0.98	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1685	3292	3355	1561	3204	1652	
Flt Permitted	0.293				0.950		
Satd. Flow (perm)	519	3292	3355	1523	3204	1622	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				179		79	
Link Speed (mph)		35	35		30		
Link Distance (ft)		722	805		215		
Travel Time (s)		14.1	15.7		4.9		
Confl. Peds. (#/hr)	6			6		4	
Peak Hour Factor	0.93	0.93	0.94	0.94	0.86	0.86	
Heavy Vehicles (%)	0%	6%	4%	0%	2%	1%	
Adj. Flow (vph)	65	441	890	179	133	79	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	65	441	890	179	133	79	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		10	10		20		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.04	1.04	1.04	1.09	0.96	
Turning Speed (mph)	15			9	15	9	

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Lanes, Volumes, Timings
7: US Route 1 & Shop Rite Driveway

09/16/2024

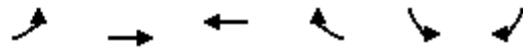
							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	20	100	100	20	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	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	
Detector 1 Queue (s)	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	
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	pm+ov	Prot	Perm	
Protected Phases	1	1 2	2	4	4		3
Permitted Phases	2			2		4	
Detector Phase	1	2	2	4	4	4	
Switch Phase							
Minimum Initial (s)	4.0		15.0	9.0	9.0	9.0	1.0
Minimum Split (s)	9.5		22.5	13.3	13.3	13.3	28.0
Total Split (s)	11.0		54.0	23.0	23.0	23.0	12.0
Total Split (%)	11.0%		54.0%	23.0%	23.0%	23.0%	12%
Maximum Green (s)	7.0		47.9	18.7	18.7	18.7	8.0
Yellow Time (s)	3.0		4.1	3.0	3.0	3.0	4.0
All-Red Time (s)	1.0		2.0	1.3	1.3	1.3	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0		6.1	4.3	4.3	4.3	
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Vehicle Extension (s)	1.0		3.0	2.0	2.0	2.0	3.0
Recall Mode	None		C-Max	None	None	None	None

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Synchro 11 Report
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Lanes, Volumes, Timings
7: US Route 1 & Shop Rite Driveway

09/16/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Walk Time (s)							7.0
Flash Dont Walk (s)							17.0
Pedestrian Calls (#/hr)							5
Act Effct Green (s)	76.5	79.7	70.7	82.1	9.6	9.6	
Actuated g/C Ratio	0.76	0.80	0.71	0.82	0.10	0.10	
v/c Ratio	0.14	0.17	0.38	0.14	0.43	0.35	
Control Delay	3.9	3.1	15.0	2.2	47.1	14.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.9	3.1	15.0	2.2	47.1	14.2	
LOS	A	A	B	A	D	B	
Approach Delay		3.2	12.8		34.8		
Approach LOS		A	B		C		
Queue Length 50th (ft)	5	21	273	17	42	0	
Queue Length 95th (ft)	25	66	383	45	67	39	
Internal Link Dist (ft)		642	725		135		
Turn Bay Length (ft)	315			460			
Base Capacity (vph)	488	2623	2371	1397	599	367	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.17	0.38	0.13	0.22	0.22	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 33 (33%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.43

Intersection Signal Delay: 12.7

Intersection LOS: B

Intersection Capacity Utilization 46.0%

ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings

7: US Route 1 & Shop Rite Driveway

09/16/2024

Splits and Phases: 7: US Route 1 & Shop Rite Driveway



Lanes, Volumes, Timings
8: Scribner Avenue & US Route 1

09/16/2024

														
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations														
Traffic Volume (vph)	1	33	191	296	136	972	142	71	102	75	58	235	38	
Future Volume (vph)	1	33	191	296	136	972	142	71	102	75	58	235	38	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	10	11	10	10	11	11	10	13	13	10	11	11	
Storage Length (ft)		230		0	540		0	90		0	144		0	
Storage Lanes		1		1	1		0	1		0	1		0	
Taper Length (ft)		100			100			40			100			
Lane Util. Factor	0.95	1.00	0.95	1.00	1.00	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				0.850		0.981			0.936			0.979		
Flt Protected		0.950			0.950			0.950			0.950			
Satd. Flow (prot)	0	1653	3323	1436	1620	3327	0	1604	1787	0	1560	1767	0	
Flt Permitted		0.449			0.950			0.580			0.153			
Satd. Flow (perm)	0	781	3323	1436	1620	3327	0	978	1787	0	251	1767	0	
Right Turn on Red				Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)				325		16			31			7		
Link Speed (mph)			35			35			30			30		
Link Distance (ft)			482			773			571			677		
Travel Time (s)			9.4			15.1			13.0			15.4		
Confl. Peds. (#/hr)		1					1	2					2	
Confl. Bikes (#/hr)									1					
Peak Hour Factor	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.87	0.87	0.87	0.93	0.93	0.93	
Heavy Vehicles (%)	0%	2%	5%	5%	4%	3%	0%	5%	2%	4%	8%	1%	5%	
Adj. Flow (vph)	1	36	210	325	148	1057	154	82	117	86	62	253	41	
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	37	210	325	148	1211	0	82	203	0	62	294	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(ft)			24			10			10			10		
Link Offset(ft)			0			0			0			0		
Crosswalk Width(ft)			16			16			16			16		
Two way Left Turn Lane														
Headway Factor	1.09	1.09	1.04	1.09	1.09	1.04	1.04	1.09	0.96	0.96	1.09	1.04	1.04	

Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report
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Lanes, Volumes, Timings
8: Scribner Avenue & US Route 1

09/16/2024

														
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Turning Speed (mph)	9	15		9	15		9	15		9	15		9	
Number of Detectors	1	3	1	0	3	1		1	1		1	1		
Detector Template	Left													
Leading Detector (ft)	20	27	166	0	34	171		19	19		28	28		
Trailing Detector (ft)	0	-6	160	0	-6	165		-9	-9		0	0		
Detector 1 Position(ft)	0	-6	160	0	-6	165		-9	-9		0	0		
Detector 1 Size(ft)	20	6	6	20	6	6		28	28		28	28		
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)		6			14									
Detector 2 Size(ft)		6			6									
Detector 2 Type		Cl+Ex			Cl+Ex									
Detector 2 Channel														
Detector 2 Extend (s)		0.0			0.0									
Detector 3 Position(ft)		21			28									
Detector 3 Size(ft)		6			6									
Detector 3 Type		Cl+Ex			Cl+Ex									
Detector 3 Channel														
Detector 3 Extend (s)		0.0			0.0									
Turn Type	custom	Prot	NA	Free	Prot	NA		pm+pt	NA		custom	NA		
Protected Phases		1	6		5	2		4	8		4	7		3
Permitted Phases	1			Free				8			7 8	8		
Detector Phase	1	1	6		5	2		4	8		4	7		
Switch Phase														
Minimum Initial (s)	5.0	5.0	15.0		5.0	15.0		5.0	5.0		5.0	3.0		1.0
Minimum Split (s)	9.5	9.5	20.1		10.2	20.1		9.8	9.5		9.8	9.8		26.1
Total Split (s)	20.0	20.0	35.0		20.0	35.0		11.0	18.0		11.0	9.0		7.0
Total Split (%)	20.0%	20.0%	35.0%		20.0%	35.0%		11.0%	18.0%		11.0%	9.0%		7%
Maximum Green (s)	15.7	15.7	29.9		14.9	29.9		6.2	13.5		6.2	4.2		2.9
Yellow Time (s)	3.0	3.0	3.9		3.9	3.9		3.0	3.0		3.0	3.0		4.0
All-Red Time (s)	1.3	1.3	1.2		1.2	1.2		1.8	1.5		1.8	1.8		0.1

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Synchro 11 Report
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Lanes, Volumes, Timings
8: Scribner Avenue & US Route 1

09/16/2024

														
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lost Time Adjust (s)		0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Lost Time (s)		4.3	5.1		5.1	5.1		4.8	4.5		4.8	4.8		
Lead/Lag	Lead	Lead	Lag		Lead	Lag		Lag	Lag		Lag	Lead		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)	1.5	1.5	2.5		1.5	2.5		1.5	1.5		1.5	1.5		0.2
Recall Mode	None	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)														7.0
Flash Dont Walk (s)														15.0
Pedestrian Calls (#/hr)														5
Act Effct Green (s)		11.7	36.0	100.0	12.2	41.8		18.4	12.1		31.5	26.0		
Actuated g/C Ratio		0.12	0.36	1.00	0.12	0.42		0.18	0.12		0.32	0.26		
v/c Ratio		0.41	0.18	0.23	0.75	0.86		0.37	0.83		0.38	0.63		
Control Delay		41.0	28.0	1.0	61.3	28.1		28.3	63.8		27.7	39.7		
Queue Delay		0.0	0.0	0.0	0.0	0.3		0.7	0.0		0.0	1.2		
Total Delay		41.0	28.0	1.0	61.3	28.3		29.0	63.8		27.7	40.9		
LOS		D	C	A	E	C		C	E		C	D		
Approach Delay			13.5			31.9			53.8			38.6		
Approach LOS			B			C			D			D		
Queue Length 50th (ft)		22	64	0	74	~473		32	107		24	157		
Queue Length 95th (ft)		41	101	0	m140	#614		69	#202		58	#288		
Internal Link Dist (ft)			402			693			491			597		
Turn Bay Length (ft)		230			540			90			144			
Base Capacity (vph)		122	1196	1436	241	1401		225	268		168	463		
Starvation Cap Reductn		0	0	0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0	0	18		33	0		0	53		
Storage Cap Reductn		0	0	0	0	0		0	0		0	0		
Reduced v/c Ratio		0.30	0.18	0.23	0.61	0.88		0.43	0.76		0.37	0.72		
Intersection Summary														
Area Type:	Other													
Cycle Length: 100														
Actuated Cycle Length: 100														
Offset: 7 (7%), Referenced to phase 2:WBT, Start of Green														
Natural Cycle: 140														

Lanes, Volumes, Timings

8: Scribner Avenue & US Route 1

09/16/2024

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 31.2

Intersection LOS: C

Intersection Capacity Utilization 70.3%

ICU Level of Service C

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 8: Scribner Avenue & US Route 1



Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	259	64	432	675	45	540	14	59	0	7	36
Future Volume (vph)	2	259	64	432	675	45	540	14	59	0	7	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	15	10	10	16
Storage Length (ft)	0		0	550		0	0		0	0		0
Storage Lanes	0		0	1		0	2		0	0		1
Taper Length (ft)	25			100			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.970			0.991			0.879				0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	3231	0	1620	3387	0	3400	1670	0	0	1773	1830
Flt Permitted		0.951		0.528			0.950					
Satd. Flow (perm)	0	3072	0	900	3387	0	3400	1670	0	0	1773	1830
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			7			76				131
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		773			955			578			162	
Travel Time (s)		17.6			21.7			13.1			3.7	
Confl. Peds. (#/hr)	4					4						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.78	0.78	0.78	0.84	0.84	0.84
Heavy Vehicles (%)	0%	5%	4%	4%	2%	2%	3%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	278	69	465	726	48	692	18	76	0	8	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	349	0	465	774	0	692	94	0	0	8	43
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)		10			10			40			40	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	0.88	1.09	1.09	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9

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Synchro 11 Report

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Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Number of Detectors	1	1		3	1		3	3		1	2	2
Detector Template	Left						Left					
Leading Detector (ft)	20	215		29	206		36	35		20	18	18
Trailing Detector (ft)	0	209		-5	200		0	-7		0	-2	-2
Detector 1 Position(ft)	0	209		-5	200		0	-7		0	-2	-2
Detector 1 Size(ft)	20	6		6	6		6	6		20	6	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)				9			15	12			12	12
Detector 2 Size(ft)				6			6	6			6	6
Detector 2 Type				Cl+Ex			Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)				0.0			0.0	0.0			0.0	0.0
Detector 3 Position(ft)				23			30	29				
Detector 3 Size(ft)				6			6	6				
Detector 3 Type				Cl+Ex			Cl+Ex	Cl+Ex				
Detector 3 Channel												
Detector 3 Extend (s)				0.0			0.0	0.0				
Turn Type	Perm	NA		pm+pt	NA		Split	NA			NA	Perm
Protected Phases		2		1	2		4	4		8	8	
Permitted Phases	2			2								8
Detector Phase	2	2		1	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		5.0	15.0		9.0	9.0		5.0	5.0	5.0
Minimum Split (s)	21.7	21.7		9.0	21.7		21.3	21.3		9.0	9.0	9.0
Total Split (s)	40.0	40.0		15.0	40.0		36.0	36.0		9.0	9.0	9.0
Total Split (%)	40.0%	40.0%		15.0%	40.0%		36.0%	36.0%		9.0%	9.0%	9.0%
Maximum Green (s)	33.3	33.3		11.0	33.3		31.7	31.7		5.0	5.0	5.0
Yellow Time (s)	4.4	4.4		3.0	4.4		3.3	3.3		3.0	3.0	3.0
All-Red Time (s)	2.3	2.3		1.0	2.3		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

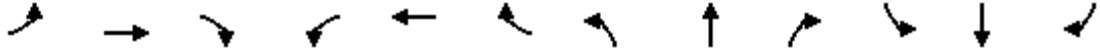
Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report
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Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)		6.7		4.0	6.7		4.3	4.3			4.0	4.0
Lead/Lag	Lag	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.5	2.5		1.5	2.5		2.0	2.0		1.5	1.5	1.5
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	None
Walk Time (s)							16.0	16.0				
Flash Dont Walk (s)							1.0	1.0				
Pedestrian Calls (#/hr)							5	5				
Act Effct Green (s)		34.9		57.0	34.9		25.2	25.2			5.1	5.1
Actuated g/C Ratio		0.35		0.57	0.35		0.25	0.25			0.05	0.05
v/c Ratio		0.32		0.71	0.65		0.81	0.20			0.09	0.20
Control Delay		27.8		24.8	30.6		42.8	9.8			47.3	2.0
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay		27.8		24.8	30.6		42.8	9.8			47.3	2.0
LOS		C		C	C		D	A			D	A
Approach Delay		27.8			28.5			38.8			9.1	
Approach LOS		C			C			D			A	
Queue Length 50th (ft)		102		162	219		214	9			5	0
Queue Length 95th (ft)		m116		m#315	m216		213	33			19	0
Internal Link Dist (ft)		693			875			498			82	
Turn Bay Length (ft)				550								
Base Capacity (vph)		1169		652	1271		1077	581			91	217
Starvation Cap Reductn		0		0	0		0	0			0	0
Spillback Cap Reductn		0		0	0		0	0			0	0
Storage Cap Reductn		0		0	0		0	0			0	0
Reduced v/c Ratio		0.30		0.71	0.61		0.64	0.16			0.09	0.20
Intersection Summary												
Area Type:	Other											
Cycle Length:	100											
Actuated Cycle Length:	100											
Offset:	0 (0%), Referenced to phase 2:EBWB, Start of Yellow											
Natural Cycle:	75											
Control Type:	Actuated-Coordinated											

Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 31.3

Intersection LOS: C

Intersection Capacity Utilization 73.3%

ICU Level of Service D

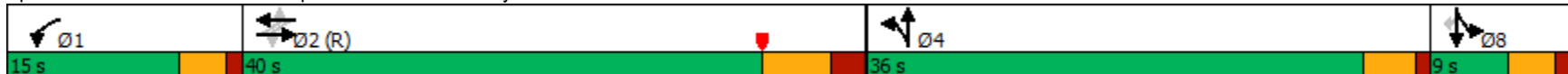
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 9: I-95 Ramps/Global Gas Driveway & US Route 1



Lanes, Volumes, Timings
10: Taylor Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	31	206	65	84	938	0	95	102	93	63	107	123	
Future Volume (vph)	31	206	65	84	938	0	95	102	93	63	107	123	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	14	14	14	12	12	12	
Storage Length (ft)	155		0	140		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	100			70			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		
Frt		0.964						0.957			0.943		
Flt Protected	0.950			0.950				0.984			0.989		
Satd. Flow (prot)	1636	3200	0	1574	3368	0	0	1785	0	0	1728	0	
Flt Permitted	0.182			0.548				0.671			0.811		
Satd. Flow (perm)	313	3200	0	907	3368	0	0	1217	0	0	1416	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		50						24			37		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		955			301			227			157		
Travel Time (s)		21.7			6.8			5.2			3.6		
Confl. Peds. (#/hr)	6		2	2		6			5	5			
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.90	0.93	0.93	0.93	
Heavy Vehicles (%)	3%	6%	0%	7%	3%	0%	5%	7%	7%	3%	4%	1%	
Bus Blockages (#/hr)	0	0	0	0	3	0	0	0	0	0	0	0	
Adj. Flow (vph)	34	226	71	93	1042	0	106	113	103	68	115	132	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	34	297	0	93	1042	0	0	322	0	0	315	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)		12			12			0			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.04	1.09	1.05	1.04	0.92	0.92	0.92	1.00	1.00	1.00	

Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report
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Lanes, Volumes, Timings
10: Taylor Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		3
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		9.0	9.0		9.0	9.0		1.0
Minimum Split (s)	10.0	20.7		9.5	20.7		14.8	14.8		14.8	14.8		26.0
Total Split (s)	10.0	45.0		10.0	45.0		35.0	35.0		35.0	35.0		10.0
Total Split (%)	10.0%	45.0%		10.0%	45.0%		35.0%	35.0%		35.0%	35.0%		10%
Maximum Green (s)	6.0	39.3		6.0	39.3		29.2	29.2		29.2	29.2		6.0
Yellow Time (s)	3.0	4.1		3.0	4.1		3.6	3.6		3.6	3.6		4.0
All-Red Time (s)	1.0	1.6		1.0	1.6		2.2	2.2		2.2	2.2		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	4.0	5.7		4.0	5.7			5.8			5.8		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?	Yes	Yes		Yes	Yes								
Vehicle Extension (s)	1.5	2.5		1.5	2.5		2.0	2.0		2.0	2.0		0.2

Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report
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Lanes, Volumes, Timings
10: Taylor Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													15.0
Pedestrian Calls (#/hr)													8
Act Effct Green (s)	55.5	49.6		58.0	52.2			28.6			28.6		
Actuated g/C Ratio	0.56	0.50		0.58	0.52			0.29			0.29		
v/c Ratio	0.14	0.18		0.16	0.59			0.88			0.73		
Control Delay	11.0	9.2		8.9	14.7			57.2			38.8		
Queue Delay	0.0	0.0		0.0	0.2			0.0			0.0		
Total Delay	11.0	9.2		8.9	14.9			57.2			38.8		
LOS	B	A		A	B			E			D		
Approach Delay		9.4			14.4			57.2			38.8		
Approach LOS		A			B			E			D		
Queue Length 50th (ft)	5	28		19	145			174			153		
Queue Length 95th (ft)	24	49		m42	m223			#341			#263		
Internal Link Dist (ft)		875			221			147			77		
Turn Bay Length (ft)	155			140									
Base Capacity (vph)	254	1611		569	1759			392			462		
Starvation Cap Reductn	0	0		0	151			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.13	0.18		0.16	0.65			0.82			0.68		
Intersection Summary													
Area Type:	Other												
Cycle Length: 100													
Actuated Cycle Length: 100													
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Yellow													
Natural Cycle: 110													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.88													
Intersection Signal Delay: 23.8				Intersection LOS: C									
Intersection Capacity Utilization 69.2%				ICU Level of Service C									
Analysis Period (min) 15													

Lanes, Volumes, Timings

10: Taylor Ave & US Route 1

09/16/2024

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 10: Taylor Ave & US Route 1

 Ø1 10 s	 Ø2 (R) 45 s	 Ø3 10 s	 Ø4 35 s
 Ø5 10 s	 Ø6 45 s		

Lanes, Volumes, Timings
11: Cedar Street & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	42	275	60	77	899	12	205	52	55	23	62	101	
Future Volume (vph)	42	275	60	77	899	12	205	52	55	23	62	101	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	12	16	16	14	14	14	
Storage Length (ft)	0		0	260		0	250		0	0		0	
Storage Lanes	1		0	1		0	1		0	0		0	
Taper Length (ft)	25			90			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		0.99	0.99			0.99		
Frt		0.973			0.998			0.923			0.927		
Flt Protected	0.950			0.950			0.950				0.994		
Satd. Flow (prot)	1652	3190	0	1589	3361	0	1719	1854	0	0	1573	0	
Flt Permitted	0.202			0.497			0.506				0.952		
Satd. Flow (perm)	350	3190	0	828	3361	0	907	1854	0	0	1505	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		28			1			53			59		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		98			473			371			196		
Travel Time (s)		2.2			10.8			8.4			4.5		
Confl. Peds. (#/hr)	12		6	6		12	14		5	5		14	
Peak Hour Factor	0.89	0.89	0.89	0.91	0.91	0.91	0.92	0.92	0.92	0.83	0.83	0.83	
Heavy Vehicles (%)	2%	5%	3%	6%	3%	0%	5%	5%	5%	8%	1%	2%	
Bus Blockages (#/hr)	0	6	0	0	3	0	0	3	0	0	0	0	
Parking (#/hr)											5		
Adj. Flow (vph)	47	309	67	85	988	13	223	57	60	28	75	122	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	47	376	0	85	1001	0	223	117	0	0	225	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)		12			12			12			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													

Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report
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Lanes, Volumes, Timings
11: Cedar Street & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Headway Factor	1.09	1.06	1.04	1.09	1.05	1.04	1.00	0.86	0.85	0.92	1.09	0.92	
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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		3
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		9.0	9.0		9.0	9.0		1.0
Minimum Split (s)	9.0	20.9		9.0	20.9		14.7	14.7		14.7	14.7		31.0
Total Split (s)	15.0	41.0		15.0	41.0		34.0	34.0		34.0	34.0		10.0
Total Split (%)	15.0%	41.0%		15.0%	41.0%		34.0%	34.0%		34.0%	34.0%		10%
Maximum Green (s)	11.0	35.1		11.0	35.1		28.3	28.3		28.3	28.3		6.0
Yellow Time (s)	3.0	4.1		3.0	4.1		3.6	3.6		3.6	3.6		4.0
All-Red Time (s)	1.0	1.8		1.0	1.8		2.1	2.1		2.1	2.1		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0		
Total Lost Time (s)	4.0	5.9		4.0	5.9		5.7	5.7			5.7		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?	Yes	Yes		Yes	Yes								

Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report
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Lanes, Volumes, Timings
11: Cedar Street & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Vehicle Extension (s)	1.5	2.5		1.5	2.5		2.0	2.0		2.0	2.0		3.0
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													19.0
Pedestrian Calls (#/hr)													15
Act Effct Green (s)	55.7	49.2		58.6	52.0		26.3	26.3			26.3		
Actuated g/C Ratio	0.56	0.49		0.59	0.52		0.26	0.26			0.26		
v/c Ratio	0.18	0.24		0.16	0.57		0.94	0.22			0.51		
Control Delay	12.5	18.7		11.4	20.9		80.9	16.7			26.6		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0		
Total Delay	12.5	18.7		11.4	20.9		80.9	16.7			26.6		
LOS	B	B		B	C		F	B			C		
Approach Delay		18.0			20.1			58.8			26.6		
Approach LOS		B			C			E			C		
Queue Length 50th (ft)	14	63		21	234		131	29			83		
Queue Length 95th (ft)	m27	m111		51	365		#273	74			141		
Internal Link Dist (ft)		18			393			291			116		
Turn Bay Length (ft)				260			250						
Base Capacity (vph)	350	1583		580	1749		260	570			474		
Starvation Cap Reductn	0	0		0	0		0	0			0		
Spillback Cap Reductn	0	0		0	32		0	0			0		
Storage Cap Reductn	0	0		0	0		0	0			0		
Reduced v/c Ratio	0.13	0.24		0.15	0.58		0.86	0.21			0.47		
Intersection Summary													
Area Type:	Other												
Cycle Length: 100													
Actuated Cycle Length: 100													
Offset: 5 (5%), Referenced to phase 2:WBTL, Start of Yellow													
Natural Cycle: 110													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.94													
Intersection Signal Delay: 26.7							Intersection LOS: C						
Intersection Capacity Utilization 70.0%							ICU Level of Service C						

Lanes, Volumes, Timings

11: Cedar Street & US Route 1

09/16/2024

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

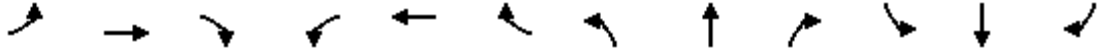
Splits and Phases: 11: Cedar Street & US Route 1

 Ø1 15 s	 Ø2 (R) 41 s	 Ø3 10 s	 Ø4 34 s
 Ø5 15 s	 Ø6 41 s		

Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

														
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3	Ø7
Lane Configurations														
Traffic Volume (vph)	39	261	40	28	639	27	183	71	89	39	36	80		
Future Volume (vph)	39	261	40	28	639	27	183	71	89	39	36	80		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	10	11	11	10	11	11	11	13	13	10	10	12		
Storage Length (ft)	290		0	50		0	0		0	105		105		
Storage Lanes	1		0	1		0	1		0	1		1		
Taper Length (ft)	25			50			25			85				
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		0.99	1.00		0.99	0.99		1.00		0.97		
Frt		0.980			0.994			0.917				0.850		
Flt Protected	0.950			0.950			0.950			0.950				
Satd. Flow (prot)	1574	3152	0	1532	3260	0	1662	1710	0	1685	1598	1599		
Flt Permitted	0.261			0.546			0.730			0.641				
Satd. Flow (perm)	431	3152	0	873	3260	0	1270	1710	0	1135	1598	1549		
Right Turn on Red			Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)		15			4			84				269		
Link Speed (mph)		30			30			30			30			
Link Distance (ft)		429			489			381			333			
Travel Time (s)		9.8			11.1			8.7			7.6			
Confl. Peds. (#/hr)	5		5	5		5	9		1	1		9		
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.87	0.87	0.87	0.86	0.86	0.86		
Heavy Vehicles (%)	7%	6%	5%	10%	4%	11%	5%	9%	1%	0%	11%	1%		
Bus Blockages (#/hr)	0	9	0	0	9	0	0	0	0	0	0	0		
Adj. Flow (vph)	44	297	45	30	687	29	210	82	102	45	42	93		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	44	342	0	30	716	0	210	184	0	45	42	93		
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)		12			15			11			11			
Link Offset(ft)		0			0			0			0			
Crosswalk Width(ft)		16			16			16			16			
Two way Left Turn Lane														
Headway Factor	1.09	1.07	1.04	1.09	1.07	1.04	1.04	0.96	0.96	1.09	1.09	1.00		

Existing AM Balanced 8:49 pm 08/09/2024

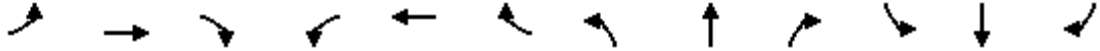
Synchro 11 Report

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Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

													Ø3	Ø7
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Turning Speed (mph)	15		9	15		9	15		9	15		9		
Number of Detectors	1	2		1	2		1	2		1	2	1		
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right		
Leading Detector (ft)	20	100		20	100		20	100		20	100	20		
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0		
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0		
Detector 1 Size(ft)	20	6		20	6		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		
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)		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		D.P+P	NA		pm+pt	NA	Perm		
Protected Phases	1	6		5	2		4 7	7 8		4	8		3	7
Permitted Phases	6			2			8			8		8		
Detector Phase	1	6		5	2		7	8		4	8	8		
Switch Phase														
Minimum Initial (s)	5.0	15.0		5.0	15.0					5.0	10.0	10.0	1.0	5.0
Minimum Split (s)	9.5	21.2		9.5	21.2					12.0	15.5	15.5	25.0	10.7
Total Split (s)	12.0	14.0		12.0	14.0					12.0	18.0	18.0	10.0	24.0
Total Split (%)	13.3%	15.6%		13.3%	15.6%					13.3%	20.0%	20.0%	11%	27%
Maximum Green (s)	8.0	7.8		8.0	7.8					6.5	12.5	12.5	6.0	18.5
Yellow Time (s)	3.0	4.1		3.0	4.1					3.3	3.3	3.3	4.0	3.3
All-Red Time (s)	1.0	2.1		1.0	2.1					2.2	2.2	2.2	0.0	2.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	0.0		
Total Lost Time (s)	4.0	6.2		4.0	6.2					5.5	5.5	5.5		
Lead/Lag	Lead	Lag		Lead	Lag						Lag	Lag		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes						Yes	Yes		Yes
Vehicle Extension (s)	1.5	2.5		1.5	2.5					2.0	2.0	2.0	3.0	2.0

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Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

															
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3	Ø7	
Recall Mode	None	Min		None	C-Min					None	None	None	None	None	
Walk Time (s)														7.0	
Flash Dont Walk (s)														14.0	
Pedestrian Calls (#/hr)														8	
Act Effct Green (s)	44.2	38.2		43.6	37.9		26.7	25.1		15.9	10.0	10.0			
Actuated g/C Ratio	0.49	0.42		0.48	0.42		0.30	0.28		0.18	0.11	0.11			
v/c Ratio	0.15	0.25		0.06	0.52		0.47	0.34		0.19	0.24	0.23			
Control Delay	16.3	20.5		7.4	22.5		23.8	15.8		21.0	40.3	1.3			
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0			
Total Delay	16.3	20.5		7.4	22.5		23.8	15.8		21.0	40.3	1.3			
LOS	B	C		A	C		C	B		C	D	A			
Approach Delay	20.0				21.9		20.1				15.3				
Approach LOS	C				C		C				B				
Queue Length 50th (ft)	12	65		10	191		83	45		16	22	0			
Queue Length 95th (ft)	39	129		m8	#388		119	89		32	51	0			
Internal Link Dist (ft)	349				409		301				253				
Turn Bay Length (ft)	290			50					105				105		
Base Capacity (vph)	318	1346		493	1374		566	582		247	221	446			
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0			
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0			
Storage Cap Reductn	0	0		0	0		0	0		0	0	0			
Reduced v/c Ratio	0.14	0.25		0.06	0.52		0.37	0.32		0.18	0.19	0.21			
Intersection Summary															
Area Type:	Other														
Cycle Length: 90															
Actuated Cycle Length: 90															
Offset: 5 (6%), Referenced to phase 2:WBTL, Start of Yellow															
Natural Cycle: 95															
Control Type: Actuated-Coordinated															
Maximum v/c Ratio: 0.52															
Intersection Signal Delay: 20.4					Intersection LOS: C										
Intersection Capacity Utilization 58.8%					ICU Level of Service B										
Analysis Period (min) 15															

Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

 Ø1	 Ø2 (R)	 Ø3	 Ø4	 Ø7	 Ø8
12 s	14 s	10 s	12 s	24 s	18 s
 Ø5	 Ø6				
12 s	14 s				

Lanes, Volumes, Timings
13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

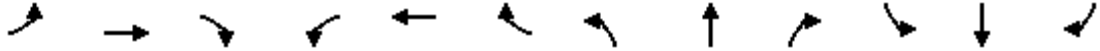
													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	57	325	32	32	624	20	11	76	74	15	96	100	
Future Volume (vph)	57	325	32	32	624	20	11	76	74	15	96	100	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	14	14	14	14	14	14	
Storage Length (ft)	0		0	65		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	0			160			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				1.00			0.99			0.99		
Frt		0.986			0.995			0.938			0.936		
Flt Protected	0.950			0.950				0.997			0.997		
Satd. Flow (prot)	1574	3283	0	1589	3335	0	0	1832	0	0	1612	0	
Flt Permitted	0.331			0.511				0.950			0.970		
Satd. Flow (perm)	548	3283	0	855	3335	0	0	1745	0	0	1568	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		11			3			43			45		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		291			405			209			244		
Travel Time (s)		6.6			9.2			4.8			5.5		
Confl. Peds. (#/hr)	3					3	1		1	1		1	
Peak Hour Factor	0.87	0.87	0.87	0.94	0.94	0.94	0.84	0.84	0.84	0.70	0.70	0.70	
Heavy Vehicles (%)	7%	5%	3%	6%	4%	5%	0%	5%	1%	0%	2%	6%	
Parking (#/hr)											2		
Adj. Flow (vph)	66	374	37	34	664	21	13	90	88	21	137	143	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	66	411	0	34	685	0	0	191	0	0	301	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)		10			16			0			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	0.92	0.92	0.92	0.92	1.07	0.92	

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Synchro 11 Report
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Lanes, Volumes, Timings
13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		3
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0		1.0
Minimum Split (s)	9.0	22.0		9.0	22.0		11.2	11.2		11.2	11.2		25.0
Total Split (s)	10.0	31.0		10.0	31.0		24.0	24.0		24.0	24.0		25.0
Total Split (%)	11.1%	34.4%		11.1%	34.4%		26.7%	26.7%		26.7%	26.7%		28%
Maximum Green (s)	6.0	24.0		6.0	24.0		17.8	17.8		17.8	17.8		21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0		4.0
All-Red Time (s)	1.0	3.0		1.0	3.0		2.2	2.2		2.2	2.2		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	4.0	7.0		4.0	7.0			6.2			6.2		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?	Yes	Yes		Yes	Yes								
Vehicle Extension (s)	1.5	2.5		1.5	2.5		2.0	2.0		2.0	2.0		0.2

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Synchro 11 Report
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Lanes, Volumes, Timings
13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

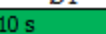
													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													14.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)	53.7	47.2		52.4	45.1			19.0			19.0		
Actuated g/C Ratio	0.60	0.52		0.58	0.50			0.21			0.21		
v/c Ratio	0.17	0.24		0.06	0.41			0.48			0.82		
Control Delay	14.8	20.1		11.0	18.3			27.8			48.3		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	14.8	20.1		11.0	18.3			27.8			48.3		
LOS	B	C		B	B			C			D		
Approach Delay		19.4			17.9			27.8			48.3		
Approach LOS		B			B			C			D		
Queue Length 50th (ft)	22	87		6	118			70			136		
Queue Length 95th (ft)	58	145		30	253			128			169		
Internal Link Dist (ft)		211			325			129			164		
Turn Bay Length (ft)				65									
Base Capacity (vph)	396	1727		551	1674			418			381		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.17	0.24		0.06	0.41			0.46			0.79		
Intersection Summary													
Area Type:	Other												
Cycle Length: 90													
Actuated Cycle Length: 90													
Offset: 45 (50%), Referenced to phase 2:WBTL, Start of Green													
Natural Cycle: 80													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.82													
Intersection Signal Delay: 24.9				Intersection LOS: C									
Intersection Capacity Utilization 52.1%				ICU Level of Service A									
Analysis Period (min) 15													

Lanes, Volumes, Timings

13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

Splits and Phases: 13: Stuart Ave & US Route 1/Van Buren Ave

 Ø1  10 s  	 Ø2 (R)  31 s  	 Ø3  25 s  	 Ø4  24 s  
 Ø5  10 s  	 Ø6  31 s  		

Lanes, Volumes, Timings
14: Van Buren Ave & Connecticut Ave

09/16/2024

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations	 		 			 	
Traffic Volume (vph)	220	99	290	101	73	415	
Future Volume (vph)	220	99	290	101	73	415	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	12	10	10	10	10	
Lane Util. Factor	0.97	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor							
Frt		0.850	0.961				
Flt Protected	0.950					0.993	
Satd. Flow (prot)	3286	1583	3107	0	0	3231	
Flt Permitted	0.950					0.823	
Satd. Flow (perm)	3286	1583	3107	0	0	2678	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		109	65				
Link Speed (mph)	30		30			30	
Link Distance (ft)	369		768			690	
Travel Time (s)	8.4		17.5			15.7	
Confl. Bikes (#/hr)			1			1	
Peak Hour Factor	0.91	0.91	0.87	0.87	0.95	0.95	
Heavy Vehicles (%)	3%	2%	5%	2%	1%	4%	
Adj. Flow (vph)	242	109	333	116	77	437	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	242	109	449	0	0	514	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	22		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.04	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9		9	15		
Number of Detectors	1	1	2		1	2	
Detector Template	Left	Right	Thru		Left	Thru	
Leading Detector (ft)	20	20	100		20	100	

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Lanes, Volumes, Timings
14: Van Buren Ave & Connecticut Ave

09/16/2024

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	20	6		20	6	
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	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	5	6		5	2	3
Permitted Phases		8			2		
Detector Phase	8	5	6		5	2	
Switch Phase							
Minimum Initial (s)	10.0	5.0	15.0		5.0	15.0	5.0
Minimum Split (s)	14.6	8.7	20.5		8.7	20.5	25.0
Total Split (s)	24.0	12.0	32.0		12.0	32.0	12.0
Total Split (%)	30.0%	15.0%	40.0%		15.0%	40.0%	15%
Maximum Green (s)	19.4	8.3	26.5		8.3	26.5	8.0
Yellow Time (s)	3.6	3.6	3.6		3.6	3.6	4.0
All-Red Time (s)	1.0	0.1	1.9		0.1	1.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	
Total Lost Time (s)	4.6	3.7	5.5			5.5	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	Min		None	C-Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							14.0
Pedestrian Calls (#/hr)							5

Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report
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Lanes, Volumes, Timings 14: Van Buren Ave & Connecticut Ave

09/16/2024

	↙	↖	↑	↗	↘	↓	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Act Effct Green (s)	11.6	21.8	47.0			54.4	
Actuated g/C Ratio	0.14	0.27	0.59			0.68	
v/c Ratio	0.51	0.21	0.24			0.28	
Control Delay	35.2	5.7	9.6			9.4	
Queue Delay	0.0	0.0	0.0			0.0	
Total Delay	35.2	5.7	9.6			9.4	
LOS	D	A	A			A	
Approach Delay	26.0		9.6			9.4	
Approach LOS	C		A			A	
Queue Length 50th (ft)	58	0	39			39	
Queue Length 95th (ft)	89	34	111			151	
Internal Link Dist (ft)	289		688			610	
Turn Bay Length (ft)							
Base Capacity (vph)	796	560	1850			1857	
Starvation Cap Reductn	0	0	0			0	
Spillback Cap Reductn	0	0	0			0	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.30	0.19	0.24			0.28	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 68 (85%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 13.9

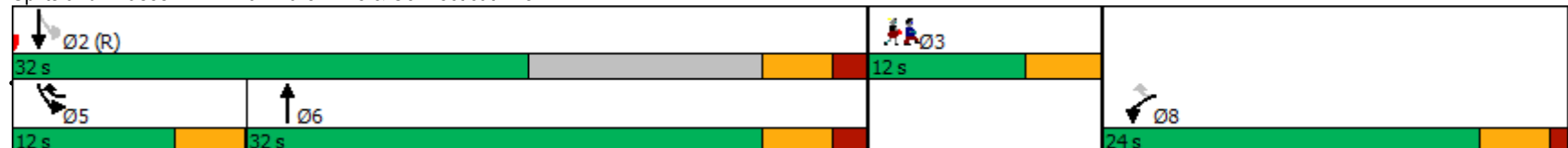
Intersection LOS: B

Intersection Capacity Utilization 47.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 14: Van Buren Ave & Connecticut Ave



Lanes, Volumes, Timings
15: Van Buren Ave & Maple St

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	143	72	103	45	102	42	127	247	22	37	350	171	
Future Volume (vph)	143	72	103	45	102	42	127	247	22	37	350	171	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	16	16	10	14	14	10	10	10	10	10	10	
Storage Length (ft)	0		0	311		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	130			100			25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.99	0.99		1.00	0.99			1.00			0.99		
Frt		0.912			0.956			0.992			0.954		
Flt Protected	0.950			0.950				0.984			0.997		
Satd. Flow (prot)	1770	1880	0	1685	1861	0	0	3132	0	0	3054	0	
Flt Permitted	0.401			0.621				0.620			0.899		
Satd. Flow (perm)	741	1880	0	1097	1861	0	0	1972	0	0	2753	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		81			23			9			88		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		109			722			690			1249		
Travel Time (s)		2.5			16.4			15.7			28.4		
Confl. Peds. (#/hr)	10		5	5		10	6					6	
Peak Hour Factor	0.80	0.80	0.80	0.81	0.81	0.81	0.90	0.90	0.90	0.92	0.92	0.92	
Heavy Vehicles (%)	2%	8%	0%	0%	3%	4%	0%	6%	0%	8%	5%	1%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	6	0	0	0	0	
Adj. Flow (vph)	179	90	129	56	126	52	141	274	24	40	380	186	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	179	219	0	56	178	0	0	439	0	0	606	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)		12			12			0			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.00	0.85	0.85	1.09	0.92	0.92	1.09	1.11	1.09	1.09	1.09	1.09	

Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report
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Lanes, Volumes, Timings
15: Van Buren Ave & Maple St

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
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	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA		
Protected Phases	7	4		3	8		5	2			6		9
Permitted Phases	4			8			2			6			
Detector Phase	7	4		3	8		5	2		6	6		
Switch Phase													
Minimum Initial (s)	4.0	7.0		4.0	7.0		4.0	10.0		10.0	10.0		1.0
Minimum Split (s)	8.9	11.5		8.9	11.9		7.7	15.1		15.2	15.2		25.0
Total Split (s)	10.0	21.0		10.0	21.0		9.0	28.0		28.0	28.0		12.0
Total Split (%)	12.5%	26.3%		12.5%	26.3%		11.3%	35.0%		35.0%	35.0%		15%
Maximum Green (s)	5.1	16.5		5.1	16.1		5.3	22.9		22.8	22.8		8.0
Yellow Time (s)	3.4	3.4		3.4	3.4		3.6	3.6		3.6	3.6		4.0
All-Red Time (s)	1.5	1.1		1.5	1.5		0.1	1.5		1.6	1.6		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	4.9	4.5		4.9	4.9			5.1			5.2		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0

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Synchro 11 Report
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Lanes, Volumes, Timings
15: Van Buren Ave & Maple St

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Recall Mode	None	None		None	None		None	C-Min		Min	Min		None
Walk Time (s)													7.0
Flash Dont Walk (s)													14.0
Pedestrian Calls (#/hr)													15
Act Effct Green (s)	24.3	19.4		18.3	11.8			41.6			41.5		
Actuated g/C Ratio	0.30	0.24		0.23	0.15			0.52			0.52		
v/c Ratio	0.52	0.42		0.19	0.61			0.43			0.41		
Control Delay	28.1	19.7		20.0	35.9			10.2			9.3		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	28.1	19.7		20.0	35.9			10.2			9.3		
LOS	C	B		C	D			B			A		
Approach Delay		23.5			32.1			10.2			9.3		
Approach LOS		C			C			B			A		
Queue Length 50th (ft)	62	59		18	73			68			32		
Queue Length 95th (ft)	#102	103		40	111			148			86		
Internal Link Dist (ft)		29			642			610			1169		
Turn Bay Length (ft)				311									
Base Capacity (vph)	343	518		298	392			1029			1471		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.52	0.42		0.19	0.45			0.43			0.41		
Intersection Summary													
Area Type:	Other												
Cycle Length: 80													
Actuated Cycle Length: 80													
Offset: 40 (50%), Referenced to phase 2:NBTL, Start of Yellow													
Natural Cycle: 90													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.61													
Intersection Signal Delay: 16.1				Intersection LOS: B									
Intersection Capacity Utilization 60.5%				ICU Level of Service B									
Analysis Period (min) 15													

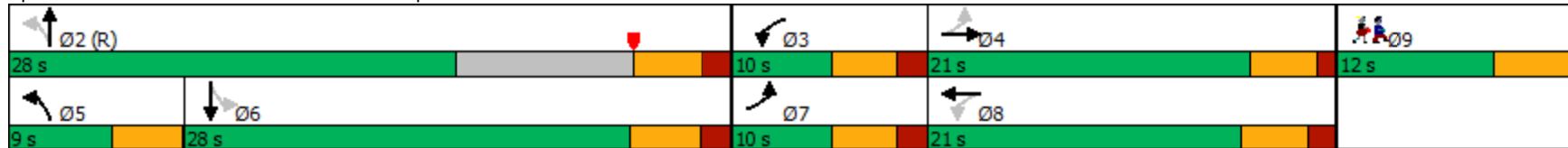
Lanes, Volumes, Timings

15: Van Buren Ave & Maple St

09/16/2024

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 15: Van Buren Ave & Maple St



Lanes, Volumes, Timings
16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	94	40	230	42	158	6	264	30	126	337	37
Future Volume (vph)	93	94	40	230	42	158	6	264	30	126	337	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	10	12	12	10	11	11	10	10	12
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							0.97				0.99	
Frt		0.976			0.881			0.985			0.985	
Flt Protected		0.980		0.950			0.950			0.950		
Satd. Flow (prot)	0	2016	0	1685	1661	0	1685	1721	0	1589	1619	0
Flt Permitted		0.755		0.479			0.439			0.342		
Satd. Flow (perm)	0	1553	0	849	1661	0	756	1721	0	572	1619	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			200			7			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		254			189			680			409	
Travel Time (s)		5.8			4.3			15.5			9.3	
Confl. Peds. (#/hr)							36					36
Peak Hour Factor	0.78	0.78	0.78	0.79	0.79	0.79	0.90	0.90	0.90	0.89	0.89	0.89
Heavy Vehicles (%)	1%	0%	10%	0%	0%	1%	0%	5%	6%	6%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	3	0
Adj. Flow (vph)	119	121	51	291	53	200	7	293	33	142	379	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	0	291	253	0	7	326	0	142	421	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			50			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	1.09	1.00	1.00	1.09	1.04	1.04	1.09	1.11	1.00
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	

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Synchro 11 Report
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Lanes, Volumes, Timings
16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	22.5	22.5		12.0	22.5		10.0	22.5		9.5	25.2	
Total Split (s)	28.0	28.0		12.0	28.0		10.0	30.0		10.0	30.0	
Total Split (%)	35.0%	35.0%		15.0%	35.0%		12.5%	37.5%		12.5%	37.5%	
Maximum Green (s)	23.3	23.3		8.7	23.3		4.7	24.8		4.7	24.8	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		0.1	1.5		1.6	1.5		1.6	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.7		3.3	4.7		5.3	5.2		5.3	5.2	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	Min	
Walk Time (s)											7.0	
Flash Dont Walk (s)											13.0	

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Synchro 11 Report
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Lanes, Volumes, Timings
16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)											20	
Act Effct Green (s)		18.8		33.9	32.5		30.9	25.6		36.5	35.6	
Actuated g/C Ratio		0.24		0.42	0.41		0.39	0.32		0.46	0.44	
v/c Ratio		0.78		0.62	0.32		0.02	0.59		0.41	0.58	
Control Delay		41.6		22.4	5.0		19.7	30.7		18.5	24.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		41.6		22.4	5.0		19.7	30.7		18.5	24.3	
LOS		D		C	A		B	C		B	C	
Approach Delay		41.6			14.3			30.5			22.8	
Approach LOS		D			B			C			C	
Queue Length 50th (ft)		129		94	15		0	130		51	162	
Queue Length 95th (ft)		167		126	41		12	203		78	#349	
Internal Link Dist (ft)		174			109			600			329	
Turn Bay Length (ft)												
Base Capacity (vph)		461		468	844		354	571		345	725	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.63		0.62	0.30		0.02	0.57		0.41	0.58	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 71 (89%), Referenced to phase 2:NBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 24.8

Intersection LOS: C

Intersection Capacity Utilization 65.5%

ICU Level of Service C

Analysis Period (min) 15

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

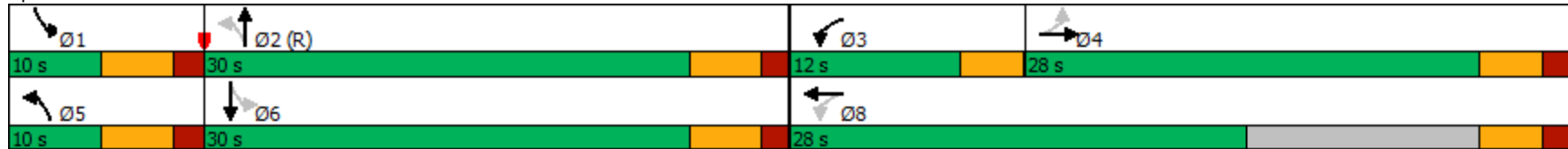
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings

16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

Splits and Phases: 16: Van Buren Ave & Grandview Ave/US 7



Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	11	133	64	287	293	104	22	129	400	54	129	0	
Future Volume (vph)	11	133	64	287	293	104	22	129	400	54	129	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10	
Storage Length (ft)	0		60	0		0	120		115	80		0	
Storage Lanes	0		1	1		0	1		1	1		0	
Taper Length (ft)	25			25			80			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	0.98	1.00	0.99								
Frt			0.850		0.961				0.850				
Flt Protected		0.996		0.950			0.950			0.950			
Satd. Flow (prot)	0	1734	1463	1620	1660	0	1685	1689	1446	1668	1673	0	
Flt Permitted		0.000		0.605			0.657			0.669			
Satd. Flow (perm)	0	0	1439	1029	1660	0	1165	1689	1446	1175	1673	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			145		28				426				
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		350			460			409			259		
Travel Time (s)		8.0			10.5			9.3			5.9		
Confl. Peds. (#/hr)	2		4	4		2							
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.94	0.94	0.94	0.82	0.82	0.82	
Heavy Vehicles (%)	0%	2%	3%	4%	1%	5%	0%	5%	3%	1%	6%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	3	0	0	0	
Adj. Flow (vph)	12	146	70	322	329	117	23	137	426	66	157	0	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	158	70	322	446	0	23	137	426	66	157	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			10			10			10		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.11	1.09	1.09	1.09	

Existing AM Balanced 8:49 pm 08/09/2024

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Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2	1	1	2		
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru		
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100		
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	20	6		20	6	20	20	6		
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	custom	pm+pt	NA		Perm	NA	pm+ov	Perm	NA		
Protected Phases	7	4		8	4			2	8		6		3
Permitted Phases	4	7	4 7	4	8		2		2	6			
Detector Phase	7	4	4	8	4		2	2	8	6	6		
Switch Phase													
Minimum Initial (s)	5.0	7.0		7.0	7.0		15.0	15.0	7.0	15.0	15.0		1.0
Minimum Split (s)	10.7	12.7		12.0	12.7		19.6	19.6	12.0	19.6	19.6		26.0
Total Split (s)	11.0	14.0		26.0	14.0		17.0	17.0	26.0	17.0	17.0		12.0
Total Split (%)	13.8%	17.5%		32.5%	17.5%		21.3%	21.3%	32.5%	21.3%	21.3%		15%
Maximum Green (s)	5.3	8.3		21.0	8.3		12.4	12.4	21.0	12.4	12.4		8.0
Yellow Time (s)	3.7	3.7		3.5	3.7		3.6	3.6	3.5	3.6	3.6		4.0
All-Red Time (s)	2.0	2.0		1.5	2.0		1.0	1.0	1.5	1.0	1.0		0.0
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.7		5.0	5.7		4.6	4.6	5.0	4.6	4.6		
Lead/Lag		Lag		Lead	Lag				Lead				
Lead-Lag Optimize?		Yes		Yes	Yes				Yes				
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0

Existing AM Balanced 8:49 pm 08/09/2024

Synchro 11 Report

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Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Recall Mode	None	None		None	None		C-Min	C-Min	None	Min	Min		None
Walk Time (s)													7.0
Flash Dont Walk (s)													15.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)		11.4	11.4	27.9	32.2		35.1	35.1	54.5	35.1	35.1		
Actuated g/C Ratio		0.14	0.14	0.35	0.40		0.44	0.44	0.68	0.44	0.44		
v/c Ratio		0.64	0.21	0.68	0.65		0.05	0.19	0.38	0.13	0.21		
Control Delay		47.1	1.5	24.6	22.4		18.2	16.6	1.9	18.1	17.8		
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.1	0.0	0.0		
Total Delay		47.1	1.5	24.6	22.4		18.2	16.6	2.0	18.1	17.8		
LOS		D	A	C	C		B	B	A	B	B		
Approach Delay		33.1			23.3			6.1			17.9		
Approach LOS		C			C			A			B		
Queue Length 50th (ft)		73	0	107	154		5	35	9	19	47		
Queue Length 95th (ft)		#187	0	176	248		m18	m90	11	51	99		
Internal Link Dist (ft)		270			380			329			179		
Turn Bay Length (ft)			60				120		115	80			
Base Capacity (vph)		249	331	563	688		510	740	1186	515	733		
Starvation Cap Reductn		0	0	0	0		0	0	142	0	0		
Spillback Cap Reductn		0	0	0	0		0	0	0	0	0		
Storage Cap Reductn		0	0	0	0		0	0	0	0	0		
Reduced v/c Ratio		0.63	0.21	0.57	0.65		0.05	0.19	0.41	0.13	0.21		
Intersection Summary													
Area Type:	Other												
Cycle Length: 80													
Actuated Cycle Length: 80													
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green													
Natural Cycle: 85													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.68													
Intersection Signal Delay: 18.3				Intersection LOS: B									
Intersection Capacity Utilization 71.6%				ICU Level of Service C									
Analysis Period (min) 15													

Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

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

Queue shown is maximum after two cycles.

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

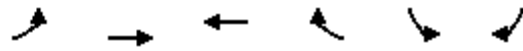
Splits and Phases: 17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

 Ø2 (R)  17 s 	 Ø3  12 s 	 Ø8  26 s 	 Ø4  14 s 	 Ø7  11 s 
 Ø6  17 s 				

Lanes, Volumes, Timings

1: US Route 1 & W Norwalk Rd

09/16/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (vph)	67	552	948	69	19	94
Future Volume (vph)	67	552	948	69	19	94
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						
Frt			0.990		0.887	
Flt Protected		0.995			0.992	
Satd. Flow (prot)	0	3529	3483	0	1605	0
Flt Permitted		0.995			0.992	
Satd. Flow (perm)	0	3529	3483	0	1605	0
Link Speed (mph)		30	35		35	
Link Distance (ft)		588	464		319	
Travel Time (s)		13.4	9.0		6.2	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.90	0.90	0.95	0.95	0.81	0.81
Heavy Vehicles (%)	0%	2%	2%	2%	0%	5%
Bus Blockages (#/hr)	0	0	3	0	0	0
Adj. Flow (vph)	74	613	998	73	23	116
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	687	1071	0	139	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.01	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Lanes, Volumes, Timings
1: US Route 1 & W Norwalk Rd

09/16/2024

Intersection Capacity Utilization 62.8%

ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings
2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	7	565	0	0	928	4	98	1	459	6	0	13	
Future Volume (vph)	7	565	0	0	928	4	98	1	459	6	0	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	11	11	11	12	12	14	
Storage Length (ft)	105		0	0		0	430		450	75		0	
Storage Lanes	1		0	0		0	1		1	1		1	
Taper Length (ft)	90			25			100			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	
Frt					0.999			0.851	0.850			0.850	
Flt Protected	0.950						0.950			0.950			
Satd. Flow (prot)	1440	3374	0	0	3222	0	1646	1428	1426	1805	0	1566	
Flt Permitted	0.950						0.950			0.950			
Satd. Flow (perm)	1440	3374	0	0	3222	0	1646	1428	1426	1805	0	1566	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)					1			294	294			161	
Link Speed (mph)		35			35			30			30		
Link Distance (ft)		464			619			634			228		
Travel Time (s)		9.0			12.1			14.4			5.2		
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.78	0.78	0.78	0.79	0.79	0.79	
Heavy Vehicles (%)	17%	3%	0%	0%	2%	0%	6%	0%	4%	0%	0%	10%	
Bus Blockages (#/hr)	0	2	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)					3								
Adj. Flow (vph)	8	608	0	0	1043	4	126	1	588	8	0	16	
Shared Lane Traffic (%)									50%				
Lane Group Flow (vph)	8	608	0	0	1047	0	126	295	294	8	0	16	
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)		12			12			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.05	1.04	1.09	1.13	1.04	1.04	1.04	1.04	1.00	1.00	0.92	
Turning Speed (mph)	15		9	15		9	15		9	15		9	

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Number of Detectors	1	2			2		1	2	1	1		1	
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right	
Leading Detector (ft)	20	100			100		20	100	20	20		20	
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			6		20	6	20	20		20	
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					
Detector 2 Size(ft)		6			6			6					
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex					
Detector 2 Channel													
Detector 2 Extend (s)		0.0			0.0			0.0					
Turn Type	Prot	NA			NA		Prot	NA	Perm	Prot		pm+ov	
Protected Phases	1	1 2			2		4	3 4		5		1	3
Permitted Phases									3 4			5	
Detector Phase	1	2			2		4	4	4	5		1	
Switch Phase													
Minimum Initial (s)	5.0				15.0		9.0			7.0		5.0	1.0
Minimum Split (s)	11.9				22.5		13.1			11.0		11.9	23.0
Total Split (s)	10.0				38.9		5.1			14.0		10.0	12.0
Total Split (%)	12.5%				48.6%		6.4%			17.5%		12.5%	15%
Maximum Green (s)	3.6				32.2		1.0			10.0		3.6	8.0
Yellow Time (s)	3.0				4.1		3.0			3.0		3.0	4.0
All-Red Time (s)	3.4				2.6		1.1			1.0		3.4	0.0
Lost Time Adjust (s)	0.0				0.0		0.0			0.0		0.0	
Total Lost Time (s)	6.4				6.7		4.1			4.0		6.4	
Lead/Lag	Lead				Lag		Lag					Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes					Yes	Yes
Vehicle Extension (s)	2.0				2.5		2.0			2.0		2.0	3.0
Recall Mode	None				C-Min		None			None		None	None

Lanes, Volumes, Timings
2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Walk Time (s)													7.0
Flash Dont Walk (s)													12.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)	5.3	49.6			44.4		15.3	17.8	17.8	7.0		7.5	
Actuated g/C Ratio	0.07	0.62			0.56		0.19	0.22	0.22	0.09		0.09	
v/c Ratio	0.08	0.29			0.59		0.40	0.54	0.54	0.05		0.05	
Control Delay	36.7	7.5			19.1		42.0	8.3	8.2	34.3		0.4	
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0	
Total Delay	36.7	7.5			19.1		42.0	8.3	8.2	34.3		0.4	
LOS	D	A			B		D	A	A	C		A	
Approach Delay		7.9			19.1			14.2			11.7		
Approach LOS		A			B			B			B		
Queue Length 50th (ft)	4	59			212		54	0	0	4		0	
Queue Length 95th (ft)	17	107			188		#195	40	38	15		0	
Internal Link Dist (ft)		384			539			554			148		
Turn Bay Length (ft)	105						430		450	75			
Base Capacity (vph)	96	2089			1787		315	546	546	225		292	
Starvation Cap Reductn	0	0			0		0	0	0	0		0	
Spillback Cap Reductn	0	0			0		0	0	0	0		0	
Storage Cap Reductn	0	0			0		0	0	0	0		0	
Reduced v/c Ratio	0.08	0.29			0.59		0.40	0.54	0.54	0.04		0.05	
Intersection Summary													
Area Type:	Other												
Cycle Length: 80													
Actuated Cycle Length: 80													
Offset: 7 (9%), Referenced to phase 2:EBWB, Start of Yellow													
Natural Cycle: 95													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.59													
Intersection Signal Delay: 14.7				Intersection LOS: B									
Intersection Capacity Utilization 51.8%				ICU Level of Service A									
Analysis Period (min) 15													
# 95th percentile volume exceeds capacity, queue may be longer.													

Lanes, Volumes, Timings

2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

Queue shown is maximum after two cycles.

Splits and Phases: 2: I-95 NB Exit 13 Off Ramp & US Route 1



Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	111	687	90	75	665	79	86	95	81	72	87	123	
Future Volume (vph)	111	687	90	75	665	79	86	95	81	72	87	123	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	12	11	11	10	10	10	
Storage Length (ft)	0		0	210		75	163		0	135		135	
Storage Lanes	1		0	1		1	1		0	1		1	
Taper Length (ft)	25			50			50			50			
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		0.983				0.850		0.931				0.850	
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1685	3329	0	1685	3455	1473	1805	1663	0	1685	1655	1478	
Flt Permitted	0.950			0.950			0.694			0.527			
Satd. Flow (perm)	1685	3329	0	1685	3455	1473	1319	1663	0	935	1655	1478	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		18				239		50				218	
Link Speed (mph)		35			35			30			30		
Link Distance (ft)		601			420			331			299		
Travel Time (s)		11.7			8.2			7.5			6.8		
Peak Hour Factor	0.92	0.92	0.92	0.97	0.97	0.97	0.84	0.84	0.84	0.89	0.89	0.89	
Heavy Vehicles (%)	0%	2%	11%	0%	1%	6%	0%	1%	5%	0%	5%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	5	0	
Adj. Flow (vph)	121	747	98	77	686	81	102	113	96	81	98	138	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	121	845	0	77	686	81	102	209	0	81	98	138	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.04	1.04	1.09	1.12	1.09	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2		1	2	1	1	2		1	2	1	

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
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	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm	
Protected Phases	1	6		5	2			4			4		3
Permitted Phases						2	4			4		4	
Detector Phase	1	6		5	2	2	4	4		4	4	4	
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	8.0	8.0		8.0	8.0	8.0	1.0
Minimum Split (s)	10.4	22.5		10.4	22.5	22.5	14.7	14.7		14.7	14.7	14.7	29.0
Total Split (s)	23.0	30.0		15.0	22.0	22.0	25.0	25.0		25.0	25.0	25.0	10.0
Total Split (%)	28.8%	37.5%		18.8%	27.5%	27.5%	31.3%	31.3%		31.3%	31.3%	31.3%	13%
Maximum Green (s)	18.1	24.8		10.1	16.8	16.8	18.3	18.3		18.3	18.3	18.3	6.0
Yellow Time (s)	3.0	4.1		3.0	4.1	4.1	4.0	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.9	1.1		1.9	1.1	1.1	2.7	2.7		2.7	2.7	2.7	0.0
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)	4.9	5.2		4.9	5.2	5.2	6.7	6.7		6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0		2.0	2.0	2.0	3.0
Recall Mode	None	Max		None	C-Max	C-Max	None	None		None	None	None	None
Walk Time (s)													7.0

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Flash Dont Walk (s)													18.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)	10.1	42.2		7.8	40.1	40.1	13.1	13.1		13.1	13.1	13.1	
Actuated g/C Ratio	0.13	0.53		0.10	0.50	0.50	0.16	0.16		0.16	0.16	0.16	
v/c Ratio	0.57	0.48		0.47	0.40	0.09	0.47	0.67		0.53	0.36	0.33	
Control Delay	50.4	10.6		36.0	28.5	3.2	36.5	33.6		42.2	32.1	2.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	50.4	10.6		36.0	28.5	3.2	36.5	33.6		42.2	32.1	2.8	
LOS	D	B		D	C	A	D	C		D	C	A	
Approach Delay		15.6			26.7			34.5			21.9		
Approach LOS		B			C			C			C		
Queue Length 50th (ft)	47	142		37	159	1	47	75		37	44	0	
Queue Length 95th (ft)	99	#213		81	254	18	80	121		75	80	8	
Internal Link Dist (ft)		521			340			251			219		
Turn Bay Length (ft)				210		75	163			135		135	
Base Capacity (vph)	381	1766		212	1732	858	301	418		213	378	506	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0	
Reduced v/c Ratio	0.32	0.48		0.36	0.40	0.09	0.34	0.50		0.38	0.26	0.27	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 24 (30%), Referenced to phase 2:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 22.7

Intersection LOS: C

Intersection Capacity Utilization 62.2%

ICU Level of Service B

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

Splits and Phases: 3: Richards Ave & Connecticut Avenue/US Route 1

 Ø1 23 s	 Ø2 (R) 22 s	 Ø3 10 s	 Ø4 25 s
 Ø5 15 s	 Ø6 30 s		

Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	838	30	25	690	108	13	4	41	134	0	55
Future Volume (vph)	45	838	30	25	690	108	13	4	41	134	0	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	12	12	12
Storage Length (ft)	0		0	50		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	0		1
Taper Length (ft)	60			80			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
Frt		0.995			0.980			0.863				0.850
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1685	3375	0	1685	3362	0	1805	1640	0	0	1805	1615
Flt Permitted	0.950			0.950			0.596				0.719	
Satd. Flow (perm)	1685	3375	0	1685	3362	0	1132	1640	0	0	1366	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			32			54				65
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		293			385			261			246	
Travel Time (s)		5.7			7.5			5.9			5.6	
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.76	0.76	0.76	0.84	0.84	0.84
Heavy Vehicles (%)	0%	3%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	47	882	32	27	750	117	17	5	54	160	0	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	914	0	27	867	0	17	59	0	0	160	65
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)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template	Left			Left			Left			Left		Right

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)	20	181		20	206		20	6		20	6	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		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
Detector 1 Channel		2,3		6	7,8			5			9	
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)		175			200							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel		40,41			43,44							
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	1	6		5	2			4			4	1
Permitted Phases							4			4		4
Detector Phase	1	6		5	2		4	4		4	4	1
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		9.0	9.0		9.0	9.0	4.0
Minimum Split (s)	8.6	20.2		8.6	20.2		35.5	35.5		35.5	35.5	8.6
Total Split (s)	15.0	46.0		15.0	46.0		19.0	19.0		19.0	19.0	15.0
Total Split (%)	18.8%	57.5%		18.8%	57.5%		23.8%	23.8%		23.8%	23.8%	18.8%
Maximum Green (s)	10.4	40.8		10.4	40.8		13.5	13.5		13.5	13.5	10.4
Yellow Time (s)	3.0	4.1		3.0	4.1		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.6	1.1		1.6	1.1		2.5	2.5		2.5	2.5	1.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.6	5.2		4.6	5.2		5.5	5.5			5.5	4.6
Lead/Lag	Lead	Lag		Lead	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	C-Max		None	None		None	None	None
Walk Time (s)							18.0	18.0		18.0	18.0	
Flash Dont Walk (s)							1.0	1.0		1.0	1.0	

Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)							5	5		5	5	
Act Effct Green (s)	6.7	52.4		5.9	47.6		12.2	12.2			12.2	24.5
Actuated g/C Ratio	0.08	0.66		0.07	0.60		0.15	0.15			0.15	0.31
v/c Ratio	0.33	0.41		0.22	0.43		0.10	0.20			0.77	0.12
Control Delay	48.6	4.8		38.5	10.4		29.8	11.8			57.2	5.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	48.6	4.8		38.5	10.4		29.8	11.8			57.2	5.7
LOS	D	A		D	B		C	B			E	A
Approach Delay		6.9			11.3			15.8			42.3	
Approach LOS		A			B			B			D	
Queue Length 50th (ft)	20	15		13	120		7	2			76	0
Queue Length 95th (ft)	m54	77		37	178		21	24			#144	21
Internal Link Dist (ft)		213			305			181			166	
Turn Bay Length (ft)				50			150					
Base Capacity (vph)	219	2212		219	2011		191	321			230	609
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.21	0.41		0.12	0.43		0.09	0.18			0.70	0.11

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 52 (65%), Referenced to phase 2:WBT, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 12.7

Intersection LOS: B

Intersection Capacity Utilization 54.3%

ICU Level of Service A

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

Splits and Phases: 4: Liquidators Driveway/Walmart Driveway & US Route 1



Lanes, Volumes, Timings
5: Keeler Ave & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	696	74	56	709	199	52	56	69	187	61	36
Future Volume (vph)	31	696	74	56	709	199	52	56	69	187	61	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	10	10	10
Storage Length (ft)	0		0	0		210	0		150	190		0
Storage Lanes	1		0	1		1	1		1	2		0
Taper Length (ft)	75			25			25			40		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00					0.98						
Frt		0.986				0.850		0.917			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1685	3334	0	1685	3408	1531	1805	1702	0	3268	1643	0
Flt Permitted	0.316			0.260			0.950			0.950		
Satd. Flow (perm)	560	3334	0	461	3408	1498	1805	1702	0	3268	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				214		54			26	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		282			847			500			530	
Travel Time (s)		5.5			16.5			11.4			12.0	
Confl. Peds. (#/hr)	1					1						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.87	0.87	0.87	0.84	0.84	0.84
Heavy Vehicles (%)	0%	3%	5%	0%	2%	2%	0%	4%	1%	0%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	2	0	0	0	0	0	0	0
Adj. Flow (vph)	33	748	80	60	762	214	60	64	79	223	73	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	828	0	60	762	214	60	143	0	223	116	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)		10			10			12			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.05	1.04	1.00	1.00	1.00	1.09	1.09	1.09

Lanes, Volumes, Timings
5: Keeler Ave & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	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)		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	Prot	NA		Prot	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2		2						
Detector Phase	1	6		5	2	2	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0	15.0	4.0	5.0		4.0	5.0	
Minimum Split (s)	10.3	22.5		10.3	22.5	22.5	9.5	31.6		9.5	14.0	
Total Split (s)	13.0	38.0		13.0	48.0	48.0	15.0	14.0		15.0	14.0	
Total Split (%)	14.4%	42.2%		14.4%	53.3%	53.3%	16.7%	15.6%		16.7%	15.6%	
Maximum Green (s)	7.2	32.3		7.2	42.3	42.3	10.4	7.4		10.4	7.6	
Yellow Time (s)	3.0	4.7		3.0	4.7	4.7	3.0	3.7		3.0	3.5	
All-Red Time (s)	2.8	1.0		2.8	1.0	1.0	1.6	2.9		1.6	2.9	
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)	5.8	5.7		5.8	5.7	5.7	4.6	6.6		4.6	6.4	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	

Lanes, Volumes, Timings
5: Keeler Ave & US Route 1

09/16/2024

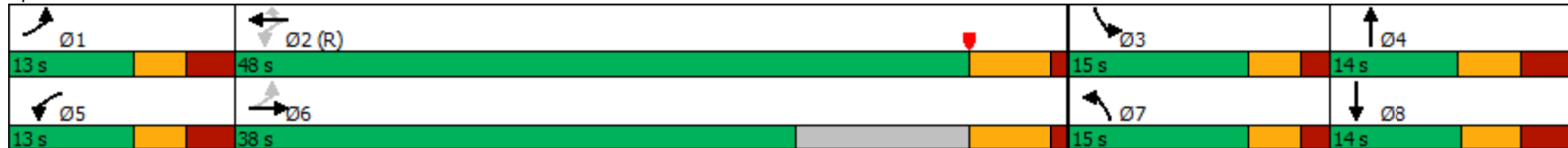
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)								24.0				
Flash Dont Walk (s)								1.0				
Pedestrian Calls (#/hr)								5				
Act Effct Green (s)	50.9	45.9		52.6	48.5	48.5	8.2	7.2		9.9	11.2	
Actuated g/C Ratio	0.57	0.51		0.58	0.54	0.54	0.09	0.08		0.11	0.12	
v/c Ratio	0.08	0.49		0.17	0.42	0.24	0.37	0.77		0.62	0.51	
Control Delay	7.6	16.2		8.3	14.5	2.7	44.2	52.9		46.3	40.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	7.6	16.2		8.3	14.5	2.7	44.2	52.9		46.3	40.1	
LOS	A	B		A	B	A	D	D		D	D	
Approach Delay		15.9			11.7			50.4			44.1	
Approach LOS		B			B			D			D	
Queue Length 50th (ft)	7	162		12	145	0	33	50		62	49	
Queue Length 95th (ft)	18	217		28	198	36	68	#134		92	#118	
Internal Link Dist (ft)		202			767			420			450	
Turn Bay Length (ft)						210				190		
Base Capacity (vph)	410	1706		367	1836	906	208	190		377	226	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.08	0.49		0.16	0.42	0.24	0.29	0.75		0.59	0.51	
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 48 (53%), Referenced to phase 2:WBTL, Start of Yellow												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.77												
Intersection Signal Delay: 20.9				Intersection LOS: C								
Intersection Capacity Utilization 56.4%				ICU Level of Service B								
Analysis Period (min) 15												

Lanes, Volumes, Timings 5: Keeler Ave & US Route 1

09/16/2024

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Keeler Ave & US Route 1



Lanes, Volumes, Timings

6: Rampart Road/Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	814	145	77	798	40	137	11	91	28	11	47
Future Volume (vph)	30	814	145	77	798	40	137	11	91	28	11	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	13	13	12	13	13
Storage Length (ft)	200		0	200		230	120		0	0		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	75			80			80			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
Ped Bike Factor	1.00	1.00		1.00		0.97	1.00				0.99	
Frt		0.977				0.850		0.866			0.878	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1685	3335	0	1685	3421	1561	1805	1685	0	1805	1706	0
Flt Permitted	0.950			0.950			0.711			0.685		
Satd. Flow (perm)	1677	3335	0	1680	3421	1518	1350	1685	0	1302	1706	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				105		99			57	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		539			722			374			244	
Travel Time (s)		10.5			14.1			8.5			5.5	
Confl. Peds. (#/hr)	6		4	4		6	1					1
Peak Hour Factor	0.94	0.94	0.94	0.82	0.82	0.82	0.92	0.92	0.92	0.83	0.83	0.83
Heavy Vehicles (%)	0%	2%	1%	0%	2%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	32	866	154	94	973	49	149	12	99	34	13	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	1020	0	94	973	49	149	111	0	34	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)		12			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	0.96	0.96	1.00	0.96	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

6: Rampart Road/Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	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)		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		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Detector Phase	1	6		5	2	2	4	4		4	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	11.0	22.9		11.0	22.9	22.9	30.2	30.2		30.2	30.2	
Total Split (s)	19.0	37.0		19.0	37.0	37.0	24.0	24.0		24.0	24.0	
Total Split (%)	23.8%	46.3%		23.8%	46.3%	46.3%	30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	13.5	31.5		13.5	31.5	31.5	18.8	18.8		18.8	18.8	
Yellow Time (s)	3.0	4.1		3.0	4.1	4.1	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	1.4		2.5	1.4	1.4	2.2	2.2		2.2	2.2	
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)	5.5	5.5		5.5	5.5	5.5	5.2	5.2		5.2	5.2	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Max		None	C-Max	C-Max	None	None		None	None	

Lanes, Volumes, Timings
6: Rampart Road/Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)							24.0	24.0		24.0	24.0	
Flash Dont Walk (s)							1.0	1.0		1.0	1.0	
Pedestrian Calls (#/hr)							5	5		5	5	
Act Effct Green (s)	6.2	43.1		8.8	50.1	50.1	13.9	13.9		13.9	13.9	
Actuated g/C Ratio	0.08	0.54		0.11	0.63	0.63	0.17	0.17		0.17	0.17	
v/c Ratio	0.25	0.56		0.51	0.45	0.05	0.63	0.30		0.15	0.20	
Control Delay	40.7	13.8		42.3	10.9	0.3	42.2	9.5		27.4	11.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.7	13.8		42.3	10.9	0.3	42.2	9.5		27.4	11.3	
LOS	D	B		D	B	A	D	A		C	B	
Approach Delay		14.7			13.1			28.2			16.6	
Approach LOS		B			B			C			B	
Queue Length 50th (ft)	16	93		45	93	0	70	5		15	6	
Queue Length 95th (ft)	45	239		78	214	0	121	43		33	31	
Internal Link Dist (ft)		459			642			294			164	
Turn Bay Length (ft)	200			200		230	120					
Base Capacity (vph)	284	1812		284	2144	990	317	471		305	444	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.11	0.56		0.33	0.45	0.05	0.47	0.24		0.11	0.16	
Intersection Summary												
Area Type:	Other											
Cycle Length: 80												
Actuated Cycle Length: 80												
Offset: 40 (50%), Referenced to phase 2:WBT, Start of Yellow												
Natural Cycle: 70												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.63												
Intersection Signal Delay: 15.4				Intersection LOS: B								
Intersection Capacity Utilization 59.2%				ICU Level of Service B								
Analysis Period (min) 15												

Lanes, Volumes, Timings

6: Rampart Road/Driveway & US Route 1

09/16/2024

Splits and Phases: 6: Rampart Road/Driveway & US Route 1

 Ø1 19 s	 Ø2 (R) 37 s	 Ø4 24 s
 Ø5 19 s	 Ø6 37 s	

Lanes, Volumes, Timings
7: US Route 1 & Shop Rite Driveway

09/16/2024

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	60	873	837	168	114	68	
Future Volume (vph)	60	873	837	168	114	68	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	11	10	13	
Storage Length (ft)	315			460	0	0	
Storage Lanes	1			1	2	1	
Taper Length (ft)	85				25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor	1.00			0.98		0.98	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1685	3388	3421	1561	3268	1669	
Flt Permitted	0.291				0.950		
Satd. Flow (perm)	515	3388	3421	1522	3268	1636	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				179		79	
Link Speed (mph)		35	35		30		
Link Distance (ft)		722	805		215		
Travel Time (s)		14.1	15.7		4.9		
Confl. Peds. (#/hr)	6			6		4	
Peak Hour Factor	0.93	0.93	0.94	0.94	0.86	0.86	
Heavy Vehicles (%)	0%	3%	2%	0%	0%	0%	
Adj. Flow (vph)	65	939	890	179	133	79	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	65	939	890	179	133	79	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		10	10		20		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.04	1.04	1.04	1.09	0.96	
Turning Speed (mph)	15			9	15	9	

Lanes, Volumes, Timings
7: US Route 1 & Shop Rite Driveway

09/16/2024

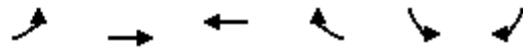
							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	20	100	100	20	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	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	
Detector 1 Queue (s)	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	
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	pm+ov	Prot	Perm	
Protected Phases	1	1 2	2	4	4		3
Permitted Phases	2			2		4	
Detector Phase	1	2	2	4	4	4	
Switch Phase							
Minimum Initial (s)	4.0		15.0	9.0	9.0	9.0	1.0
Minimum Split (s)	9.5		22.5	13.3	13.3	13.3	28.0
Total Split (s)	13.0		52.0	20.0	20.0	20.0	15.0
Total Split (%)	13.0%		52.0%	20.0%	20.0%	20.0%	15%
Maximum Green (s)	9.0		45.9	15.7	15.7	15.7	11.0
Yellow Time (s)	3.0		4.1	3.0	3.0	3.0	4.0
All-Red Time (s)	1.0		2.0	1.3	1.3	1.3	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0		6.1	4.3	4.3	4.3	
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Vehicle Extension (s)	1.0		3.0	2.0	2.0	2.0	3.0
Recall Mode	None		C-Max	None	None	None	None

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
7: US Route 1 & Shop Rite Driveway

09/16/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Walk Time (s)							7.0
Flash Dont Walk (s)							17.0
Pedestrian Calls (#/hr)							5
Act Effct Green (s)	76.0	79.2	70.1	81.4	9.5	9.5	
Actuated g/C Ratio	0.76	0.79	0.70	0.81	0.10	0.10	
v/c Ratio	0.15	0.35	0.37	0.14	0.43	0.35	
Control Delay	4.3	4.2	7.5	0.8	47.0	14.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.3	4.2	7.5	0.8	47.0	14.2	
LOS	A	A	A	A	D	B	
Approach Delay		4.2	6.4		34.8		
Approach LOS		A	A		C		
Queue Length 50th (ft)	5	53	73	0	42	0	
Queue Length 95th (ft)	28	173	341	0	67	39	
Internal Link Dist (ft)		642	725		135		
Turn Bay Length (ft)	315			460			
Base Capacity (vph)	511	2682	2398	1355	513	323	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.35	0.37	0.13	0.26	0.24	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 12 (12%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.43

Intersection Signal Delay: 8.0

Intersection LOS: A

Intersection Capacity Utilization 46.0%

ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings

7: US Route 1 & Shop Rite Driveway

09/16/2024

Splits and Phases: 7: US Route 1 & Shop Rite Driveway



Lanes, Volumes, Timings
8: Scribner Avenue & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	94	476	607	166	840	80	81	41	73	66	163	67	
Future Volume (vph)	94	476	607	166	840	80	81	41	73	66	163	67	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	10	10	11	11	10	13	13	10	11	11	
Storage Length (ft)	230		0	540		0	90		0	144		0	
Storage Lanes	1		1	1		0	1		0	1		0	
Taper Length (ft)	100			100			40			100			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.99		0.98		1.00		1.00				1.00		
Frt			0.850		0.987			0.904			0.956		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1685	3421	1478	1685	3357	0	1685	1775	0	1685	1678	0	
Flt Permitted	0.950			0.950			0.598			0.180			
Satd. Flow (perm)	1670	3421	1448	1685	3357	0	1059	1775	0	319	1678	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			626		10			74			19		
Link Speed (mph)		35			35			30			30		
Link Distance (ft)		482			773			571			677		
Travel Time (s)		9.4			15.1			13.0			15.4		
Confl. Peds. (#/hr)	10					10	1					1	
Confl. Bikes (#/hr)			1					1					
Peak Hour Factor	0.97	0.97	0.97	0.98	0.98	0.98	0.89	0.89	0.89	0.88	0.88	0.88	
Heavy Vehicles (%)	0%	2%	2%	0%	2%	5%	0%	0%	0%	0%	6%	0%	
Adj. Flow (vph)	97	491	626	169	857	82	91	46	82	75	185	76	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	97	491	626	169	939	0	91	128	0	75	261	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)		24			10			10			10		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.09	1.09	1.04	1.04	1.09	0.96	0.96	1.09	1.04	1.04	

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
8: Scribner Avenue & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	3	1	0	3	1		1	1		1	1		
Detector Template													
Leading Detector (ft)	27	166	0	34	171		19	19		28	28		
Trailing Detector (ft)	-6	160	0	-6	165		-9	-9		0	0		
Detector 1 Position(ft)	-6	160	0	-6	165		-9	-9		0	0		
Detector 1 Size(ft)	6	6	20	6	6		28	28		28	28		
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)	6			14									
Detector 2 Size(ft)	6			6									
Detector 2 Type	Cl+Ex			Cl+Ex									
Detector 2 Channel													
Detector 2 Extend (s)	0.0			0.0									
Detector 3 Position(ft)	21			28									
Detector 3 Size(ft)	6			6									
Detector 3 Type	Cl+Ex			Cl+Ex									
Detector 3 Channel													
Detector 3 Extend (s)	0.0			0.0									
Turn Type	Prot	NA	Free	Prot	NA		pm+pt	NA		custom	NA		
Protected Phases	1	6		5	2		4	8		4	7		3
Permitted Phases			Free				8			7 8	8		
Detector Phase	1	6		5	2		4	8		4	7		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	3.0		1.0
Minimum Split (s)	9.5	20.1		10.2	20.1		9.8	9.5		9.8	9.8		26.1
Total Split (s)	20.0	35.0		20.0	35.0		11.0	18.0		11.0	9.0		7.0
Total Split (%)	20.0%	35.0%		20.0%	35.0%		11.0%	18.0%		11.0%	9.0%		7%
Maximum Green (s)	15.7	29.9		14.9	29.9		6.2	13.5		6.2	4.2		2.9
Yellow Time (s)	3.0	3.9		3.9	3.9		3.0	3.0		3.0	3.0		4.0
All-Red Time (s)	1.3	1.2		1.2	1.2		1.8	1.5		1.8	1.8		0.1

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
8: Scribner Avenue & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Total Lost Time (s)	4.3	5.1		5.1	5.1		4.8	4.5		4.8	4.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lag	Lead		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)	1.5	2.5		1.5	2.5		1.5	1.5		1.5	1.5		0.2
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													15.0
Pedestrian Calls (#/hr)													8
Act Effct Green (s)	9.7	36.6	100.0	13.4	43.0		14.3	7.8		28.8	22.0		
Actuated g/C Ratio	0.10	0.37	1.00	0.13	0.43		0.14	0.08		0.29	0.22		
v/c Ratio	0.59	0.39	0.43	0.75	0.65		0.47	0.62		0.41	0.68		
Control Delay	50.2	22.2	3.2	54.4	29.2		33.8	33.4		29.9	43.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	50.2	22.2	3.2	54.4	29.2		33.8	33.4		29.9	43.3		
LOS	D	C	A	D	C		C	C		C	D		
Approach Delay		14.7			33.0			33.6			40.3		
Approach LOS		B			C			C			D		
Queue Length 50th (ft)	45	138	104	117	210		39	34		32	139		
Queue Length 95th (ft)	m105	204	69	183	#348		79	87		66	#230		
Internal Link Dist (ft)		402			693			491			597		
Turn Bay Length (ft)	230			540			90			144			
Base Capacity (vph)	264	1251	1448	261	1449		198	303		188	383		
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0		
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0		
Storage Cap Reductn	0	0	0	0	0		0	0		0	0		
Reduced v/c Ratio	0.37	0.39	0.43	0.65	0.65		0.46	0.42		0.40	0.68		
Intersection Summary													
Area Type:	Other												
Cycle Length: 100													
Actuated Cycle Length: 100													
Offset: 86 (86%), Referenced to phase 2:WBT, Start of Green													
Natural Cycle: 100													

Lanes, Volumes, Timings

8: Scribner Avenue & US Route 1

09/16/2024

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 26.2

Intersection LOS: C

Intersection Capacity Utilization 64.1%

ICU Level of Service C

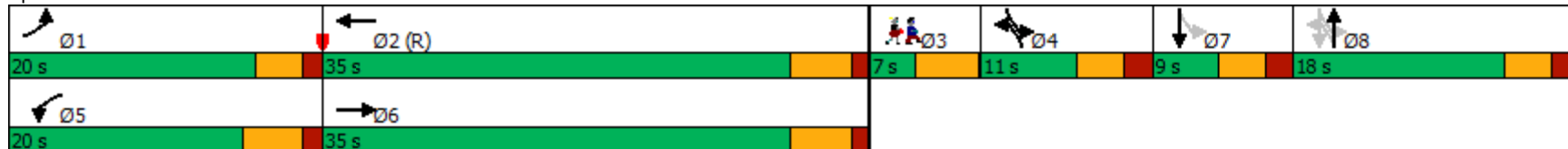
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

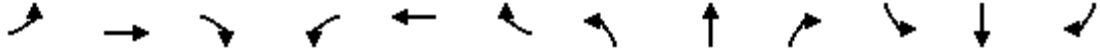
Splits and Phases: 8: Scribner Avenue & US Route 1



Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↖	↕↕		↖↖	↕			↖	↖
Traffic Volume (vph)	8	520	102	184	495	49	604	20	212	14	15	53
Future Volume (vph)	8	520	102	184	495	49	604	20	212	14	15	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	15	10	10	16
Storage Length (ft)	0		0	550		0	0		0	0		0
Storage Lanes	0		0	1		0	2		0	0		1
Taper Length (ft)	25			100			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00	1.00			0.99			1.00	
Frt		0.976			0.986			0.863				0.850
Flt Protected		0.999		0.950			0.950				0.977	
Satd. Flow (prot)	0	3324	0	1685	3366	0	3502	1576	0	0	1733	1830
Flt Permitted		0.945		0.323			0.950				0.977	
Satd. Flow (perm)	0	3144	0	572	3366	0	3502	1576	0	0	1732	1830
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			11			236				131
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		773			955			578			162	
Travel Time (s)		17.6			21.7			13.1			3.7	
Confl. Peds. (#/hr)	12		2	2		12			1	1		
Peak Hour Factor	0.93	0.93	0.93	0.91	0.91	0.91	0.90	0.90	0.90	0.85	0.85	0.85
Heavy Vehicles (%)	0%	2%	2%	0%	2%	2%	0%	0%	3%	0%	0%	0%
Adj. Flow (vph)	9	559	110	202	544	54	671	22	236	16	18	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	678	0	202	598	0	671	258	0	0	34	62
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)		10			10			40			40	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	0.88	1.09	1.09	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Number of Detectors	1	1		3	1		3	3		1	2	2
Detector Template	Left									Left		
Leading Detector (ft)	20	215		29	206		36	35		20	18	18
Trailing Detector (ft)	0	209		-5	200		0	-7		0	-2	-2
Detector 1 Position(ft)	0	209		-5	200		0	-7		0	-2	-2
Detector 1 Size(ft)	20	6		6	6		6	6		20	6	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)				9			15	12			12	12
Detector 2 Size(ft)				6			6	6			6	6
Detector 2 Type				Cl+Ex			Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)				0.0			0.0	0.0			0.0	0.0
Detector 3 Position(ft)				23			30	29				
Detector 3 Size(ft)				6			6	6				
Detector 3 Type				Cl+Ex			Cl+Ex	Cl+Ex				
Detector 3 Channel												
Detector 3 Extend (s)				0.0			0.0	0.0				
Turn Type	Perm	NA		pm+pt	NA		Split	NA		Split	NA	Perm
Protected Phases		2		1	2		4	4		8	8	
Permitted Phases	2			2								8
Detector Phase	2	2		1	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		5.0	15.0		9.0	9.0		5.0	5.0	5.0
Minimum Split (s)	21.7	21.7		9.0	21.7		21.3	21.3		9.0	9.0	9.0
Total Split (s)	38.0	38.0		17.0	38.0		35.0	35.0		10.0	10.0	10.0
Total Split (%)	38.0%	38.0%		17.0%	38.0%		35.0%	35.0%		10.0%	10.0%	10.0%
Maximum Green (s)	31.3	31.3		13.0	31.3		30.7	30.7		6.0	6.0	6.0
Yellow Time (s)	4.4	4.4		3.0	4.4		3.3	3.3		3.0	3.0	3.0
All-Red Time (s)	2.3	2.3		1.0	2.3		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

Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)		6.7		4.0	6.7		4.3	4.3			4.0	4.0
Lead/Lag	Lag	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.5	2.5		1.5	2.5		2.0	2.0		1.5	1.5	1.5
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	None
Walk Time (s)							16.0	16.0				
Flash Dont Walk (s)							1.0	1.0				
Pedestrian Calls (#/hr)							10	10				
Act Effct Green (s)		42.8		55.3	42.8		24.3	24.3			5.8	5.8
Actuated g/C Ratio		0.43		0.55	0.43		0.24	0.24			0.06	0.06
v/c Ratio		0.50		0.48	0.41		0.79	0.46			0.34	0.27
Control Delay		12.0		15.2	22.9		42.3	7.9			54.2	2.9
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay		12.0		15.2	22.9		42.3	7.9			54.2	2.9
LOS		B		B	C		D	A			D	A
Approach Delay		12.0			21.0			32.7			21.1	
Approach LOS		B			C			C			C	
Queue Length 50th (ft)		78		59	140		206	11			21	0
Queue Length 95th (ft)		82		113	219		248	68			50	0
Internal Link Dist (ft)		693			875			498			82	
Turn Bay Length (ft)				550								
Base Capacity (vph)		1358		474	1447		1075	647			107	236
Starvation Cap Reductn		0		0	0		0	0			0	0
Spillback Cap Reductn		0		0	0		0	0			0	0
Storage Cap Reductn		0		0	0		0	0			0	0
Reduced v/c Ratio		0.50		0.43	0.41		0.62	0.40			0.32	0.26
Intersection Summary												
Area Type:	Other											
Cycle Length:	100											
Actuated Cycle Length:	100											
Offset:	24 (24%), Referenced to phase 2:EBWB, Start of Yellow											
Natural Cycle:	65											
Control Type:	Actuated-Coordinated											

Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 22.9

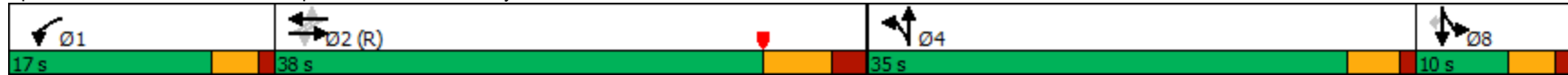
Intersection LOS: C

Intersection Capacity Utilization 71.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 9: I-95 Ramps/Global Gas Driveway & US Route 1



Lanes, Volumes, Timings
10: Taylor Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	63	514	141	58	531	0	96	3	89	62	59	60	
Future Volume (vph)	63	514	141	58	531	0	96	3	89	62	59	60	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	14	14	14	12	12	12	
Storage Length (ft)	155		0	140		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	100			70			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	0.99	1.00		1.00				0.99			0.99		
Frt		0.968						0.936			0.955		
Flt Protected	0.950			0.950				0.975			0.983		
Satd. Flow (prot)	1685	3277	0	1685	3342	0	0	1785	0	0	1727	0	
Flt Permitted	0.413			0.351				0.657			0.799		
Satd. Flow (perm)	728	3277	0	622	3342	0	0	1200	0	0	1403	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		45						52			28		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		955			301			227			157		
Travel Time (s)		21.7			6.8			5.2			3.6		
Confl. Peds. (#/hr)	10		2	2		10	5		3	3		5	
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.94	0.94	0.94	0.81	0.81	0.81	
Heavy Vehicles (%)	0%	3%	1%	0%	4%	0%	0%	0%	6%	0%	5%	3%	
Bus Blockages (#/hr)	0	0	0	0	2	0	0	0	0	0	0	0	
Adj. Flow (vph)	65	530	145	62	565	0	102	3	95	77	73	74	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	65	675	0	62	565	0	0	200	0	0	224	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)		12			12			0			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.04	1.09	1.05	1.04	0.92	0.92	0.92	1.00	1.00	1.00	

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
10: Taylor Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		3
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		9.0	9.0		9.0	9.0		1.0
Minimum Split (s)	10.0	20.7		9.5	20.7		14.8	14.8		14.8	14.8		26.0
Total Split (s)	10.0	31.0		10.0	31.0		23.0	23.0		23.0	23.0		16.0
Total Split (%)	12.5%	38.8%		12.5%	38.8%		28.8%	28.8%		28.8%	28.8%		20%
Maximum Green (s)	6.0	25.3		6.0	25.3		17.2	17.2		17.2	17.2		12.0
Yellow Time (s)	3.0	4.1		3.0	4.1		3.6	3.6		3.6	3.6		4.0
All-Red Time (s)	1.0	1.6		1.0	1.6		2.2	2.2		2.2	2.2		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	4.0	5.7		4.0	5.7			5.8			5.8		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?	Yes	Yes		Yes	Yes								
Vehicle Extension (s)	1.5	2.5		1.5	2.5		2.0	2.0		2.0	2.0		0.2

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
10: Taylor Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													15.0
Pedestrian Calls (#/hr)													10
Act Effct Green (s)	49.0	43.0		49.0	43.0			14.8			14.8		
Actuated g/C Ratio	0.61	0.54		0.61	0.54			0.18			0.18		
v/c Ratio	0.13	0.38		0.14	0.31			0.76			0.79		
Control Delay	8.5	13.4		4.4	7.9			41.2			47.6		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	8.5	13.4		4.4	7.9			41.2			47.6		
LOS	A	B		A	A			D			D		
Approach Delay		13.0			7.6			41.3			47.6		
Approach LOS		B			A			D			D		
Queue Length 50th (ft)	9	87		8	52			69			93		
Queue Length 95th (ft)	39	197		m22	80			#158			145		
Internal Link Dist (ft)		875			221			147			77		
Turn Bay Length (ft)	155			140									
Base Capacity (vph)	521	1781		464	1795			303			329		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.12	0.38		0.13	0.31			0.66			0.68		
Intersection Summary													
Area Type:	Other												
Cycle Length: 80													
Actuated Cycle Length: 80													
Offset: 33 (41%), Referenced to phase 2:WBTL, Start of Yellow													
Natural Cycle: 80													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.79													
Intersection Signal Delay: 18.6				Intersection LOS: B									
Intersection Capacity Utilization 53.1%				ICU Level of Service A									
Analysis Period (min) 15													

Lanes, Volumes, Timings

10: Taylor Ave & US Route 1

09/16/2024

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 10: Taylor Ave & US Route 1

 Ø1 10 s	 Ø2 (R) 31 s	 Ø3 16 s	 Ø4 23 s
 Ø5 10 s	 Ø6 31 s		

Lanes, Volumes, Timings
11: Cedar Street & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	69	504	92	87	501	10	178	28	47	21	23	60	
Future Volume (vph)	69	504	92	87	501	10	178	28	47	21	23	60	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	12	16	16	14	14	14	
Storage Length (ft)	0		0	260		0	250		0	0		0	
Storage Lanes	1		0	1		0	1		0	0		0	
Taper Length (ft)	25			90			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	1.00		1.00	1.00		0.99	0.99			0.98		
Frt		0.977			0.997			0.906			0.922		
Flt Protected	0.950			0.950			0.950				0.990		
Satd. Flow (prot)	1685	3268	0	1685	3365	0	1805	1837	0	0	1576	0	
Flt Permitted	0.413			0.362			0.656				0.925		
Satd. Flow (perm)	731	3268	0	640	3365	0	1232	1837	0	0	1471	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		27			2			51			81		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		98			473			371			196		
Travel Time (s)		2.2			10.8			8.4			4.5		
Confl. Peds. (#/hr)	3		5	5		3	14		5	5		14	
Peak Hour Factor	0.94	0.94	0.94	0.91	0.91	0.91	0.93	0.93	0.93	0.74	0.74	0.74	
Heavy Vehicles (%)	0%	3%	2%	0%	3%	0%	0%	0%	6%	0%	0%	2%	
Bus Blockages (#/hr)	0	5	0	0	2	0	0	3	0	0	0	0	
Parking (#/hr)											5		
Adj. Flow (vph)	73	536	98	96	551	11	191	30	51	28	31	81	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	73	634	0	96	562	0	191	81	0	0	140	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)		12			12			12			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													

Lanes, Volumes, Timings
11: Cedar Street & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Headway Factor	1.09	1.06	1.04	1.09	1.05	1.04	1.00	0.86	0.85	0.92	1.09	0.92	
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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		3
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		9.0	9.0		9.0	9.0		1.0
Minimum Split (s)	9.0	20.9		9.0	20.9		14.7	14.7		14.7	14.7		31.0
Total Split (s)	11.0	30.0		11.0	30.0		29.0	29.0		29.0	29.0		10.0
Total Split (%)	13.8%	37.5%		13.8%	37.5%		36.3%	36.3%		36.3%	36.3%		13%
Maximum Green (s)	7.0	24.1		7.0	24.1		23.3	23.3		23.3	23.3		6.0
Yellow Time (s)	3.0	4.1		3.0	4.1		3.6	3.6		3.6	3.6		4.0
All-Red Time (s)	1.0	1.8		1.0	1.8		2.1	2.1		2.1	2.1		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0		
Total Lost Time (s)	4.0	5.9		4.0	5.9		5.7	5.7			5.7		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?	Yes	Yes		Yes	Yes								

Lanes, Volumes, Timings
11: Cedar Street & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Vehicle Extension (s)	1.5	2.5		1.5	2.5		2.0	2.0		2.0	2.0		3.0
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													19.0
Pedestrian Calls (#/hr)													15
Act Effct Green (s)	46.2	39.6		46.7	39.8		16.2	16.2			16.2		
Actuated g/C Ratio	0.58	0.50		0.58	0.50		0.20	0.20			0.20		
v/c Ratio	0.15	0.39		0.21	0.34		0.77	0.20			0.39		
Control Delay	7.6	12.5		18.4	25.5		49.3	12.3			14.8		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0		
Total Delay	7.6	12.5		18.4	25.5		49.3	12.3			14.8		
LOS	A	B		B	C		D	B			B		
Approach Delay		12.0			24.4			38.3			14.8		
Approach LOS		B			C			D			B		
Queue Length 50th (ft)	9	58		34	135		91	12			25		
Queue Length 95th (ft)	m24	115		85	205		146	42			46		
Internal Link Dist (ft)		18			393			291			116		
Turn Bay Length (ft)				260			250						
Base Capacity (vph)	513	1630		471	1676		358	571			485		
Starvation Cap Reductn	0	0		0	0		0	0			0		
Spillback Cap Reductn	0	0		0	0		0	0			0		
Storage Cap Reductn	0	0		0	0		0	0			0		
Reduced v/c Ratio	0.14	0.39		0.20	0.34		0.53	0.14			0.29		
Intersection Summary													
Area Type:	Other												
Cycle Length: 80													
Actuated Cycle Length: 80													
Offset: 31 (39%), Referenced to phase 2:WBTL, Start of Yellow													
Natural Cycle: 90													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.77													
Intersection Signal Delay: 20.8				Intersection LOS: C									
Intersection Capacity Utilization 51.3%				ICU Level of Service A									

Lanes, Volumes, Timings

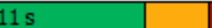
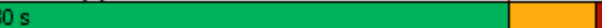
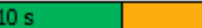
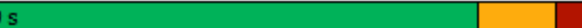
11: Cedar Street & US Route 1

09/16/2024

Analysis Period (min) 15

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

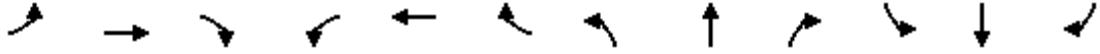
Splits and Phases: 11: Cedar Street & US Route 1

 Ø1  11 s	 Ø2 (R)  30 s	 Ø3  10 s	 Ø4  29 s
 Ø5  11 s	 Ø6  30 s		

Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

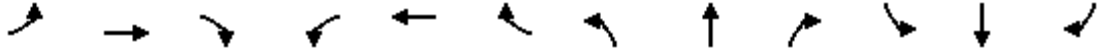
09/16/2024

														
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3	Ø7
Lane Configurations														
Traffic Volume (vph)	58	359	53	34	457	28	173	69	79	38	37	80		
Future Volume (vph)	58	359	53	34	457	28	173	69	79	38	37	80		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	10	11	11	10	11	11	11	13	13	10	10	12		
Storage Length (ft)	290		0	50		0	0		0	105		105		
Storage Lanes	1		0	1		0	1		0	1		1		
Taper Length (ft)	25			50			25			85				
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	0.99	1.00		1.00	1.00		1.00	0.99		1.00		0.98		
Frt		0.981			0.991			0.920				0.850		
Flt Protected	0.950			0.950			0.950			0.950				
Satd. Flow (prot)	1685	3252	0	1685	3228	0	1745	1754	0	1685	1722	1599		
Flt Permitted	0.340			0.474			0.732			0.660				
Satd. Flow (perm)	600	3252	0	838	3228	0	1342	1754	0	1165	1722	1570		
Right Turn on Red			Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)		16			6			77				303		
Link Speed (mph)		30			30			30			30			
Link Distance (ft)		429			489			381			333			
Travel Time (s)		9.8			11.1			8.7			7.6			
Confl. Peds. (#/hr)	6		3	3		6	3		4	4		3		
Confl. Bikes (#/hr)		1												
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.97	0.97	0.97	0.95	0.95	0.95		
Heavy Vehicles (%)	0%	3%	4%	0%	5%	7%	0%	0%	4%	0%	3%	1%		
Bus Blockages (#/hr)	0	8	0	0	8	0	0	0	0	0	0	0		
Adj. Flow (vph)	64	395	58	37	502	31	178	71	81	40	39	84		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	64	453	0	37	533	0	178	152	0	40	39	84		
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)		12			15			11			11			
Link Offset(ft)		0			0			0			0			
Crosswalk Width(ft)		16			16			16			16			
Two way Left Turn Lane														

Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

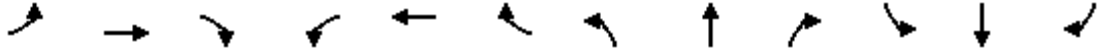
09/16/2024

													Ø3	Ø7
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Headway Factor	1.09	1.07	1.04	1.09	1.07	1.04	1.04	0.96	0.96	1.09	1.09	1.00		
Turning Speed (mph)	15		9	15		9	15		9	15		9		
Number of Detectors	1	2		1	2		1	2		1	2	1		
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right		
Leading Detector (ft)	20	100		20	100		20	100		20	100	20		
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0		
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0		
Detector 1 Size(ft)	20	6		20	6		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		
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)		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		D.P+P	NA		pm+pt	NA	Perm		
Protected Phases	1	6		5	2		4 7	7 8		4	8		3	7
Permitted Phases	6			2			8			8		8		
Detector Phase	1	6		5	2		7	8		4	8	8		
Switch Phase														
Minimum Initial (s)	5.0	15.0		5.0	15.0					5.0	10.0	10.0	1.0	5.0
Minimum Split (s)	9.5	21.2		9.5	21.2					12.0	15.5	15.5	25.0	10.7
Total Split (s)	12.0	14.0		12.0	14.0					12.0	17.0	17.0	10.0	15.0
Total Split (%)	15.0%	17.5%		15.0%	17.5%					15.0%	21.3%	21.3%	13%	19%
Maximum Green (s)	8.0	7.8		8.0	7.8					6.5	11.5	11.5	6.0	9.5
Yellow Time (s)	3.0	4.1		3.0	4.1					3.3	3.3	3.3	4.0	3.3
All-Red Time (s)	1.0	2.1		1.0	2.1					2.2	2.2	2.2	0.0	2.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	0.0		
Total Lost Time (s)	4.0	6.2		4.0	6.2					5.5	5.5	5.5		
Lead/Lag	Lead	Lag		Lead	Lag						Lag	Lag		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes						Yes	Yes		Yes

Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

														
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3	Ø7
Vehicle Extension (s)	1.5	2.5		1.5	2.5					2.0	2.0	2.0	3.0	2.0
Recall Mode	None	Min		None	C-Min					None	None	None	None	None
Walk Time (s)													7.0	
Flash Dont Walk (s)													14.0	
Pedestrian Calls (#/hr)													8	
Act Effct Green (s)	37.3	31.0		35.3	28.6		23.9	22.5		15.7	10.0	10.0		
Actuated g/C Ratio	0.47	0.39		0.44	0.36		0.30	0.28		0.20	0.12	0.12		
v/c Ratio	0.18	0.36		0.09	0.46		0.38	0.28		0.15	0.18	0.18		
Control Delay	20.4	24.7		20.1	34.8		19.2	13.3		17.5	33.7	0.9		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0		
Total Delay	20.4	24.7		20.1	34.8		19.2	13.3		17.5	33.7	0.9		
LOS	C	C		C	C		B	B		B	C	A		
Approach Delay		24.1			33.9			16.5			12.8			
Approach LOS		C			C			B			B			
Queue Length 50th (ft)	7	28		16	143		58	29		12	18	0		
Queue Length 95th (ft)	56	#190		m49	#293		94	71		28	46	0		
Internal Link Dist (ft)		349			409			301			253			
Turn Bay Length (ft)	290			50						105		105		
Base Capacity (vph)	396	1269		474	1156		526	579		282	247	485		
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0	0		
Reduced v/c Ratio	0.16	0.36		0.08	0.46		0.34	0.26		0.14	0.16	0.17		
Intersection Summary														
Area Type:	Other													
Cycle Length: 80														
Actuated Cycle Length: 80														
Offset: 31 (39%), Referenced to phase 2:WBTL, Start of Yellow														
Natural Cycle: 95														
Control Type: Actuated-Coordinated														
Maximum v/c Ratio: 0.46														
Intersection Signal Delay: 24.9								Intersection LOS: C						
Intersection Capacity Utilization 53.3%								ICU Level of Service A						

Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

 Ø1	 Ø2 (R)	 Ø3	 Ø4	 Ø7	 Ø8
12 s	14 s	10 s	12 s	15 s	17 s
 Ø5	 Ø6				
12 s	14 s				

Lanes, Volumes, Timings
13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	61	419	15	35	492	37	11	39	47	17	42	66	
Future Volume (vph)	61	419	15	35	492	37	11	39	47	17	42	66	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	14	14	14	14	14	14	
Storage Length (ft)	0		0	65		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	0			160			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	1.00		1.00	1.00			0.99			0.99		
Frt		0.995			0.989			0.935			0.929		
Flt Protected	0.950			0.950				0.994			0.993		
Satd. Flow (prot)	1685	3364	0	1685	3314	0	0	1797	0	0	1590	0	
Flt Permitted	0.384			0.474				0.896			0.941		
Satd. Flow (perm)	679	3364	0	840	3314	0	0	1619	0	0	1506	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		4			9			47			57		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		291			405			209			244		
Travel Time (s)		6.6			9.2			4.8			5.5		
Confl. Peds. (#/hr)	5		1	1		5	1		1	1		1	
Peak Hour Factor	0.89	0.89	0.89	0.85	0.85	0.85	0.87	0.87	0.87	0.78	0.78	0.78	
Heavy Vehicles (%)	0%	3%	7%	0%	4%	3%	0%	3%	6%	0%	2%	6%	
Parking (#/hr)											2		
Adj. Flow (vph)	69	471	17	41	579	44	13	45	54	22	54	85	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	69	488	0	41	623	0	0	112	0	0	161	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)		10			16			0			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	0.92	0.92	0.92	0.92	1.07	0.92	

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		3
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0		1.0
Minimum Split (s)	9.0	22.0		9.0	22.0		11.2	11.2		11.2	11.2		25.0
Total Split (s)	12.0	28.0		12.0	28.0		15.0	15.0		15.0	15.0		25.0
Total Split (%)	15.0%	35.0%		15.0%	35.0%		18.8%	18.8%		18.8%	18.8%		31%
Maximum Green (s)	8.0	21.0		8.0	21.0		8.8	8.8		8.8	8.8		21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0		4.0
All-Red Time (s)	1.0	3.0		1.0	3.0		2.2	2.2		2.2	2.2		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	4.0	7.0		4.0	7.0			6.2			6.2		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?	Yes	Yes		Yes	Yes								
Vehicle Extension (s)	1.5	2.5		1.5	2.5		2.0	2.0		2.0	2.0		0.2

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													14.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)	53.4	46.8		51.9	44.6			9.3			9.3		
Actuated g/C Ratio	0.67	0.58		0.65	0.56			0.12			0.12		
v/c Ratio	0.13	0.25		0.07	0.34			0.49			0.72		
Control Delay	4.2	7.2		7.7	13.6			27.7			41.0		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	4.2	7.2		7.7	13.6			27.7			41.0		
LOS	A	A		A	B			C			D		
Approach Delay		6.8			13.3			27.7			41.0		
Approach LOS		A			B			C			D		
Queue Length 50th (ft)	5	22		4	74			30			49		
Queue Length 95th (ft)	16	176		27	189			76			#106		
Internal Link Dist (ft)		211			325			129			164		
Turn Bay Length (ft)				65									
Base Capacity (vph)	563	1967		651	1852			245			240		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.12	0.25		0.06	0.34			0.46			0.67		
Intersection Summary													
Area Type:	Other												
Cycle Length: 80													
Actuated Cycle Length: 80													
Offset: 48 (60%), Referenced to phase 2:WBTL, Start of Green													
Natural Cycle: 70													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.72													
Intersection Signal Delay: 14.9				Intersection LOS: B									
Intersection Capacity Utilization 43.5%				ICU Level of Service A									
Analysis Period (min) 15													

Lanes, Volumes, Timings

13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: Stuart Ave & US Route 1/Van Buren Ave

 Ø1 12 s	 Ø2 (R) 28 s	 Ø3 25 s	 Ø4 15 s
 Ø5 12 s	 Ø6 28 s		

Lanes, Volumes, Timings
14: Van Buren Ave & Connecticut Ave

09/16/2024

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations	 		 			 	
Traffic Volume (vph)	150	80	307	141	71	358	
Future Volume (vph)	150	80	307	141	71	358	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	12	10	10	10	10	
Lane Util. Factor	0.97	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor			0.99			1.00	
Frt		0.850	0.953				
Flt Protected	0.950					0.992	
Satd. Flow (prot)	3385	1538	3091	0	0	3235	
Flt Permitted	0.950					0.804	
Satd. Flow (perm)	3385	1538	3091	0	0	2621	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		86	102				
Link Speed (mph)	30		30			30	
Link Distance (ft)	369		768			690	
Travel Time (s)	8.4		17.5			15.7	
Confl. Peds. (#/hr)				4	4		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.85	0.85	
Heavy Vehicles (%)	0%	5%	3%	3%	0%	4%	
Adj. Flow (vph)	161	86	330	152	84	421	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	161	86	482	0	0	505	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	22		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.04	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9		9	15		
Number of Detectors	1	1	2		1	2	
Detector Template	Left	Right	Thru		Left	Thru	
Leading Detector (ft)	20	20	100		20	100	

Existing MD Balanced 10:51 pm 08/13/2024 Existing MD Balanced

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Lanes, Volumes, Timings
14: Van Buren Ave & Connecticut Ave

09/16/2024

	     						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	20	6		20	6	
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	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	5	6		5	2	3
Permitted Phases		8			2		
Detector Phase	8	5	6		5	2	
Switch Phase							
Minimum Initial (s)	10.0	5.0	15.0		5.0	15.0	5.0
Minimum Split (s)	14.6	8.7	20.5		8.7	20.5	25.0
Total Split (s)	23.0	12.0	28.0		12.0	28.0	12.0
Total Split (%)	30.7%	16.0%	37.3%		16.0%	37.3%	16%
Maximum Green (s)	18.4	8.3	22.5		8.3	22.5	8.0
Yellow Time (s)	3.6	3.6	3.6		3.6	3.6	4.0
All-Red Time (s)	1.0	0.1	1.9		0.1	1.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	
Total Lost Time (s)	4.6	3.7	5.5			5.5	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	Min		None	C-Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							14.0
Pedestrian Calls (#/hr)							5

Lanes, Volumes, Timings 14: Van Buren Ave & Connecticut Ave

09/16/2024

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Act Effct Green (s)	10.3	20.4	44.0			51.4	
Actuated g/C Ratio	0.14	0.27	0.59			0.69	
v/c Ratio	0.35	0.18	0.26			0.28	
Control Delay	31.6	6.3	8.0			6.2	
Queue Delay	0.0	0.0	0.0			0.0	
Total Delay	31.6	6.3	8.0			6.2	
LOS	C	A	A			A	
Approach Delay	22.8		8.0			6.2	
Approach LOS	C		A			A	
Queue Length 50th (ft)	35	0	36			23	
Queue Length 95th (ft)	61	30	102			96	
Internal Link Dist (ft)	289		688			610	
Turn Bay Length (ft)							
Base Capacity (vph)	830	534	1857			1821	
Starvation Cap Reductn	0	0	0			0	
Spillback Cap Reductn	0	0	0			0	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.19	0.16	0.26			0.28	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.35

Intersection Signal Delay: 10.2

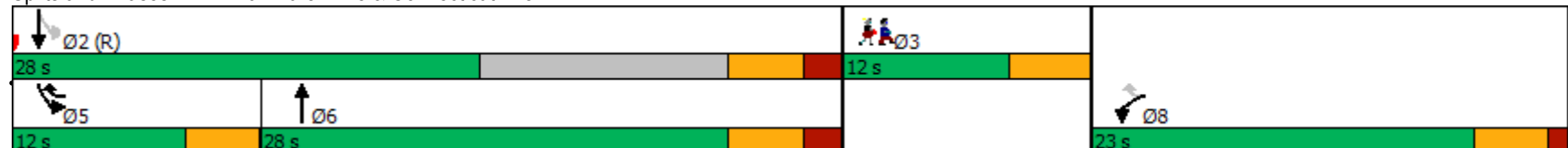
Intersection LOS: B

Intersection Capacity Utilization 47.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 14: Van Buren Ave & Connecticut Ave



Lanes, Volumes, Timings
15: Van Buren Ave & Maple St

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	116	78	77	43	62	39	85	262	39	25	290	99	
Future Volume (vph)	116	78	77	43	62	39	85	262	39	25	290	99	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	16	16	10	14	14	10	10	10	10	10	10	
Storage Length (ft)	0		0	311		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	130			100			25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.99	0.99		0.99	0.99			1.00			0.99		
Frt		0.925			0.942			0.985			0.964		
Flt Protected	0.950			0.950				0.989			0.997		
Satd. Flow (prot)	1805	1921	0	1685	1800	0	0	3143	0	0	3130	0	
Flt Permitted	0.528			0.643				0.757			0.912		
Satd. Flow (perm)	993	1921	0	1133	1800	0	0	2405	0	0	2863	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		59			37			18			53		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		109			722			690			1249		
Travel Time (s)		2.5			16.4			15.7			28.4		
Confl. Peds. (#/hr)	11		7	7		11	3					3	
Peak Hour Factor	0.86	0.86	0.86	0.77	0.77	0.77	0.88	0.88	0.88	0.86	0.86	0.86	
Heavy Vehicles (%)	0%	4%	1%	0%	6%	3%	0%	5%	0%	0%	3%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	5	0	0	0	0	
Adj. Flow (vph)	135	91	90	56	81	51	97	298	44	29	337	115	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	135	181	0	56	132	0	0	439	0	0	481	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)		12			12			0			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.00	0.85	0.85	1.09	0.92	0.92	1.09	1.11	1.09	1.09	1.09	1.09	

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Lanes, Volumes, Timings
15: Van Buren Ave & Maple St

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
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	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA		
Protected Phases	7	4		3	8		5	2			6		9
Permitted Phases	4			8			2			6			
Detector Phase	7	4		3	8		5	2		6	6		
Switch Phase													
Minimum Initial (s)	4.0	7.0		4.0	7.0		4.0	10.0		10.0	10.0		1.0
Minimum Split (s)	8.9	11.5		8.9	11.9		7.7	15.1		15.2	15.2		25.0
Total Split (s)	10.0	19.0		10.0	19.0		10.0	28.0		24.0	24.0		12.0
Total Split (%)	13.3%	25.3%		13.3%	25.3%		13.3%	37.3%		32.0%	32.0%		16%
Maximum Green (s)	5.1	14.5		5.1	14.1		6.3	22.9		18.8	18.8		8.0
Yellow Time (s)	3.4	3.4		3.4	3.4		3.6	3.6		3.6	3.6		4.0
All-Red Time (s)	1.5	1.1		1.5	1.5		0.1	1.5		1.6	1.6		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	4.9	4.5		4.9	4.9			5.1			5.2		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0

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Lanes, Volumes, Timings
15: Van Buren Ave & Maple St

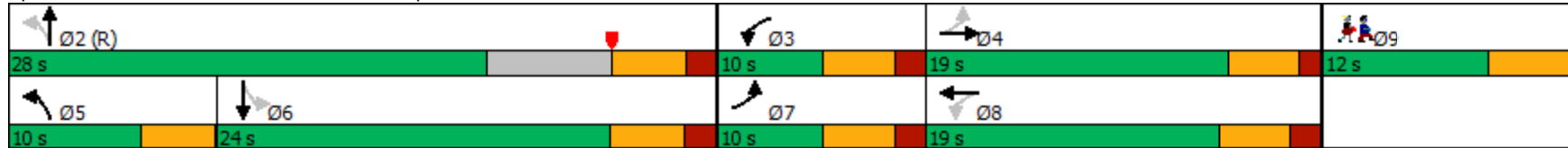
09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Recall Mode	None	None		None	None		None	C-Min		Min	Min		None
Walk Time (s)													7.0
Flash Dont Walk (s)													14.0
Pedestrian Calls (#/hr)													15
Act Effct Green (s)	18.5	13.9		15.1	9.8			42.1			42.0		
Actuated g/C Ratio	0.25	0.19		0.20	0.13			0.56			0.56		
v/c Ratio	0.41	0.45		0.20	0.49			0.32			0.30		
Control Delay	24.1	21.7		20.0	27.7			7.3			9.4		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	24.1	21.7		20.0	27.7			7.3			9.4		
LOS	C	C		C	C			A			A		
Approach Delay		22.7			25.4			7.3			9.4		
Approach LOS		C			C			A			A		
Queue Length 50th (ft)	46	51		18	42			31			24		
Queue Length 95th (ft)	82	99		36	70			52			86		
Internal Link Dist (ft)		29			642			610			1169		
Turn Bay Length (ft)				311									
Base Capacity (vph)	332	455		275	368			1357			1626		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.41	0.40		0.20	0.36			0.32			0.30		
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 36 (48%), Referenced to phase 2:NBTL, Start of Yellow													
Natural Cycle: 75													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.49													
Intersection Signal Delay: 13.8				Intersection LOS: B									
Intersection Capacity Utilization 52.2%				ICU Level of Service A									
Analysis Period (min) 15													

Lanes, Volumes, Timings 15: Van Buren Ave & Maple St

09/16/2024

Splits and Phases: 15: Van Buren Ave & Maple St



Lanes, Volumes, Timings
16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	38	11	161	33	135	5	326	42	144	243	32
Future Volume (vph)	53	38	11	161	33	135	5	326	42	144	243	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	10	12	12	10	11	11	10	10	12
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			0.98		0.99				1.00	
Frt		0.985			0.879			0.983			0.983	
Flt Protected		0.975		0.950			0.950			0.950		
Satd. Flow (prot)	0	2048	0	1685	1628	0	1685	1744	0	1685	1638	0
Flt Permitted		0.727		0.598			0.576			0.267		
Satd. Flow (perm)	0	1526	0	1060	1628	0	1013	1744	0	473	1638	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			173			9			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		254			189			680			409	
Travel Time (s)		5.8			4.3			15.5			9.3	
Confl. Peds. (#/hr)	1					1	8					8
Peak Hour Factor	0.75	0.75	0.75	0.78	0.78	0.78	0.81	0.81	0.81	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	9%	0%	0%	1%	0%	4%	0%	0%	5%	6%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	2	0
Adj. Flow (vph)	71	51	15	206	42	173	6	402	52	158	267	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	137	0	206	215	0	6	454	0	158	302	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			50			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	1.09	1.00	1.00	1.09	1.04	1.04	1.09	1.10	1.00
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	

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Lanes, Volumes, Timings
16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	22.5	22.5		12.0	22.5		10.0	22.5		9.5	25.2	
Total Split (s)	23.0	23.0		12.0	23.0		10.0	30.0		10.0	30.0	
Total Split (%)	30.7%	30.7%		16.0%	30.7%		13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	18.3	18.3		8.7	18.3		4.7	24.8		4.7	24.8	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		0.1	1.5		1.6	1.5		1.6	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.7		3.3	4.7		5.3	5.2		5.3	5.2	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	Min	
Walk Time (s)											7.0	
Flash Dont Walk (s)											13.0	

Lanes, Volumes, Timings
16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)											8	
Act Effct Green (s)		12.3		23.9	22.5		35.0	29.4		41.6	40.4	
Actuated g/C Ratio		0.16		0.32	0.30		0.47	0.39		0.55	0.54	
v/c Ratio		0.54		0.49	0.35		0.01	0.66		0.41	0.34	
Control Delay		34.5		22.7	6.5		17.0	30.7		14.5	16.0	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		34.5		22.7	6.5		17.0	30.7		14.5	16.0	
LOS		C		C	A		B	C		B	B	
Approach Delay		34.5			14.4			30.5			15.5	
Approach LOS		C			B			C			B	
Queue Length 50th (ft)		56		70	13		0	176		51	103	
Queue Length 95th (ft)		82		95	38		10	250		m71	217	
Internal Link Dist (ft)		174			109			600			329	
Turn Bay Length (ft)												
Base Capacity (vph)		378		419	760		524	689		390	885	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.36		0.49	0.28		0.01	0.66		0.41	0.34	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 70 (93%), Referenced to phase 2:NBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 21.6

Intersection LOS: C

Intersection Capacity Utilization 62.7%

ICU Level of Service B

Analysis Period (min) 15

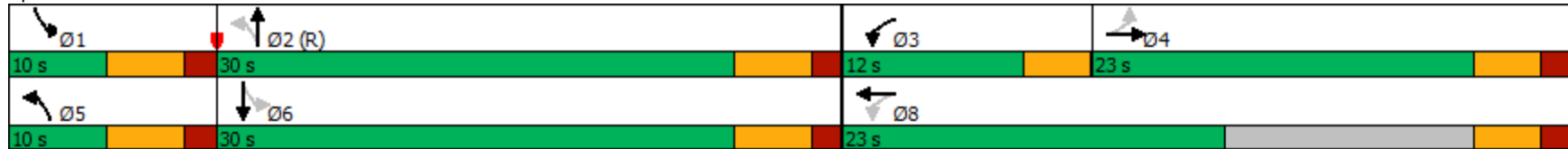
m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings

16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

Splits and Phases: 16: Van Buren Ave & Grandview Ave/US 7



Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	7	84	33	269	115	54	7	133	374	43	104	3	
Future Volume (vph)	7	84	33	269	115	54	7	133	374	43	104	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10	
Storage Length (ft)	0		60	0		0	120		115	80		0	
Storage Lanes	0		1	1		0	1		1	1		0	
Taper Length (ft)	25			25			80			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	0.98	1.00	0.99		1.00		0.99	1.00	1.00		
Frt			0.850		0.952				0.850		0.996		
Flt Protected		0.996		0.950			0.950			0.950			
Satd. Flow (prot)	0	1750	1507	1685	1644	0	1685	1756	1438	1685	1715	0	
Flt Permitted		0.000		0.685			0.671			0.663			
Satd. Flow (perm)	0	0	1481	1209	1644	0	1187	1756	1418	1173	1715	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			154		35				416		2		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		350			460			409			259		
Travel Time (s)		8.0			10.5			9.3			5.9		
Confl. Peds. (#/hr)	1		5	5		1	1		2	2		1	
Peak Hour Factor	0.82	0.82	0.82	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	
Heavy Vehicles (%)	0%	1%	0%	0%	1%	4%	0%	1%	4%	0%	3%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0	
Adj. Flow (vph)	9	102	40	299	128	60	8	148	416	54	130	4	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	111	40	299	188	0	8	148	416	54	134	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			10			10			10		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.10	1.09	1.09	1.09	

Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2	1	1	2		
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru		
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100		
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	20	6		20	6	20	20	6		
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	custom	pm+pt	NA		Perm	NA	pm+ov	Perm	NA		
Protected Phases	7	4		8	4			2	8		6		3
Permitted Phases	4	7	4 7	4	8		2		2	6			
Detector Phase	7	4	4	8	4		2	2	8	6	6		
Switch Phase													
Minimum Initial (s)	5.0	7.0		7.0	7.0		15.0	15.0	7.0	15.0	15.0		1.0
Minimum Split (s)	10.7	12.7		12.0	12.7		19.6	19.6	12.0	19.6	19.6		26.0
Total Split (s)	12.0	13.0		19.0	13.0		19.0	19.0	19.0	19.0	19.0		12.0
Total Split (%)	16.0%	17.3%		25.3%	17.3%		25.3%	25.3%	25.3%	25.3%	25.3%		16%
Maximum Green (s)	6.3	7.3		14.0	7.3		14.4	14.4	14.0	14.4	14.4		8.0
Yellow Time (s)	3.7	3.7		3.5	3.7		3.6	3.6	3.5	3.6	3.6		4.0
All-Red Time (s)	2.0	2.0		1.5	2.0		1.0	1.0	1.5	1.0	1.0		0.0
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.7		5.0	5.7		4.6	4.6	5.0	4.6	4.6		
Lead/Lag		Lag		Lead	Lag				Lead				
Lead-Lag Optimize?		Yes		Yes	Yes				Yes				
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0

Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Recall Mode	None	None		None	None		C-Min	C-Min	None	Min	Min		None
Walk Time (s)													7.0
Flash Dont Walk (s)													15.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)		8.9	8.9	24.3	28.6		33.7	33.7	48.0	33.7	33.7		
Actuated g/C Ratio		0.12	0.12	0.32	0.38		0.45	0.45	0.64	0.45	0.45		
v/c Ratio		0.53	0.13	0.62	0.29		0.02	0.19	0.39	0.10	0.17		
Control Delay		42.4	0.8	23.6	14.0		21.4	18.4	2.6	15.3	15.0		
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Delay		42.4	0.8	23.6	14.0		21.4	18.4	2.6	15.3	15.0		
LOS		D	A	C	B		C	B	A	B	B		
Approach Delay		31.4			19.9			7.0			15.1		
Approach LOS		C			B			A			B		
Queue Length 50th (ft)		48	0	92	44		2	40	0	14	36		
Queue Length 95th (ft)		#102	0	#179	99		m7	m90	93	36	71		
Internal Link Dist (ft)		270			380			329			179		
Turn Bay Length (ft)			60				120		115	80			
Base Capacity (vph)		210	313	500	650		533	789	1070	526	771		
Starvation Cap Reductn		0	0	0	0		0	0	1	0	0		
Spillback Cap Reductn		0	0	0	0		0	0	0	0	0		
Storage Cap Reductn		0	0	0	0		0	0	0	0	0		
Reduced v/c Ratio		0.53	0.13	0.60	0.29		0.02	0.19	0.39	0.10	0.17		
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 74 (99%), Referenced to phase 2:NBTL, Start of Green													
Natural Cycle: 85													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.62													
Intersection Signal Delay: 15.2				Intersection LOS: B									
Intersection Capacity Utilization 59.0%				ICU Level of Service B									
Analysis Period (min) 15													

Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

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

Queue shown is maximum after two cycles.

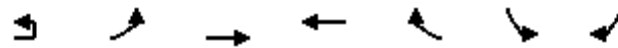
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

 Ø2 (L)	 Ø3	 Ø8	 Ø4	 Ø7
19 s	12 s	19 s	13 s	12 s
 Ø6				
19 s				

Lanes, Volumes, Timings
1: US Route 1 & W Norwalk Rd

09/16/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑	↑↑		↑↑	
Traffic Volume (vph)	1	118	654	781	102	25	103
Future Volume (vph)	1	118	654	781	102	25	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor							
Frt				0.983		0.891	
Flt Protected			0.992			0.990	
Satd. Flow (prot)	0	0	3581	3523	0	1650	0
Flt Permitted			0.992			0.990	
Satd. Flow (perm)	0	0	3581	3523	0	1650	0
Link Speed (mph)			30	30		30	
Link Distance (ft)			588	464		319	
Travel Time (s)			13.4	10.5		7.3	
Confl. Peds. (#/hr)							3
Peak Hour Factor	0.89	0.89	0.89	0.94	0.94	0.86	0.86
Heavy Vehicles (%)	0%	0%	0%	0%	1%	4%	1%
Bus Blockages (#/hr)	0	0	0	3	0	0	0
Adj. Flow (vph)	1	133	735	831	109	29	120
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	869	940	0	149	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			10	10		12	
Link Offset(ft)			0	0		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.01	1.00	1.00	1.00
Turning Speed (mph)	9	15			9	15	9
Sign Control			Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Lanes, Volumes, Timings
1: US Route 1 & W Norwalk Rd

09/16/2024

Intersection Capacity Utilization 64.9%
Analysis Period (min) 15

ICU Level of Service C

Lanes, Volumes, Timings
2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	6	684	0	0	719	2	108	2	550	11	0	52	
Future Volume (vph)	6	684	0	0	719	2	108	2	550	11	0	52	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	11	11	11	12	12	14	
Storage Length (ft)	105		0	0		0	430		450	75		0	
Storage Lanes	1		0	0		0	1		1	1		1	
Taper Length (ft)	90			25			100			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	
Frt								0.851	0.850			0.850	
Flt Protected	0.950						0.950			0.950			
Satd. Flow (prot)	1685	3434	0	0	3225	0	1711	1470	1468	1805	0	1723	
Flt Permitted	0.950						0.950			0.950			
Satd. Flow (perm)	1685	3434	0	0	3225	0	1711	1470	1468	1805	0	1723	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)								313	312			172	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		464			619			634			228		
Travel Time (s)		10.5			14.1			14.4			5.2		
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.79	0.79	0.79	
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%	2%	0%	1%	0%	0%	0%	
Bus Blockages (#/hr)	0	3	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)					3								
Adj. Flow (vph)	6	713	0	0	782	2	123	2	625	14	0	66	
Shared Lane Traffic (%)									50%				
Lane Group Flow (vph)	6	713	0	0	784	0	123	315	312	14	0	66	
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)		12			12			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.05	1.04	1.09	1.13	1.04	1.04	1.04	1.04	1.00	1.00	0.92	
Turning Speed (mph)	15		9	15		9	15		9	15		9	

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
Page 3

Lanes, Volumes, Timings
2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Number of Detectors	1	2			2		1	2	1	1		1	
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right	
Leading Detector (ft)	20	100			100		20	100	20	20		20	
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			6		20	6	20	20		20	
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					
Detector 2 Size(ft)		6			6			6					
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex					
Detector 2 Channel													
Detector 2 Extend (s)		0.0			0.0			0.0					
Turn Type	Prot	NA			NA		Prot	NA	Perm	Prot		pm+ov	
Protected Phases	1	1 2			2		4	3 4		5		1	3
Permitted Phases									3 4			5	
Detector Phase	1	2			2		4	4	4	5		1	
Switch Phase													
Minimum Initial (s)	5.0				15.0		9.0			7.0		5.0	1.0
Minimum Split (s)	11.9				22.5		13.1			11.0		11.9	23.0
Total Split (s)	10.0				35.9		5.1			14.0		10.0	10.0
Total Split (%)	13.3%				47.9%		6.8%			18.7%		13.3%	13%
Maximum Green (s)	3.6				29.2		1.0			10.0		3.6	6.0
Yellow Time (s)	3.0				4.1		3.0			3.0		3.0	4.0
All-Red Time (s)	3.4				2.6		1.1			1.0		3.4	0.0
Lost Time Adjust (s)	0.0				0.0		0.0			0.0		0.0	
Total Lost Time (s)	6.4				6.7		4.1			4.0		6.4	
Lead/Lag	Lead				Lag		Lag					Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes					Yes	Yes
Vehicle Extension (s)	2.0				2.5		2.0			2.0		2.0	3.0
Recall Mode	None				C-Min		None			None		None	None

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report

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Lanes, Volumes, Timings
2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Walk Time (s)													7.0
Flash Dont Walk (s)													12.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)	5.2	46.4			36.8		13.9	16.0	16.0	7.0		7.4	
Actuated g/C Ratio	0.07	0.62			0.49		0.19	0.21	0.21	0.09		0.10	
v/c Ratio	0.05	0.34			0.49		0.39	0.56	0.56	0.08		0.20	
Control Delay	33.5	7.4			14.8		41.3	8.5	8.4	32.5		1.4	
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0	
Total Delay	33.5	7.4			14.8		41.3	8.5	8.4	32.5		1.4	
LOS	C	A			B		D	A	A	C		A	
Approach Delay		7.6			14.8			13.8			6.9		
Approach LOS		A			B			B			A		
Queue Length 50th (ft)	3	63			117		50	1	0	6		0	
Queue Length 95th (ft)	14	121			204		#205	67	65	20		0	
Internal Link Dist (ft)		384			539			554			148		
Turn Bay Length (ft)	105						430		450	75			
Base Capacity (vph)	116	2125			1584		316	559	558	240		324	
Starvation Cap Reductn	0	0			0		0	0	0	0		0	
Spillback Cap Reductn	0	0			0		0	0	0	0		0	
Storage Cap Reductn	0	0			0		0	0	0	0		0	
Reduced v/c Ratio	0.05	0.34			0.49		0.39	0.56	0.56	0.06		0.20	
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow													
Natural Cycle: 85													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.56													
Intersection Signal Delay: 12.0						Intersection LOS: B							
Intersection Capacity Utilization 56.9%						ICU Level of Service B							
Analysis Period (min) 15													
# 95th percentile volume exceeds capacity, queue may be longer.													

Lanes, Volumes, Timings

2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

Queue shown is maximum after two cycles.

Splits and Phases: 2: I-95 NB Exit 13 Off Ramp & US Route 1



Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	231	843	168	50	438	120	91	90	83	68	101	158	
Future Volume (vph)	231	843	168	50	438	120	91	90	83	68	101	158	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	12	11	11	10	10	10	
Storage Length (ft)	0		0	210		75	163		0	135		135	
Storage Lanes	1		0	1		1	1		0	1		1	
Taper Length (ft)	25			50			50			50			
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	
Ped Bike Factor	1.00					0.98	1.00						0.99
Frt		0.975				0.850		0.928					0.850
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1685	3374	0	1685	3455	1473	1805	1687	0	1652	1721	1478	
Flt Permitted	0.950			0.950			0.689			0.468			
Satd. Flow (perm)	1683	3374	0	1685	3455	1440	1308	1687	0	814	1721	1458	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		30				239		54				218	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		601			420			331			299		
Travel Time (s)		13.7			9.5			7.5			6.8		
Confl. Peds. (#/hr)	1					1	1						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.74	0.74	0.74	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	1%	0%	0%	1%	6%	0%	2%	0%	2%	1%	2%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	5	0	
Adj. Flow (vph)	243	887	177	53	461	126	123	122	112	72	106	166	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	243	1064	0	53	461	126	123	234	0	72	106	166	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.04	1.04	1.09	1.12	1.09	

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
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	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm	
Protected Phases	1	6		5	2			4			4		3
Permitted Phases						2	4			4		4	
Detector Phase	1	6		5	2	2	4	4		4	4	4	
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	8.0	8.0		8.0	8.0	8.0	1.0
Minimum Split (s)	10.4	22.5		10.4	22.5	22.5	14.7	14.7		14.7	14.7	14.7	29.0
Total Split (s)	23.0	30.0		15.0	22.0	22.0	25.0	25.0		25.0	25.0	25.0	10.0
Total Split (%)	28.8%	37.5%		18.8%	27.5%	27.5%	31.3%	31.3%		31.3%	31.3%	31.3%	13%
Maximum Green (s)	18.1	24.8		10.1	16.8	16.8	18.3	18.3		18.3	18.3	18.3	6.0
Yellow Time (s)	3.0	4.1		3.0	4.1	4.1	4.0	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.9	1.1		1.9	1.1	1.1	2.7	2.7		2.7	2.7	2.7	0.0
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)	4.9	5.2		4.9	5.2	5.2	6.7	6.7		6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0		2.0	2.0	2.0	3.0

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Recall Mode	None	Max		None	C-Max	C-Max	None	None		None	None	None	None
Walk Time (s)													7.0
Flash Dont Walk (s)													18.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)	15.0	44.6		7.1	32.6	32.6	13.6	13.6		13.6	13.6	13.6	
Actuated g/C Ratio	0.19	0.56		0.09	0.41	0.41	0.17	0.17		0.17	0.17	0.17	
v/c Ratio	0.77	0.56		0.36	0.33	0.17	0.55	0.70		0.52	0.36	0.39	
Control Delay	41.9	11.6		34.0	33.4	8.8	38.9	35.0		42.5	31.5	4.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	41.9	11.6		34.0	33.4	8.8	38.9	35.0		42.5	31.5	4.4	
LOS	D	B		C	C	A	D	D		D	C	A	
Approach Delay		17.2			28.6			36.4			20.7		
Approach LOS		B			C			D			C		
Queue Length 50th (ft)	78	206		26	119	7	57	85		33	47	0	
Queue Length 95th (ft)	m142	#415		61	180	38	81	112		71	87	24	
Internal Link Dist (ft)		521			340			251			219		
Turn Bay Length (ft)				210		75	163			135		135	
Base Capacity (vph)	381	1892		212	1407	728	299	427		186	393	501	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0	
Reduced v/c Ratio	0.64	0.56		0.25	0.33	0.17	0.41	0.55		0.39	0.27	0.33	
Intersection Summary													
Area Type:	Other												
Cycle Length: 80													
Actuated Cycle Length: 80													
Offset: 24 (30%), Referenced to phase 2:WBT, Start of Yellow													
Natural Cycle: 90													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.77													
Intersection Signal Delay: 23.0				Intersection LOS: C									
Intersection Capacity Utilization 68.9%				ICU Level of Service C									
Analysis Period (min) 15													

Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

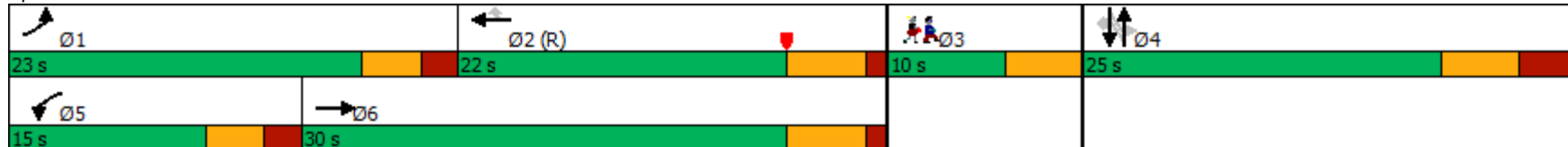
09/16/2024

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Richards Ave & Connecticut Avenue/US Route 1



Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	1004	14	14	635	114	10	1	29	138	2	37
Future Volume (vph)	37	1004	14	14	635	114	10	1	29	138	2	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	12	12	12
Storage Length (ft)	0		0	50		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	0		1
Taper Length (ft)	60			80			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	0.99	1.00		0.99	1.00		1.00					0.98
Frt		0.998			0.977			0.854				0.850
Flt Protected	0.950			0.950			0.950				0.953	
Satd. Flow (prot)	1685	3447	0	1685	3368	0	1805	1623	0	0	1811	1615
Flt Permitted	0.950			0.950			0.605				0.698	
Satd. Flow (perm)	1674	3447	0	1672	3368	0	1146	1623	0	0	1326	1590
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			37			41				42
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		293			385			261			246	
Travel Time (s)		6.7			8.8			5.9			5.6	
Confl. Peds. (#/hr)	5		8	8		5	3					3
Peak Hour Factor	0.99	0.99	0.99	0.92	0.92	0.92	0.71	0.71	0.71	0.89	0.89	0.89
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	37	1014	14	15	690	124	14	1	41	155	2	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	1028	0	15	814	0	14	42	0	0	157	42
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)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template	Left			Left			Left			Left		Right
Leading Detector (ft)	20	181		20	206		20	6		20	6	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		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
Detector 1 Channel		2,3		6	7,8			5			9	
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)		175			200							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel		40,41			43,44							
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	1	6		5	2			4			4	1
Permitted Phases							4			4		4
Detector Phase	1	6		5	2		4	4		4	4	1
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		9.0	9.0		9.0	9.0	4.0
Minimum Split (s)	8.6	20.2		8.6	20.2		35.5	35.5		35.5	35.5	8.6
Total Split (s)	15.0	46.0		15.0	46.0		19.0	19.0		19.0	19.0	15.0
Total Split (%)	18.8%	57.5%		18.8%	57.5%		23.8%	23.8%		23.8%	23.8%	18.8%
Maximum Green (s)	10.4	40.8		10.4	40.8		13.5	13.5		13.5	13.5	10.4
Yellow Time (s)	3.0	4.1		3.0	4.1		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.6	1.1		1.6	1.1		2.5	2.5		2.5	2.5	1.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.6	5.2		4.6	5.2		5.5	5.5			5.5	4.6
Lead/Lag	Lead	Lag		Lead	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	C-Max		None	None		None	None	None

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)							18.0	18.0		18.0	18.0	
Flash Dont Walk (s)							1.0	1.0		1.0	1.0	
Pedestrian Calls (#/hr)							8	8		8	8	
Act Effct Green (s)	6.3	54.8		5.3	48.0		12.2	12.2			12.2	19.5
Actuated g/C Ratio	0.08	0.68		0.07	0.60		0.15	0.15			0.15	0.24
v/c Ratio	0.28	0.44		0.13	0.40		0.08	0.15			0.78	0.10
Control Delay	49.6	4.0		37.3	9.7		29.4	11.5			58.7	6.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	49.6	4.0		37.3	9.7		29.4	11.5			58.7	6.9
LOS	D	A		D	A		C	B			E	A
Approach Delay		5.6			10.2			16.0			47.7	
Approach LOS		A			B			B			D	
Queue Length 50th (ft)	18	17		7	107		6	0			75	0
Queue Length 95th (ft)	m39	73		25	160		17	17			#160	20
Internal Link Dist (ft)		213			305			181			166	
Turn Bay Length (ft)				50			150					
Base Capacity (vph)	219	2361		219	2033		193	307			223	501
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.17	0.44		0.07	0.40		0.07	0.14			0.70	0.08
Intersection Summary												
Area Type:	Other											
Cycle Length: 80												
Actuated Cycle Length: 80												
Offset: 52 (65%), Referenced to phase 2:WBT, Start of Yellow												
Natural Cycle: 75												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.78												
Intersection Signal Delay: 11.5						Intersection LOS: B						
Intersection Capacity Utilization 54.2%						ICU Level of Service A						
Analysis Period (min) 15												
# 95th percentile volume exceeds capacity, queue may be longer.												

Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

Queue shown is maximum after two cycles.

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

Splits and Phases: 4: Liquidators Driveway/Walmart Driveway & US Route 1



Lanes, Volumes, Timings
5: Keeler Ave & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	866	80	47	487	162	50	64	51	154	124	31
Future Volume (vph)	42	866	80	47	487	162	50	64	51	154	124	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	10	10	10
Storage Length (ft)	0		0	0		210	0		150	190		0
Storage Lanes	1		0	1		1	1		1	2		0
Taper Length (ft)	75			25			25			40		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00					0.98	1.00				1.00	
Frt		0.987				0.850		0.933			0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1685	3413	0	1652	3408	1561	1770	1773	0	3268	1688	0
Flt Permitted	0.437			0.153			0.950			0.950		
Satd. Flow (perm)	774	3413	0	266	3408	1526	1767	1773	0	3268	1688	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				204		43			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		282			847			500			530	
Travel Time (s)		6.4			19.3			11.4			12.0	
Confl. Peds. (#/hr)	2					2	1					1
Confl. Bikes (#/hr)		1						1				
Peak Hour Factor	0.93	0.93	0.93	0.97	0.97	0.97	0.79	0.79	0.79	0.87	0.87	0.87
Heavy Vehicles (%)	0%	1%	0%	2%	2%	0%	2%	0%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	2	0	0	0	0	0	0	0
Adj. Flow (vph)	45	931	86	48	502	167	63	81	65	177	143	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	1017	0	48	502	167	63	146	0	177	179	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)		10			10			12			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
5: Keeler Ave & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Headway Factor	1.09	1.04	1.04	1.09	1.05	1.04	1.00	1.00	1.00	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	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)		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	Prot	NA		Prot	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2		2						
Detector Phase	1	6		5	2	2	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0	15.0	4.0	5.0		4.0	5.0	
Minimum Split (s)	10.3	22.5		10.3	22.5	22.5	9.5	31.6		9.5	14.0	
Total Split (s)	13.0	33.0		13.0	33.0	33.0	15.0	14.0		15.0	14.0	
Total Split (%)	17.3%	44.0%		17.3%	44.0%	44.0%	20.0%	18.7%		20.0%	18.7%	
Maximum Green (s)	7.2	27.3		7.2	27.3	27.3	10.4	7.4		10.4	7.6	
Yellow Time (s)	3.0	4.7		3.0	4.7	4.7	3.0	3.7		3.0	3.5	
All-Red Time (s)	2.8	1.0		2.8	1.0	1.0	1.6	2.9		1.6	2.9	
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)	5.8	5.7		5.8	5.7	5.7	4.6	6.6		4.6	6.4	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	

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Lanes, Volumes, Timings
5: Keeler Ave & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)								24.0				
Flash Dont Walk (s)								1.0				
Pedestrian Calls (#/hr)								5				
Act Effct Green (s)	37.9	33.9		38.0	34.0	34.0	8.0	7.5		9.1	13.1	
Actuated g/C Ratio	0.51	0.45		0.51	0.45	0.45	0.11	0.10		0.12	0.17	
v/c Ratio	0.10	0.66		0.19	0.33	0.21	0.34	0.68		0.45	0.59	
Control Delay	9.0	20.4		10.7	12.0	3.7	35.3	40.7		34.1	40.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	9.0	20.4		10.7	12.0	3.7	35.3	40.7		34.1	40.4	
LOS	A	C		B	B	A	D	D		C	D	
Approach Delay		20.0			10.0			39.1			37.3	
Approach LOS		B			A			D			D	
Queue Length 50th (ft)	9	213		4	66	3	28	46		40	76	
Queue Length 95th (ft)	23	293		27	75	37	53	#96		65	#191	
Internal Link Dist (ft)		202			767			420			450	
Turn Bay Length (ft)						210				190		
Base Capacity (vph)	480	1551		268	1543	803	245	222		453	304	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.09	0.66		0.18	0.33	0.21	0.26	0.66		0.39	0.59	
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 75												
Offset: 30 (40%), Referenced to phase 2:WBTL, Start of Yellow												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.68												
Intersection Signal Delay: 21.2							Intersection LOS: C					
Intersection Capacity Utilization 60.3%							ICU Level of Service B					

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

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Lanes, Volumes, Timings 5: Keeler Ave & US Route 1

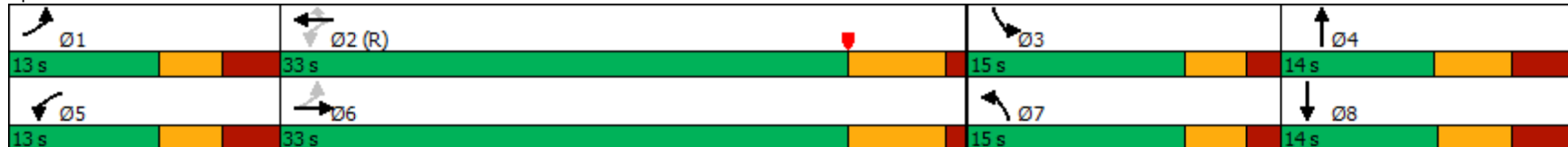
09/16/2024

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 5: Keeler Ave & US Route 1



Lanes, Volumes, Timings

6: Rampart Road/Driveway & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	21	1014	146	112	631	24	4	125	6	90	25	6	27
Future Volume (vph)	21	1014	146	112	631	24	4	125	6	90	25	6	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	13	13	12	13	13
Storage Length (ft)	200		0	200		230		120		0	0		0
Storage Lanes	1		0	1		1		1		0	1		0
Taper Length (ft)	75			80				80			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	1.00
Ped Bike Factor	0.99	1.00		1.00		0.97			0.99		1.00		
Frt		0.981				0.850			0.859			0.877	
Flt Protected	0.950			0.950				0.950			0.950		
Satd. Flow (prot)	1685	3380	0	1685	3455	1561	0	1805	1651	0	1805	1722	0
Flt Permitted	0.950			0.950				0.728			0.684		
Satd. Flow (perm)	1666	3380	0	1678	3455	1508	0	1383	1651	0	1299	1722	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)		23				112			106			36	
Link Speed (mph)		30			30				30			30	
Link Distance (ft)		539			722				374			244	
Travel Time (s)		12.3			16.4				8.5			5.5	
Confl. Peds. (#/hr)	10		8	8		10				1	1		
Confl. Bikes (#/hr)			1										
Peak Hour Factor	0.93	0.93	0.93	0.95	0.95	0.95	0.85	0.85	0.85	0.85	0.76	0.76	0.76
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	23	1090	157	118	664	25	5	147	7	106	33	8	36
Shared Lane Traffic (%)													
Lane Group Flow (vph)	23	1247	0	118	664	25	0	152	113	0	33	44	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			10				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	0.96	0.96	1.00	0.96	0.96

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Lanes, Volumes, Timings

6: Rampart Road/Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turning Speed (mph)	15		9	15		9	9	15		9	15	9
Number of Detectors	1	2		1	2	1	1	1	2		1	2
Detector Template	Left	Thru		Left	Thru	Right	Left	Left	Thru		Left	Thru
Leading Detector (ft)	20	100		20	100	20	20	20	100		20	100
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	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	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	Prot	NA		Prot	NA	Perm	Perm	Perm	NA		Perm	NA
Protected Phases	1	6		5	2				4			4
Permitted Phases						2	4	4			4	
Detector Phase	1	6		5	2	2	4	4	4		4	4
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	8.0	8.0	8.0		8.0	8.0
Minimum Split (s)	11.0	22.9		11.0	22.9	22.9	30.2	30.2	30.2		30.2	30.2
Total Split (s)	19.0	32.0		19.0	32.0	32.0	24.0	24.0	24.0		24.0	24.0
Total Split (%)	25.3%	42.7%		25.3%	42.7%	42.7%	32.0%	32.0%	32.0%		32.0%	32.0%
Maximum Green (s)	13.5	26.5		13.5	26.5	26.5	18.8	18.8	18.8		18.8	18.8
Yellow Time (s)	3.0	4.1		3.0	4.1	4.1	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	2.5	1.4		2.5	1.4	1.4	2.2	2.2	2.2		2.2	2.2
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)	5.5	5.5		5.5	5.5	5.5		5.2	5.2		5.2	5.2
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

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Lanes, Volumes, Timings

6: Rampart Road/Driveway & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	Max		None	C-Max	C-Max	None	None	None		None	None	
Walk Time (s)							24.0	24.0	24.0		24.0	24.0	
Flash Dont Walk (s)							1.0	1.0	1.0		1.0	1.0	
Pedestrian Calls (#/hr)							15	15	15		15	15	
Act Effct Green (s)	5.8	37.9		9.5	45.8	45.8		13.6	13.6		13.6	13.6	
Actuated g/C Ratio	0.08	0.51		0.13	0.61	0.61		0.18	0.18		0.18	0.18	
v/c Ratio	0.18	0.73		0.55	0.31	0.03		0.61	0.29		0.14	0.13	
Control Delay	36.6	15.9		39.9	9.6	0.0		37.8	8.2		25.0	11.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.6	15.9		39.9	9.6	0.0		37.8	8.2		25.0	11.0	
LOS	D	B		D	A	A		D	A		C	B	
Approach Delay		16.3			13.8				25.2			17.0	
Approach LOS		B			B				C			B	
Queue Length 50th (ft)	12	40		52	54	0		66	3		13	3	
Queue Length 95th (ft)	m26	#432		97	152	0		106	34		27	20	
Internal Link Dist (ft)		459			642				294			164	
Turn Bay Length (ft)	200			200		230		120					
Base Capacity (vph)	303	1717		303	2109	964		346	493		325	458	
Starvation Cap Reductn	0	0		0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.73		0.39	0.31	0.03		0.44	0.23		0.10	0.10	
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 15 (20%), Referenced to phase 2:WBT, Start of Yellow													
Natural Cycle: 80													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.73													
Intersection Signal Delay: 16.4				Intersection LOS: B									
Intersection Capacity Utilization 66.5%				ICU Level of Service C									
Analysis Period (min) 15													

Lanes, Volumes, Timings

6: Rampart Road/Driveway & US Route 1

09/16/2024

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 6: Rampart Road/Driveway & US Route 1



Lanes, Volumes, Timings
7: US Route 1 & Shop Rite Driveway

09/16/2024

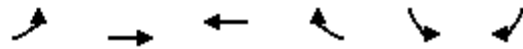
							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Lane Configurations		 	 		 		
Traffic Volume (vph)	172	946	618	240	295	143	
Future Volume (vph)	172	946	618	240	295	143	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	11	10	13	
Storage Length (ft)	315			460	0	0	
Storage Lanes	1			1	2	1	
Taper Length (ft)	85				25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor	1.00			0.98	0.99	0.98	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1685	3455	3421	1561	3268	1669	
Flt Permitted	0.384				0.950		
Satd. Flow (perm)	680	3455	3421	1526	3246	1642	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				250		163	
Link Speed (mph)		30	30		30		
Link Distance (ft)		722	805		215		
Travel Time (s)		16.4	18.3		4.9		
Confl. Peds. (#/hr)	3			3	2	2	
Peak Hour Factor	0.93	0.93	0.96	0.96	0.88	0.88	
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%	
Adj. Flow (vph)	185	1017	644	250	335	163	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	185	1017	644	250	335	163	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		10	10		20		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.04	1.04	1.04	1.09	0.96	
Turning Speed (mph)	15			9	15	9	

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

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Lanes, Volumes, Timings
7: US Route 1 & Shop Rite Driveway

09/16/2024



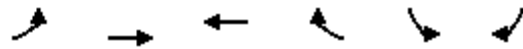
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	20	100	100	20	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	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	
Detector 1 Queue (s)	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	
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	pm+ov	Prot	Perm	
Protected Phases	1	1 2	2	4	4		3
Permitted Phases	2			2		4	
Detector Phase	1	2	2	4	4	4	
Switch Phase							
Minimum Initial (s)	4.0		15.0	9.0	9.0	9.0	1.0
Minimum Split (s)	9.5		22.5	13.3	13.3	13.3	28.0
Total Split (s)	20.0		51.0	20.0	20.0	20.0	14.0
Total Split (%)	19.0%		48.6%	19.0%	19.0%	19.0%	13%
Maximum Green (s)	16.0		44.9	15.7	15.7	15.7	10.0
Yellow Time (s)	3.0		4.1	3.0	3.0	3.0	4.0
All-Red Time (s)	1.0		2.0	1.3	1.3	1.3	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0		6.1	4.3	4.3	4.3	
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Vehicle Extension (s)	1.0		3.0	2.0	2.0	2.0	3.0
Recall Mode	None		C-Max	None	None	None	None

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

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Lanes, Volumes, Timings
7: US Route 1 & Shop Rite Driveway

09/16/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Walk Time (s)							7.0
Flash Dont Walk (s)							17.0
Pedestrian Calls (#/hr)							5
Act Effct Green (s)	75.6	79.6	66.5	82.6	14.3	14.3	
Actuated g/C Ratio	0.72	0.76	0.63	0.79	0.14	0.14	
v/c Ratio	0.33	0.39	0.30	0.20	0.75	0.45	
Control Delay	6.3	5.7	4.6	1.6	54.8	10.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.3	5.7	4.6	1.6	54.8	10.5	
LOS	A	A	A	A	D	B	
Approach Delay		5.8	3.7		40.3		
Approach LOS		A	A		D		
Queue Length 50th (ft)	25	91	124	39	112	0	
Queue Length 95th (ft)	76	213	12	0	155	55	
Internal Link Dist (ft)		642	725		135		
Turn Bay Length (ft)	315			460			
Base Capacity (vph)	668	2619	2167	1279	495	387	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.28	0.39	0.30	0.20	0.68	0.42	

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 105

Offset: 66 (63%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 11.7

Intersection LOS: B

Intersection Capacity Utilization 47.0%

ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings

7: US Route 1 & Shop Rite Driveway

09/16/2024

Splits and Phases: 7: US Route 1 & Shop Rite Driveway



Lanes, Volumes, Timings
8: Scribner Avenue & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations		 			 						 		
Traffic Volume (vph)	96	577	673	214	796	141	88	80	57	78	217	63	
Future Volume (vph)	96	577	673	214	796	141	88	80	57	78	217	63	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	10	10	11	11	10	13	13	10	11	11	
Storage Length (ft)	230		0	540		0	90		0	144		0	
Storage Lanes	1		1	1		0	1		0	1		0	
Taper Length (ft)	100			100			40			100			
Lane Util. Factor	1.00	0.95	1.00	1.00	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		1.00	1.00		
Frt			0.850		0.977			0.937			0.966		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1685	3490	1492	1685	3395	0	1668	1816	0	1604	1769	0	
Flt Permitted	0.950			0.950			0.560			0.142			
Satd. Flow (perm)	1678	3490	1492	1685	3395	0	982	1816	0	239	1769	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			710		19			28			12		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		482			773			571			677		
Travel Time (s)		11.0			17.6			13.0			15.4		
Confl. Peds. (#/hr)	5					5	1		2	2		1	
Peak Hour Factor	0.91	0.91	0.91	0.93	0.93	0.93	0.82	0.82	0.82	0.84	0.84	0.84	
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	1%	1%	0%	5%	0%	0%	
Adj. Flow (vph)	105	634	740	230	856	152	107	98	70	93	258	75	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	105	634	740	230	1008	0	107	168	0	93	333	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)		24			10			10			10		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.09	1.09	1.04	1.04	1.09	0.96	0.96	1.09	1.04	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
8: Scribner Avenue & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Number of Detectors	3	1	0	3	1		1	1		1	1		
Detector Template													
Leading Detector (ft)	27	166	0	34	171		19	19		28	28		
Trailing Detector (ft)	-6	160	0	-6	165		-9	-9		0	0		
Detector 1 Position(ft)	-6	160	0	-6	165		-9	-9		0	0		
Detector 1 Size(ft)	6	6	20	6	6		28	28		28	28		
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)	6			14									
Detector 2 Size(ft)	6			6									
Detector 2 Type	Cl+Ex			Cl+Ex									
Detector 2 Channel													
Detector 2 Extend (s)	0.0			0.0									
Detector 3 Position(ft)	21			28									
Detector 3 Size(ft)	6			6									
Detector 3 Type	Cl+Ex			Cl+Ex									
Detector 3 Channel													
Detector 3 Extend (s)	0.0			0.0									
Turn Type	Prot	NA	Free	Prot	NA		pm+pt	NA		custom	NA		
Protected Phases	1	6		5	2		4	8		4	7		3
Permitted Phases			Free				8			7 8	8		
Detector Phase	1	6		5	2		4	8		4	7		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	3.0		1.0
Minimum Split (s)	9.5	20.1		10.2	20.1		9.8	9.5		9.8	9.8		26.1
Total Split (s)	20.0	35.0		20.0	35.0		11.0	18.0		11.0	8.0		13.0
Total Split (%)	19.0%	33.3%		19.0%	33.3%		10.5%	17.1%		10.5%	7.6%		12%
Maximum Green (s)	15.7	29.9		14.9	29.9		6.2	13.5		6.2	3.2		8.9
Yellow Time (s)	3.0	3.9		3.9	3.9		3.0	3.0		3.0	3.0		4.0
All-Red Time (s)	1.3	1.2		1.2	1.2		1.8	1.5		1.8	1.8		0.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
8: Scribner Avenue & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Total Lost Time (s)	4.3	5.1		5.1	5.1		4.8	4.5		4.8	4.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lag	Lead		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)	1.5	2.5		1.5	2.5		1.5	1.5		1.5	1.5		0.2
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													15.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)	10.6	31.1	105.0	16.0	37.4		18.4	11.3		35.4	28.0		
Actuated g/C Ratio	0.10	0.30	1.00	0.15	0.36		0.18	0.11		0.34	0.27		
v/c Ratio	0.62	0.61	0.50	0.89	0.83		0.48	0.77		0.53	0.69		
Control Delay	48.1	48.1	6.0	73.5	34.9		33.4	60.0		35.1	43.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	48.1	48.1	6.0	73.5	34.9		33.4	60.0		35.1	43.1		
LOS	D	D	A	E	C		C	E		D	D		
Approach Delay		27.0			42.1			49.7			41.3		
Approach LOS		C			D			D			D		
Queue Length 50th (ft)	71	241	230	113	380		44	91		38	187		
Queue Length 95th (ft)	118	300	419	m#294	#521		88	144		#84	#338		
Internal Link Dist (ft)		402			693			491			597		
Turn Bay Length (ft)	230			540			90			144			
Base Capacity (vph)	251	1034	1492	257	1220		223	257		179	480		
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0		
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0		
Storage Cap Reductn	0	0	0	0	0		0	0		0	0		
Reduced v/c Ratio	0.42	0.61	0.50	0.89	0.83		0.48	0.65		0.52	0.69		
Intersection Summary													
Area Type:	Other												
Cycle Length:	105												
Actuated Cycle Length:	105												
Offset:	64 (61%), Referenced to phase 2:WBT, Start of Green												
Natural Cycle:	120												
Control Type:	Actuated-Coordinated												

Lanes, Volumes, Timings

8: Scribner Avenue & US Route 1

09/16/2024

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 36.1

Intersection LOS: D

Intersection Capacity Utilization 67.9%

ICU Level of Service C

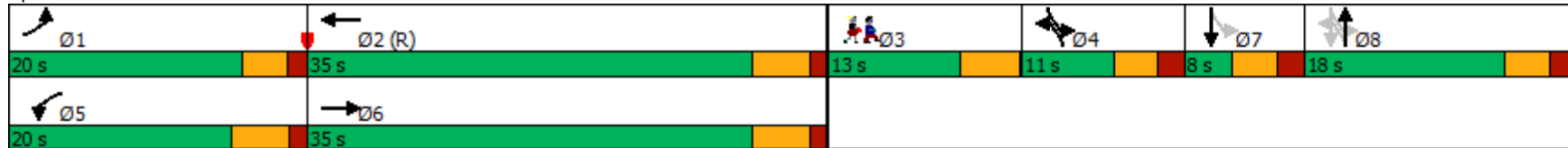
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 8: Scribner Avenue & US Route 1



Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	631	96	229	460	42	650	31	360	0	12	49
Future Volume (vph)	7	631	96	229	460	42	650	31	360	0	12	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	15	10	10	16
Storage Length (ft)	0		0	550		0	0		0	0		0
Storage Lanes	0		0	1		0	2		0	0		1
Taper Length (ft)	25			100			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							0.98
Frt		0.980			0.987			0.862				0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	3391	0	1668	3407	0	3502	1623	0	0	1773	1830
Flt Permitted		0.949		0.264			0.950					
Satd. Flow (perm)	0	3218	0	464	3407	0	3502	1623	0	0	1773	1801
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			10			404				125
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		773			955			578			162	
Travel Time (s)		17.6			21.7			13.1			3.7	
Confl. Peds. (#/hr)	10					10						1
Peak Hour Factor	0.96	0.96	0.96	0.93	0.93	0.93	0.89	0.89	0.89	0.86	0.86	0.86
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	7	657	100	246	495	45	730	35	404	0	14	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	764	0	246	540	0	730	439	0	0	14	57
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)		10			10			40			40	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	0.88	1.09	1.09	0.85
Turning Speed (mph)	15		9	15		9	15		9	15		9

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Number of Detectors	1	1		3	1		3	3		1	2	2
Detector Template	Left						Left					
Leading Detector (ft)	20	215		29	206		36	35		20	18	18
Trailing Detector (ft)	0	209		-5	200		0	-7		0	-2	-2
Detector 1 Position(ft)	0	209		-5	200		0	-7		0	-2	-2
Detector 1 Size(ft)	20	6		6	6		6	6		20	6	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)				9			15	12			12	12
Detector 2 Size(ft)				6			6	6			6	6
Detector 2 Type				Cl+Ex			Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)				0.0			0.0	0.0			0.0	0.0
Detector 3 Position(ft)				23			30	29				
Detector 3 Size(ft)				6			6	6				
Detector 3 Type				Cl+Ex			Cl+Ex	Cl+Ex				
Detector 3 Channel												
Detector 3 Extend (s)				0.0			0.0	0.0				
Turn Type	Perm	NA		pm+pt	NA		Split	NA			NA	Perm
Protected Phases		2		1	2		4	4		8	8	
Permitted Phases	2			2								8
Detector Phase	2	2		1	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		5.0	15.0		9.0	9.0		5.0	5.0	5.0
Minimum Split (s)	21.7	21.7		9.0	21.7		21.3	21.3		9.0	9.0	9.0
Total Split (s)	42.0	42.0		17.0	42.0		34.0	34.0		12.0	12.0	12.0
Total Split (%)	40.0%	40.0%		16.2%	40.0%		32.4%	32.4%		11.4%	11.4%	11.4%
Maximum Green (s)	35.3	35.3		13.0	35.3		29.7	29.7		8.0	8.0	8.0
Yellow Time (s)	4.4	4.4		3.0	4.4		3.3	3.3		3.0	3.0	3.0
All-Red Time (s)	2.3	2.3		1.0	2.3		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

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)		6.7		4.0	6.7		4.3	4.3			4.0	4.0
Lead/Lag	Lag	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.5	2.5		1.5	2.5		2.0	2.0		1.5	1.5	1.5
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	None
Walk Time (s)							16.0	16.0				
Flash Dont Walk (s)							1.0	1.0				
Pedestrian Calls (#/hr)							10	10				
Act Effct Green (s)		43.0		58.5	43.0		26.6	26.6			5.4	5.4
Actuated g/C Ratio		0.41		0.56	0.41		0.25	0.25			0.05	0.05
v/c Ratio		0.58		0.61	0.39		0.82	0.62			0.15	0.27
Control Delay		16.7		18.5	24.3		45.4	8.5			51.1	3.1
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay		16.7		18.5	24.3		45.4	8.5			51.1	3.1
LOS		B		B	C		D	A			D	A
Approach Delay		16.7			22.5			31.5			12.6	
Approach LOS		B			C			C			B	
Queue Length 50th (ft)		264		79	137		235	18			9	0
Queue Length 95th (ft)		323		135	198		291	97			28	0
Internal Link Dist (ft)		693			875			498			82	
Turn Bay Length (ft)				550								
Base Capacity (vph)		1329		423	1402		993	749			135	252
Starvation Cap Reductn		0		0	0		0	0			0	0
Spillback Cap Reductn		0		0	0		0	0			0	0
Storage Cap Reductn		0		0	0		0	0			0	0
Reduced v/c Ratio		0.57		0.58	0.39		0.74	0.59			0.10	0.23
Intersection Summary												
Area Type:	Other											
Cycle Length:	105											
Actuated Cycle Length:	105											
Offset:	34 (32%), Referenced to phase 2:EBWB, Start of Yellow											
Natural Cycle:	65											
Control Type:	Actuated-Coordinated											

Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 24.4

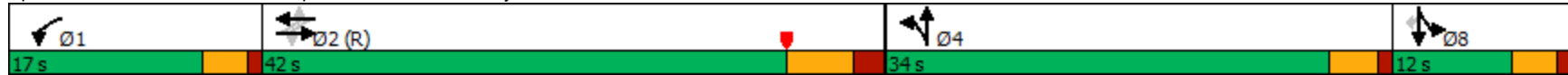
Intersection LOS: C

Intersection Capacity Utilization 74.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 9: I-95 Ramps/Global Gas Driveway & US Route 1



Lanes, Volumes, Timings
10: Taylor Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	138	621	217	102	569	5	91	79	75	93	113	62	
Future Volume (vph)	138	621	217	102	569	5	91	79	75	93	113	62	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	14	14	14	12	12	12	
Storage Length (ft)	155		0	140		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	100			70			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	0.99	0.99		1.00	1.00			0.99			0.99		
Frt		0.961			0.999			0.959			0.969		
Flt Protected	0.950			0.950				0.982			0.983		
Satd. Flow (prot)	1685	3298	0	1685	3430	0	0	1882	0	0	1795	0	
Flt Permitted	0.332			0.213				0.721			0.722		
Satd. Flow (perm)	585	3298	0	377	3430	0	0	1380	0	0	1315	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		62			1			29			20		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		955			301			227			157		
Travel Time (s)		21.7			6.8			5.2			3.6		
Confl. Peds. (#/hr)	11		3	3		11	5		12	12		5	
Confl. Bikes (#/hr)								1		1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.79	0.79	0.79	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	1%	1%	0%	1%	0%	
Bus Blockages (#/hr)	0	0	0	0	3	0	0	0	0	0	0	0	
Adj. Flow (vph)	147	661	231	109	605	5	115	100	95	97	118	65	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	147	892	0	109	610	0	0	310	0	0	280	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)		12			12			0			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
10: Taylor Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Headway Factor	1.09	1.04	1.04	1.09	1.05	1.04	0.92	0.92	0.92	1.00	1.00	1.00	
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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		3
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		9.0	9.0		9.0	9.0		1.0
Minimum Split (s)	10.0	20.7		9.5	20.7		14.8	14.8		14.8	14.8		26.0
Total Split (s)	10.0	24.0		10.0	24.0		25.0	25.0		25.0	25.0		16.0
Total Split (%)	13.3%	32.0%		13.3%	32.0%		33.3%	33.3%		33.3%	33.3%		21%
Maximum Green (s)	6.0	18.3		6.0	18.3		19.2	19.2		19.2	19.2		12.0
Yellow Time (s)	3.0	4.1		3.0	4.1		3.6	3.6		3.6	3.6		4.0
All-Red Time (s)	1.0	1.6		1.0	1.6		2.2	2.2		2.2	2.2		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	4.0	5.7		4.0	5.7			5.8			5.8		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?	Yes	Yes		Yes	Yes								

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
10: Taylor Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Vehicle Extension (s)	1.5	2.5		1.5	2.5		2.0	2.0		2.0	2.0		0.2
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													15.0
Pedestrian Calls (#/hr)													10
Act Effct Green (s)	40.0	32.9		38.2	30.6			19.3			19.3		
Actuated g/C Ratio	0.53	0.44		0.51	0.41			0.26			0.26		
v/c Ratio	0.36	0.60		0.37	0.44			0.82			0.79		
Control Delay	13.4	21.2		15.2	17.5			43.4			42.0		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	13.4	21.2		15.2	17.5			43.4			42.0		
LOS	B	C		B	B			D			D		
Approach Delay		20.1			17.1			43.4			42.0		
Approach LOS		C			B			D			D		
Queue Length 50th (ft)	29	154		18	62			117			107		
Queue Length 95th (ft)	82	#345		m63	m139			#203			#239		
Internal Link Dist (ft)		875			221			147			77		
Turn Bay Length (ft)	155			140									
Base Capacity (vph)	410	1482		303	1400			403			378		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.36	0.60		0.36	0.44			0.77			0.74		
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 27 (36%), Referenced to phase 2:WBTL, Start of Yellow													
Natural Cycle: 90													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.82													
Intersection Signal Delay: 24.9							Intersection LOS: C						
Intersection Capacity Utilization 61.8%							ICU Level of Service B						

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings

10: Taylor Ave & US Route 1

09/16/2024

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 10: Taylor Ave & US Route 1

 Ø1 10 s	 Ø2 (R) 24 s	 Ø3 16 s	 Ø4 25 s
 Ø5 10 s	 Ø6 24 s		

Lanes, Volumes, Timings
11: Cedar Street & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	88	562	145	62	612	23	207	66	68	25	57	86	
Future Volume (vph)	88	562	145	62	612	23	207	66	68	25	57	86	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	12	16	16	14	14	14	
Storage Length (ft)	0		0	260		0	250		0	0		0	
Storage Lanes	1		0	1		0	1		0	0		0	
Taper Length (ft)	25			90			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	0.99	0.99		1.00	1.00		0.99	0.98			0.99		
Frt		0.969			0.995			0.924			0.931		
Flt Protected	0.950			0.950			0.950				0.993		
Satd. Flow (prot)	1685	3292	0	1636	3410	0	1805	1897	0	0	1614	0	
Flt Permitted	0.305			0.283			0.579				0.933		
Satd. Flow (perm)	535	3292	0	486	3410	0	1094	1897	0	0	1513	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		42			5			70			72		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		98			473			371			196		
Travel Time (s)		2.2			10.8			8.4			4.5		
Confl. Peds. (#/hr)	25		7	7		25	8		19	19		8	
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.80	0.80	0.80	0.81	0.81	0.81	
Heavy Vehicles (%)	0%	1%	0%	3%	1%	0%	0%	0%	4%	0%	0%	1%	
Bus Blockages (#/hr)	0	6	0	0	3	0	0	3	0	0	0	0	
Parking (#/hr)											5		
Adj. Flow (vph)	92	585	151	67	665	25	259	83	85	31	70	106	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	92	736	0	67	690	0	259	168	0	0	207	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)		12			12			12			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
11: Cedar Street & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Headway Factor	1.09	1.06	1.04	1.09	1.05	1.04	1.00	0.86	0.85	0.92	1.09	0.92	
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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		3
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		9.0	9.0		9.0	9.0		1.0
Minimum Split (s)	9.0	20.9		9.0	20.9		14.7	14.7		14.7	14.7		31.0
Total Split (s)	11.0	26.0		11.0	26.0		28.0	28.0		28.0	28.0		10.0
Total Split (%)	14.7%	34.7%		14.7%	34.7%		37.3%	37.3%		37.3%	37.3%		13%
Maximum Green (s)	7.0	20.1		7.0	20.1		22.3	22.3		22.3	22.3		6.0
Yellow Time (s)	3.0	4.1		3.0	4.1		3.6	3.6		3.6	3.6		4.0
All-Red Time (s)	1.0	1.8		1.0	1.8		2.1	2.1		2.1	2.1		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0		
Total Lost Time (s)	4.0	5.9		4.0	5.9		5.7	5.7			5.7		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?	Yes	Yes		Yes	Yes								

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
11: Cedar Street & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Vehicle Extension (s)	1.5	2.5		1.5	2.5		2.0	2.0		2.0	2.0		3.0
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													19.0
Pedestrian Calls (#/hr)													25
Act Effct Green (s)	38.3	31.5		38.0	31.3		19.9	19.9			19.9		
Actuated g/C Ratio	0.51	0.42		0.51	0.42		0.27	0.27			0.27		
v/c Ratio	0.25	0.52		0.20	0.48		0.89	0.30			0.46		
Control Delay	10.3	15.1		21.7	31.4		59.2	13.7			17.4		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0		
Total Delay	10.3	15.1		21.7	31.4		59.2	13.7			17.4		
LOS	B	B		C	C		E	B			B		
Approach Delay		14.5			30.5			41.3			17.4		
Approach LOS		B			C			D			B		
Queue Length 50th (ft)	14	61		23	169		108	33			47		
Queue Length 95th (ft)	m32	#161		m51	237		#189	66			89		
Internal Link Dist (ft)		18			393			291			116		
Turn Bay Length (ft)				260			250						
Base Capacity (vph)	385	1406		358	1426		327	617			503		
Starvation Cap Reductn	0	0		0	0		0	0			0		
Spillback Cap Reductn	0	0		0	0		0	0			0		
Storage Cap Reductn	0	0		0	0		0	0			0		
Reduced v/c Ratio	0.24	0.52		0.19	0.48		0.79	0.27			0.41		
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 27 (36%), Referenced to phase 2:WBTL, Start of Yellow													
Natural Cycle: 100													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.89													
Intersection Signal Delay: 25.4							Intersection LOS: C						
Intersection Capacity Utilization 63.8%							ICU Level of Service B						

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings

11: Cedar Street & US Route 1

09/16/2024

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

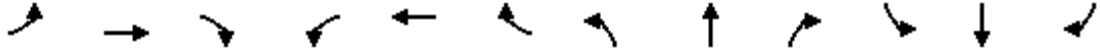
Splits and Phases: 11: Cedar Street & US Route 1

 Ø1  11 s	 Ø2 (R)  26 s	 Ø3  10 s	 Ø4  28 s
 Ø5  11 s	 Ø6  26 s		

Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

														
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3	Ø7
Lane Configurations														
Traffic Volume (vph)	64	453	60	39	544	33	200	109	141	37	62	87		
Future Volume (vph)	64	453	60	39	544	33	200	109	141	37	62	87		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	10	11	11	10	11	11	11	13	13	10	10	12		
Storage Length (ft)	290		0	50		0	0		0	105		105		
Storage Lanes	1		0	1		0	1		0	1		1		
Taper Length (ft)	25			50			25			85				
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	0.99	1.00		1.00	0.99		1.00	0.99		1.00		0.98		
Frt		0.982			0.991			0.915				0.850		
Flt Protected	0.950			0.950			0.950			0.950				
Satd. Flow (prot)	1636	3288	0	1685	3277	0	1728	1761	0	1685	1722	1615		
Flt Permitted	0.241			0.322			0.713			0.590				
Satd. Flow (perm)	409	3288	0	569	3277	0	1292	1761	0	1042	1722	1580		
Right Turn on Red			Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)		15			7			90				323		
Link Speed (mph)		30			30			30			30			
Link Distance (ft)		429			489			381			333			
Travel Time (s)		9.8			11.1			8.7			7.6			
Confl. Peds. (#/hr)	18		4	4		18	5		4	4		5		
Confl. Bikes (#/hr)		1						1						
Peak Hour Factor	0.86	0.86	0.86	0.94	0.94	0.94	0.91	0.91	0.91	0.93	0.93	0.93		
Heavy Vehicles (%)	3%	2%	1%	0%	3%	3%	1%	0%	2%	0%	3%	0%		
Bus Blockages (#/hr)	0	9	0	0	9	0	0	0	0	0	0	0		
Adj. Flow (vph)	74	527	70	41	579	35	220	120	155	40	67	94		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	74	597	0	41	614	0	220	275	0	40	67	94		
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)		12			15			11			11			
Link Offset(ft)		0			0			0			0			
Crosswalk Width(ft)		16			16			16			16			
Two way Left Turn Lane														

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

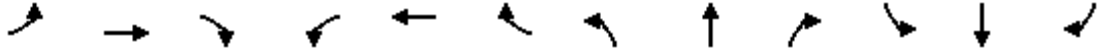
Synchro 11 Report

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Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

													Ø3	Ø7
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Headway Factor	1.09	1.07	1.04	1.09	1.07	1.04	1.04	0.96	0.96	1.09	1.09	1.00		
Turning Speed (mph)	15		9	15		9	15		9	15		9		
Number of Detectors	1	2		1	2		1	2		1	2	1		
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right		
Leading Detector (ft)	20	100		20	100		20	100		20	100	20		
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0		
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0		
Detector 1 Size(ft)	20	6		20	6		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		
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)		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		D.P+P	NA		pm+pt	NA	Perm		
Protected Phases	1	6		5	2		4 7	7 8		4	8		3	7
Permitted Phases	6			2			8			8		8		
Detector Phase	1	6		5	2		7	8		4	8	8		
Switch Phase														
Minimum Initial (s)	5.0	15.0		5.0	15.0					5.0	10.0	10.0	1.0	5.0
Minimum Split (s)	9.5	21.2		9.5	21.2					12.0	15.5	15.5	25.0	10.7
Total Split (s)	11.0	14.0		11.0	14.0					11.0	17.0	17.0	10.0	12.0
Total Split (%)	14.7%	18.7%		14.7%	18.7%					14.7%	22.7%	22.7%	13%	16%
Maximum Green (s)	7.0	7.8		7.0	7.8					5.5	11.5	11.5	6.0	6.5
Yellow Time (s)	3.0	4.1		3.0	4.1					3.3	3.3	3.3	4.0	3.3
All-Red Time (s)	1.0	2.1		1.0	2.1					2.2	2.2	2.2	0.0	2.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	0.0		
Total Lost Time (s)	4.0	6.2		4.0	6.2					5.5	5.5	5.5		
Lead/Lag	Lead	Lag		Lead	Lag						Lag	Lag		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes						Yes	Yes		Yes

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

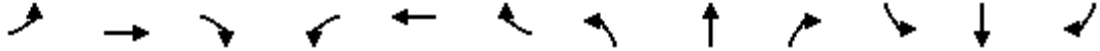
Synchro 11 Report

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Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

														
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3	Ø7
Vehicle Extension (s)	1.5	2.5		1.5	2.5					2.0	2.0	2.0	3.0	2.0
Recall Mode	None	Min		None	C-Min					None	None	None	None	None
Walk Time (s)													7.0	
Flash Dont Walk (s)													14.0	
Pedestrian Calls (#/hr)													15	
Act Effct Green (s)	31.9	25.7		30.2	23.5		24.2	23.0		15.7	10.3	10.3		
Actuated g/C Ratio	0.43	0.34		0.40	0.31		0.32	0.31		0.21	0.14	0.14		
v/c Ratio	0.27	0.53		0.13	0.60		0.44	0.46		0.15	0.28	0.19		
Control Delay	29.0	35.0		6.1	23.9		18.0	16.7		15.5	32.4	0.9		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0		
Total Delay	29.0	35.0		6.1	23.9		18.0	16.7		15.5	32.4	0.9		
LOS	C	C		A	C		B	B		B	C	A		
Approach Delay		34.3			22.8			17.3			14.3			
Approach LOS		C			C			B			B			
Queue Length 50th (ft)	21	106		6	125		65	69		11	29	0		
Queue Length 95th (ft)	m66	#309		m6	#336		105	131		26	63	0		
Internal Link Dist (ft)		349			409			301			253			
Turn Bay Length (ft)	290			50						105		105		
Base Capacity (vph)	289	1137		341	1030		500	629		268	264	515		
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0	0		
Reduced v/c Ratio	0.26	0.53		0.12	0.60		0.44	0.44		0.15	0.25	0.18		

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 27 (36%), Referenced to phase 2:WBTL, Start of Yellow

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 24.4

Intersection LOS: C

Intersection Capacity Utilization 57.4%

ICU Level of Service B

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

 Ø1	 Ø2 (R)	 Ø3	 Ø4	 Ø7	 Ø8
11 s	14 s	10 s	11 s	12 s	17 s
 Ø5	 Ø6				
11 s	14 s				

Lanes, Volumes, Timings
13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	104	490	16	60	603	47	10	65	61	22	91	60	
Future Volume (vph)	104	490	16	60	603	47	10	65	61	22	91	60	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	14	14	14	14	14	14	
Storage Length (ft)	0		0	65		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	0			160			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	1.00		1.00	1.00			0.99			0.99		
Frt		0.995			0.989			0.940			0.953		
Flt Protected	0.950			0.950				0.996			0.994		
Satd. Flow (prot)	1652	3404	0	1685	3411	0	0	1863	0	0	1663	0	
Flt Permitted	0.322			0.441				0.968			0.939		
Satd. Flow (perm)	558	3404	0	781	3411	0	0	1810	0	0	1569	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		4			10			45			29		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		291			405			209			244		
Travel Time (s)		6.6			9.2			4.8			5.5		
Confl. Peds. (#/hr)	6		2	2		6	3		8	8		3	
Confl. Bikes (#/hr)		1											
Peak Hour Factor	0.90	0.90	0.90	0.94	0.94	0.94	0.83	0.83	0.83	0.83	0.83	0.83	
Heavy Vehicles (%)	2%	2%	0%	0%	1%	0%	0%	1%	0%	0%	0%	6%	
Parking (#/hr)											2		
Adj. Flow (vph)	116	544	18	64	641	50	12	78	73	27	110	72	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	116	562	0	64	691	0	0	163	0	0	209	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)		10			16			0			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

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Lanes, Volumes, Timings
13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	0.92	0.92	0.92	0.92	1.07	0.92	
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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		3
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0		1.0
Minimum Split (s)	9.0	22.0		9.0	22.0		11.2	11.2		11.2	11.2		25.0
Total Split (s)	10.0	24.0		10.0	24.0		16.0	16.0		16.0	16.0		25.0
Total Split (%)	13.3%	32.0%		13.3%	32.0%		21.3%	21.3%		21.3%	21.3%		33%
Maximum Green (s)	6.0	17.0		6.0	17.0		9.8	9.8		9.8	9.8		21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0		4.0
All-Red Time (s)	1.0	3.0		1.0	3.0		2.2	2.2		2.2	2.2		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	4.0	7.0		4.0	7.0			6.2			6.2		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?	Yes	Yes		Yes	Yes								

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

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Lanes, Volumes, Timings
13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Vehicle Extension (s)	1.5	2.5		1.5	2.5		2.0	2.0		2.0	2.0		0.2
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													14.0
Pedestrian Calls (#/hr)													10
Act Effct Green (s)	44.1	37.4		42.5	35.1			13.7			13.7		
Actuated g/C Ratio	0.59	0.50		0.57	0.47			0.18			0.18		
v/c Ratio	0.28	0.33		0.13	0.43			0.45			0.68		
Control Delay	11.3	18.0		13.3	20.2			24.1			38.7		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	11.3	18.0		13.3	20.2			24.1			38.7		
LOS	B	B		B	C			C			D		
Approach Delay		16.9			19.6			24.1			38.7		
Approach LOS		B			B			C			D		
Queue Length 50th (ft)	31	117		7	82			47			75		
Queue Length 95th (ft)	89	183		66	#271			99			#181		
Internal Link Dist (ft)		211			325			129			164		
Turn Bay Length (ft)				65									
Base Capacity (vph)	418	1699		519	1603			366			309		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.28	0.33		0.12	0.43			0.45			0.68		
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 64 (85%), Referenced to phase 2:WBTL, Start of Green													
Natural Cycle: 75													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.68													
Intersection Signal Delay: 21.2							Intersection LOS: C						
Intersection Capacity Utilization 53.5%							ICU Level of Service A						

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

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Lanes, Volumes, Timings

13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 13: Stuart Ave & US Route 1/Van Buren Ave

 Ø1 10 s	 Ø2 (R) 24 s	 Ø3 25 s	 Ø4 16 s
 Ø5 10 s	 Ø6 24 s		

Lanes, Volumes, Timings
14: Van Buren Ave & Connecticut Ave

09/16/2024

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations							
Traffic Volume (vph)	199	89	388	182	79	436	
Future Volume (vph)	199	89	388	182	79	436	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	12	10	10	10	10	
Lane Util. Factor	0.97	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor			0.99			1.00	
Frt		0.850	0.952				
Flt Protected	0.950					0.992	
Satd. Flow (prot)	3385	1615	3128	0	0	3287	
Flt Permitted	0.950					0.785	
Satd. Flow (perm)	3385	1615	3128	0	0	2600	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		94	106				
Link Speed (mph)	30		30			30	
Link Distance (ft)	369		768			690	
Travel Time (s)	8.4		17.5			15.7	
Confl. Peds. (#/hr)				3	3		
Confl. Bikes (#/hr)				1			
Peak Hour Factor	0.95	0.95	0.93	0.93	0.94	0.94	
Heavy Vehicles (%)	0%	0%	2%	1%	0%	2%	
Adj. Flow (vph)	209	94	417	196	84	464	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	209	94	613	0	0	548	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	22		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.04	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9		9	15		
Number of Detectors	1	1	2		1	2	
Detector Template	Left	Right	Thru		Left	Thru	

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

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Lanes, Volumes, Timings
14: Van Buren Ave & Connecticut Ave

09/16/2024

							
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Leading Detector (ft)	20	20	100		20	100	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	20	6		20	6	
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	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	5	6		5	2	3
Permitted Phases		8			2		
Detector Phase	8	5	6		5	2	
Switch Phase							
Minimum Initial (s)	10.0	5.0	15.0		5.0	15.0	5.0
Minimum Split (s)	14.6	8.7	20.5		8.7	20.5	25.0
Total Split (s)	24.0	11.0	28.0		11.0	28.0	12.0
Total Split (%)	32.0%	14.7%	37.3%		14.7%	37.3%	16%
Maximum Green (s)	19.4	7.3	22.5		7.3	22.5	8.0
Yellow Time (s)	3.6	3.6	3.6		3.6	3.6	4.0
All-Red Time (s)	1.0	0.1	1.9		0.1	1.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	
Total Lost Time (s)	4.6	3.7	5.5			5.5	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	Min		None	C-Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							14.0

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings 14: Van Buren Ave & Connecticut Ave

09/16/2024

	↙ ↖ ↑ ↗ ↘ ↓						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Pedestrian Calls (#/hr)							5
Act Effct Green (s)	10.8	20.9	44.3			51.7	
Actuated g/C Ratio	0.14	0.28	0.59			0.69	
v/c Ratio	0.43	0.18	0.32			0.30	
Control Delay	32.1	5.7	6.3			8.6	
Queue Delay	0.0	0.0	0.0			0.0	
Total Delay	32.1	5.7	6.3			8.6	
LOS	C	A	A			A	
Approach Delay	23.9		6.3			8.6	
Approach LOS	C		A			A	
Queue Length 50th (ft)	46	0	10			15	
Queue Length 95th (ft)	75	30	93			156	
Internal Link Dist (ft)	289		688			610	
Turn Bay Length (ft)							
Base Capacity (vph)	875	553	1892			1821	
Starvation Cap Reductn	0	0	0			0	
Spillback Cap Reductn	0	0	0			0	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.24	0.17	0.32			0.30	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.43

Intersection Signal Delay: 10.8

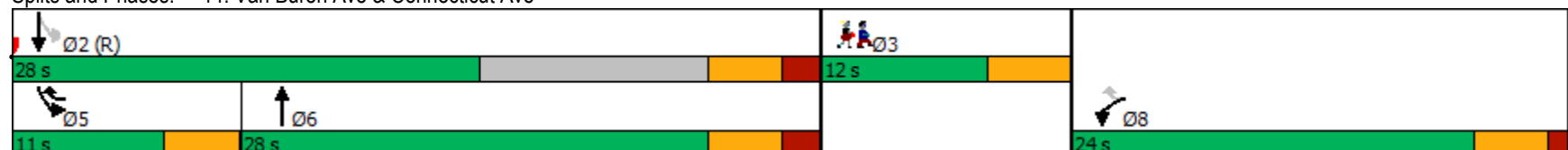
Intersection LOS: B

Intersection Capacity Utilization 52.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 14: Van Buren Ave & Connecticut Ave



Lanes, Volumes, Timings
15: Van Buren Ave & Maple St

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	156	110	89	47	83	26	103	304	59	68	394	116	
Future Volume (vph)	156	110	89	47	83	26	103	304	59	68	394	116	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	16	16	10	14	14	10	10	10	10	10	10	
Storage Length (ft)	0		0	311		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	130			100			25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	
Ped Bike Factor	0.99	0.99		0.99	0.99			1.00			0.99		
Frt		0.933			0.964			0.981			0.970		
Flt Protected	0.950			0.950				0.989			0.994		
Satd. Flow (prot)	1787	1944	0	1652	1912	0	0	3168	0	0	3124	0	
Flt Permitted	0.543			0.568				0.703			0.836		
Satd. Flow (perm)	1012	1944	0	980	1912	0	0	2251	0	0	2628	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		50			19			23			38		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		109			722			690			1249		
Travel Time (s)		2.5			16.4			15.7			28.4		
Confl. Peds. (#/hr)	11		11	11		11	5					5	
Confl. Bikes (#/hr)										1	2		
Peak Hour Factor	0.92	0.92	0.92	0.75	0.75	0.75	0.97	0.97	0.97	0.93	0.93	0.93	
Heavy Vehicles (%)	1%	3%	1%	2%	2%	0%	0%	3%	0%	0%	4%	3%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	6	0	0	0	0	
Adj. Flow (vph)	170	120	97	63	111	35	106	313	61	73	424	125	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	170	217	0	63	146	0	0	480	0	0	622	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)		12			12			0			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

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Lanes, Volumes, Timings
15: Van Buren Ave & Maple St

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Headway Factor	1.00	0.85	0.85	1.09	0.92	0.92	1.09	1.11	1.09	1.09	1.09	1.09	
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	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA		
Protected Phases	7	4		3	8		5	2			6		9
Permitted Phases	4			8			2			6			
Detector Phase	7	4		3	8		5	2		6	6		
Switch Phase													
Minimum Initial (s)	4.0	7.0		4.0	7.0		4.0	10.0		10.0	10.0		1.0
Minimum Split (s)	8.9	11.5		8.9	11.9		7.7	15.1		15.2	15.2		25.0
Total Split (s)	11.0	19.0		11.0	21.0		9.0	22.0		22.0	22.0		12.0
Total Split (%)	14.7%	25.3%		14.7%	28.0%		12.0%	29.3%		29.3%	29.3%		16%
Maximum Green (s)	6.1	14.5		6.1	16.1		5.3	16.9		16.8	16.8		8.0
Yellow Time (s)	3.4	3.4		3.4	3.4		3.6	3.6		3.6	3.6		4.0
All-Red Time (s)	1.5	1.1		1.5	1.5		0.1	1.5		1.6	1.6		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	4.9	4.5		4.9	4.9			5.1			5.2		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes		

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
15: Van Buren Ave & Maple St

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	None		None	None		None	C-Min		Min	Min		None
Walk Time (s)													7.0
Flash Dont Walk (s)													14.0
Pedestrian Calls (#/hr)													15
Act Effct Green (s)	19.4	16.1		17.3	11.3			40.3			40.2		
Actuated g/C Ratio	0.26	0.21		0.23	0.15			0.54			0.54		
v/c Ratio	0.52	0.47		0.23	0.48			0.39			0.44		
Control Delay	26.6	24.1		20.0	29.7			9.5			11.2		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	26.6	24.1		20.0	29.7			9.5			11.2		
LOS	C	C		B	C			A			B		
Approach Delay		25.2			26.8			9.5			11.2		
Approach LOS		C			C			A			B		
Queue Length 50th (ft)	61	73		21	54			13			50		
Queue Length 95th (ft)	100	129		36	79			160			110		
Internal Link Dist (ft)		29			642			610			1169		
Turn Bay Length (ft)				311									
Base Capacity (vph)	324	493		282	425			1219			1425		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.52	0.44		0.22	0.34			0.39			0.44		
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 42 (56%), Referenced to phase 2:NBTL, Start of Yellow													
Natural Cycle: 90													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.52													
Intersection Signal Delay: 15.9							Intersection LOS: B						
Intersection Capacity Utilization 61.6%							ICU Level of Service B						

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

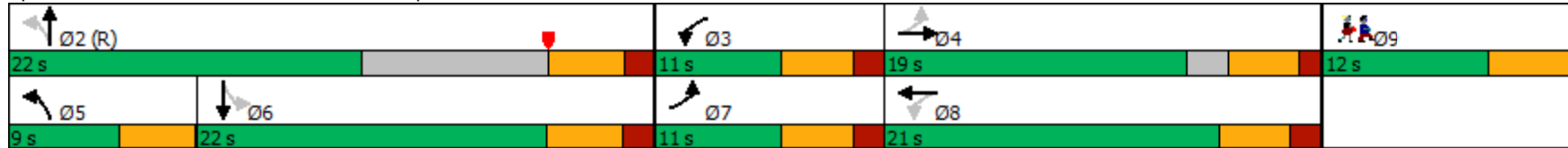
Synchro 11 Report
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Lanes, Volumes, Timings 15: Van Buren Ave & Maple St

09/16/2024

Analysis Period (min) 15

Splits and Phases: 15: Van Buren Ave & Maple St



Lanes, Volumes, Timings
16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	73	17	210	77	191	14	390	40	155	353	76
Future Volume (vph)	66	73	17	210	77	191	14	390	40	155	353	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	10	12	12	10	11	11	10	10	12
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				0.99	
Frt		0.985			0.893			0.986			0.973	
Flt Protected		0.979		0.950			0.950			0.950		
Satd. Flow (prot)	0	2076	0	1685	1685	0	1685	1779	0	1685	1668	0
Flt Permitted		0.725		0.523			0.426			0.149		
Satd. Flow (perm)	0	1538	0	927	1685	0	753	1779	0	264	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			195			7			15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		254			189			680			409	
Travel Time (s)		5.8			4.3			15.5			9.3	
Confl. Peds. (#/hr)							5					5
Peak Hour Factor	0.78	0.78	0.78	0.87	0.87	0.87	0.80	0.80	0.80	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	2%	0%	0%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	3	0
Adj. Flow (vph)	85	94	22	241	89	220	18	488	50	170	388	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	201	0	241	309	0	18	538	0	170	472	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			50			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	1.09	1.00	1.00	1.09	1.04	1.04	1.09	1.11	1.00
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	

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		5.0	10.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	14.7	14.7		12.0	14.7		10.0	20.2		9.5	25.2	
Total Split (s)	22.0	22.0		12.0	22.0		12.0	29.0		12.0	29.0	
Total Split (%)	29.3%	29.3%		16.0%	29.3%		16.0%	38.7%		16.0%	38.7%	
Maximum Green (s)	17.3	17.3		8.7	17.3		6.7	23.8		6.7	23.8	
Yellow Time (s)	3.2	3.2		3.2	3.2		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.5	1.5		0.1	1.5		1.6	1.5		1.6	1.5	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.7		3.3	4.7		5.3	5.2		5.3	5.2	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Min		None	Min	
Walk Time (s)											7.0	
Flash Dont Walk (s)											13.0	

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)											5	
Act Effct Green (s)		14.2		27.6	26.2		31.7	25.9		37.8	36.5	
Actuated g/C Ratio		0.19		0.37	0.35		0.42	0.35		0.50	0.49	
v/c Ratio		0.68		0.56	0.43		0.05	0.87		0.61	0.58	
Control Delay		38.7		22.6	8.6		11.4	39.9		26.2	24.2	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		38.7		22.6	8.6		11.4	39.9		26.2	24.2	
LOS		D		C	A		B	D		C	C	
Approach Delay		38.7			14.7			39.0			24.7	
Approach LOS		D			B			D			C	
Queue Length 50th (ft)		84		80	36		3	209		50	150	
Queue Length 95th (ft)		121		124	82		10	#310		m#113	#385	
Internal Link Dist (ft)		174			109			600			329	
Turn Bay Length (ft)												
Base Capacity (vph)		360		428	777		409	618		280	820	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.56		0.56	0.40		0.04	0.87		0.61	0.58	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 3 (4%), Referenced to phase 2:NBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 27.4

Intersection LOS: C

Intersection Capacity Utilization 72.4%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Lanes, Volumes, Timings

16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

Splits and Phases: 16: Van Buren Ave & Grandview Ave/US 7



Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	5	144	68	327	219	87	13	146	452	76	193	6	
Future Volume (vph)	5	144	68	327	219	87	13	146	452	76	193	6	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10	
Storage Length (ft)	0		60	0		0	120		115	80		0	
Storage Lanes	0		1	1		0	1		1	1		0	
Taper Length (ft)	25			25			80			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	0.98	1.00	0.99				0.99	1.00			
Frt			0.850		0.957				0.850		0.996		
Flt Protected		0.998		0.950			0.950			0.950			
Satd. Flow (prot)	0	1753	1449	1636	1678	0	1685	1773	1460	1685	1749	0	
Flt Permitted		0.000		0.535			0.580			0.653			
Satd. Flow (perm)	0	0	1424	917	1678	0	1029	1773	1440	1155	1749	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			154		30				491		2		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		350			460			409			259		
Travel Time (s)		8.0			10.5			9.3			5.9		
Confl. Peds. (#/hr)	5		5	5		5			2	2			
Peak Hour Factor	0.79	0.79	0.79	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	
Heavy Vehicles (%)	0%	1%	4%	3%	0%	1%	0%	0%	2%	0%	1%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	3	0	0	0	
Adj. Flow (vph)	6	182	86	348	233	93	14	159	491	81	205	6	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	188	86	348	326	0	14	159	491	81	211	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			10			10			10		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.11	1.09	1.09	1.09	

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

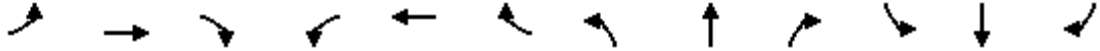
Synchro 11 Report

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Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2	1	1	2		
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru		
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100		
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	20	6		20	6	20	20	6		
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	custom	pm+pt	NA		Perm	NA	pm+ov	Perm	NA		
Protected Phases	7	4		8	4			2	8		6		3
Permitted Phases	4	7	4 7	4	8		2		2	6			
Detector Phase	7	4	4	8	4		2	2	8	6	6		
Switch Phase													
Minimum Initial (s)	5.0	7.0		7.0	7.0		15.0	15.0	7.0	15.0	15.0		1.0
Minimum Split (s)	10.7	12.7		12.0	12.7		19.6	19.6	12.0	19.6	19.6		26.0
Total Split (s)	11.0	14.0		18.0	14.0		20.0	20.0	18.0	20.0	20.0		12.0
Total Split (%)	14.7%	18.7%		24.0%	18.7%		26.7%	26.7%	24.0%	26.7%	26.7%		16%
Maximum Green (s)	5.3	8.3		13.0	8.3		15.4	15.4	13.0	15.4	15.4		8.0
Yellow Time (s)	3.7	3.7		3.5	3.7		3.6	3.6	3.5	3.6	3.6		4.0
All-Red Time (s)	2.0	2.0		1.5	2.0		1.0	1.0	1.5	1.0	1.0		0.0
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.7		5.0	5.7		4.6	4.6	5.0	4.6	4.6		
Lead/Lag		Lag		Lead	Lag				Lead				
Lead-Lag Optimize?		Yes		Yes	Yes				Yes				
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0

Existing PM Balanced 8:49 pm 08/09/2024 Existing PM Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Recall Mode	None	None		None	None		C-Min	C-Min	None	Min	Min		None
Walk Time (s)													7.0
Flash Dont Walk (s)													15.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)		10.9	10.9	28.6	32.9		29.4	29.4	46.0	29.4	29.4		
Actuated g/C Ratio		0.15	0.15	0.38	0.44		0.39	0.39	0.61	0.39	0.39		
v/c Ratio		0.74	0.26	0.68	0.43		0.03	0.23	0.46	0.18	0.31		
Control Delay		51.7	2.8	25.0	15.6		26.9	27.1	3.7	18.1	18.5		
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Delay		51.7	2.8	25.0	15.6		26.9	27.1	3.7	18.1	18.5		
LOS		D	A	C	B		C	C	A	B	B		
Approach Delay		36.3			20.5			9.8			18.4		
Approach LOS		D			C			A			B		
Queue Length 50th (ft)		80	0	92	77		6	70	1	26	70		
Queue Length 95th (ft)		#173	0	#247	185		m9	m96	m125	57	124		
Internal Link Dist (ft)		270			380			329			179		
Turn Bay Length (ft)			60				120		115	80			
Base Capacity (vph)		254	338	513	753		403	694	1078	452	686		
Starvation Cap Reductn		0	0	0	0		0	0	0	0	0		
Spillback Cap Reductn		0	0	0	0		0	0	0	0	0		
Storage Cap Reductn		0	0	0	0		0	0	0	0	0		
Reduced v/c Ratio		0.74	0.25	0.68	0.43		0.03	0.23	0.46	0.18	0.31		
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green													
Natural Cycle: 85													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.74													
Intersection Signal Delay: 18.7				Intersection LOS: B									
Intersection Capacity Utilization 68.1%				ICU Level of Service C									
Analysis Period (min) 15													

Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

 Ø2 (R)	 Ø3	 Ø8	 Ø4	 Ø7
20 s	12 s	18 s	14 s	11 s
 Ø6				
20 s				

Lanes, Volumes, Timings

1: US Route 1 & W Norwalk Rd

09/16/2024

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	107	653	1093	93	22	136
Future Volume (vph)	107	653	1093	93	22	136
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						
Frt			0.988		0.884	
Flt Protected		0.993			0.993	
Satd. Flow (prot)	0	3585	3515	0	1654	0
Flt Permitted		0.993			0.993	
Satd. Flow (perm)	0	3585	3515	0	1654	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		588	464		319	
Travel Time (s)		13.4	10.5		7.3	
Confl. Peds. (#/hr)						2
Peak Hour Factor	0.92	0.92	0.93	0.93	0.90	0.90
Heavy Vehicles (%)	0%	0%	1%	2%	0%	1%
Bus Blockages (#/hr)	0	0	2	0	0	0
Adj. Flow (vph)	116	710	1175	100	24	151
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	826	1275	0	175	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.01	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report

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Lanes, Volumes, Timings
1: US Route 1 & W Norwalk Rd

09/16/2024

Intersection Capacity Utilization 74.4%
Analysis Period (min) 15

ICU Level of Service D

Lanes, Volumes, Timings
2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	6	676	0	0	1085	4	101	0	555	3	0	12	
Future Volume (vph)	6	676	0	0	1085	4	101	0	555	3	0	12	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	11	11	11	12	12	14	
Storage Length (ft)	105		0	0		0	430		450	75		0	
Storage Lanes	1		0	0		0	1		1	1		1	
Taper Length (ft)	90			25			100			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	
Frt								0.850	0.850			0.850	
Flt Protected	0.950						0.950			0.950			
Satd. Flow (prot)	1685	3441	0	0	3265	0	1728	1468	1468	1805	0	1723	
Flt Permitted	0.950						0.950			0.950			
Satd. Flow (perm)	1685	3441	0	0	3265	0	1728	1468	1468	1805	0	1723	
Right Turn on Red			No			Yes			Yes			Yes	
Satd. Flow (RTOR)					1			402	402			156	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		464			619			634			228		
Travel Time (s)		10.5			14.1			14.4			5.2		
Peak Hour Factor	0.96	0.96	0.96	0.89	0.89	0.89	0.90	0.90	0.90	0.42	0.42	0.42	
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	1%	0%	1%	0%	0%	0%	
Bus Blockages (#/hr)	0	2	0	0	0	0	0	0	0	0	0	0	
Parking (#/hr)					2								
Adj. Flow (vph)	6	704	0	0	1219	4	112	0	617	7	0	29	
Shared Lane Traffic (%)									50%				
Lane Group Flow (vph)	6	704	0	0	1223	0	112	309	308	7	0	29	
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)		12			12			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.05	1.04	1.09	1.12	1.04	1.04	1.04	1.04	1.00	1.00	0.92	
Turning Speed (mph)	15		9	15		9	15		9	15		9	

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Number of Detectors	1	2			2		1	2	1	1		1	
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right	
Leading Detector (ft)	20	100			100		20	100	20	20		20	
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			6		20	6	20	20		20	
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					
Detector 2 Size(ft)		6			6			6					
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex					
Detector 2 Channel													
Detector 2 Extend (s)		0.0			0.0			0.0					
Turn Type	Prot	NA			NA		Prot	NA	Perm	Prot		pm+ov	
Protected Phases	1	1 2			2		4	3 4		5		1	3
Permitted Phases									3 4			5	
Detector Phase	1	2			2		4	4	4	5		1	
Switch Phase													
Minimum Initial (s)	5.0				15.0		9.0			7.0		5.0	1.0
Minimum Split (s)	11.9				22.5		13.1			11.0		11.9	23.0
Total Split (s)	10.0				37.0		4.0			14.0		10.0	10.0
Total Split (%)	13.3%				49.3%		5.3%			18.7%		13.3%	13%
Maximum Green (s)	3.6				30.3		1.0			10.0		3.6	6.0
Yellow Time (s)	3.0				4.1		2.0			3.0		3.0	4.0
All-Red Time (s)	3.4				2.6		1.0			1.0		3.4	0.0
Lost Time Adjust (s)	0.0				0.0		0.0			0.0		0.0	
Total Lost Time (s)	6.4				6.7		3.0			4.0		6.4	
Lead/Lag	Lead				Lag		Lag					Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes					Yes	Yes
Vehicle Extension (s)	2.0				2.5		2.0			2.0		2.0	3.0
Recall Mode	None				C-Min		None			None		None	None

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Walk Time (s)													7.0
Flash Dont Walk (s)													12.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)	5.2	51.0			46.0		10.4	10.6	10.6	7.0		7.4	
Actuated g/C Ratio	0.07	0.68			0.61		0.14	0.14	0.14	0.09		0.10	
v/c Ratio	0.05	0.30			0.61		0.47	0.56	0.56	0.04		0.09	
Control Delay	33.5	5.6			13.3		46.0	5.4	5.4	31.7		0.6	
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0	
Total Delay	33.5	5.6			13.3		46.0	5.4	5.4	31.7		0.6	
LOS	C	A			B		D	A	A	C		A	
Approach Delay		5.8			13.3			11.6			6.6		
Approach LOS		A			B			B			A		
Queue Length 50th (ft)	3	46			105		48	0	0	3		0	
Queue Length 95th (ft)	14	114			#398		#196	27	26	7		0	
Internal Link Dist (ft)		384			539			554			148		
Turn Bay Length (ft)	105						430		450	75			
Base Capacity (vph)	116	2342			2003		238	552	552	240		309	
Starvation Cap Reductn	0	0			0		0	0	0	0		0	
Spillback Cap Reductn	0	0			0		0	0	0	0		0	
Storage Cap Reductn	0	0			0		0	0	0	0		0	
Reduced v/c Ratio	0.05	0.30			0.61		0.47	0.56	0.56	0.03		0.09	
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow													
Natural Cycle: 105													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.61													
Intersection Signal Delay: 10.8				Intersection LOS: B									
Intersection Capacity Utilization 56.9%				ICU Level of Service B									
Analysis Period (min) 15													
# 95th percentile volume exceeds capacity, queue may be longer.													

Lanes, Volumes, Timings

2: I-95 NB Exit 13 Off Ramp & US Route 1

09/16/2024

Queue shown is maximum after two cycles.

Splits and Phases: 2: I-95 NB Exit 13 Off Ramp & US Route 1



Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	174	957	112	103	824	101	91	84	93	118	102	208	
Future Volume (vph)	174	957	112	103	824	101	91	84	93	118	102	208	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	12	11	11	10	10	10	
Storage Length (ft)	0		0	210		75	163		0	135		135	
Storage Lanes	1		0	1		1	1		0	1		1	
Taper Length (ft)	25			50			50			50			
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	
Ped Bike Factor	1.00	1.00		1.00		0.98		0.99		1.00			
Frt		0.984				0.850		0.921				0.850	
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1685	3421	0	1685	3490	1459	1805	1671	0	1685	1728	1492	
Flt Permitted	0.950			0.950			0.685			0.556			
Satd. Flow (perm)	1684	3421	0	1680	3490	1426	1302	1671	0	985	1728	1492	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		16				239		64				226	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		601			420			331			299		
Travel Time (s)		13.7			9.5			7.5			6.8		
Confl. Peds. (#/hr)	1		3	3		1			1	1			
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.87	0.87	0.87	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	0%	1%	0%	0%	7%	0%	0%	1%	0%	1%	1%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	4	0	
Adj. Flow (vph)	183	1007	118	107	858	105	105	97	107	128	111	226	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	183	1125	0	107	858	105	105	204	0	128	111	226	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.04	1.04	1.09	1.12	1.09	

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
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	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm	
Protected Phases	1	6		5	2			4			4		3
Permitted Phases						2	4			4		4	
Detector Phase	1	6		5	2	2	4	4		4	4	4	
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	8.0	8.0		8.0	8.0	8.0	1.0
Minimum Split (s)	10.4	22.5		10.4	22.5	22.5	14.7	14.7		14.7	14.7	14.7	29.0
Total Split (s)	23.0	30.0		15.0	22.0	22.0	25.0	25.0		25.0	25.0	25.0	10.0
Total Split (%)	28.8%	37.5%		18.8%	27.5%	27.5%	31.3%	31.3%		31.3%	31.3%	31.3%	13%
Maximum Green (s)	18.1	24.8		10.1	16.8	16.8	18.3	18.3		18.3	18.3	18.3	6.0
Yellow Time (s)	3.0	4.1		3.0	4.1	4.1	4.0	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.9	1.1		1.9	1.1	1.1	2.7	2.7		2.7	2.7	2.7	0.0
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)	4.9	5.2		4.9	5.2	5.2	6.7	6.7		6.7	6.7	6.7	
Lead/Lag	Lead	Lag		Lead	Lag	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes							
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	2.0		2.0	2.0	2.0	3.0

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Recall Mode	None	Max		None	C-Max	C-Max	None	None		None	None	None	None
Walk Time (s)													7.0
Flash Dont Walk (s)													18.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)	12.9	40.1		8.7	33.9	33.9	14.4	14.4		14.4	14.4	14.4	
Actuated g/C Ratio	0.16	0.50		0.11	0.42	0.42	0.18	0.18		0.18	0.18	0.18	
v/c Ratio	0.67	0.65		0.58	0.58	0.14	0.45	0.58		0.72	0.36	0.50	
Control Delay	44.3	13.4		39.8	33.2	3.4	34.2	26.2		52.9	30.6	8.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Total Delay	44.3	13.4		39.8	33.2	3.4	34.2	26.2		52.9	30.6	8.0	
LOS	D	B		D	C	A	C	C		D	C	A	
Approach Delay	17.7				31.0		28.9				25.8		
Approach LOS	B				C		C				C		
Queue Length 50th (ft)	82	168		52	222	1	47	63		60	49	0	
Queue Length 95th (ft)	m77	#461		m104	#402	m19	86	116		#117	90	54	
Internal Link Dist (ft)	521				340		251				219		
Turn Bay Length (ft)			210		75		163		135		135		
Base Capacity (vph)	381	1724		216	1477	741	301	436		228	400	519	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	0	
Reduced v/c Ratio	0.48	0.65		0.50	0.58	0.14	0.35	0.47		0.56	0.28	0.44	
Intersection Summary													
Area Type:	Other												
Cycle Length: 80													
Actuated Cycle Length: 80													
Offset: 24 (30%), Referenced to phase 2:WBT, Start of Yellow													
Natural Cycle: 100													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.72													
Intersection Signal Delay: 24.5				Intersection LOS: C									
Intersection Capacity Utilization 72.2%				ICU Level of Service C									
Analysis Period (min) 15													

Lanes, Volumes, Timings

3: Richards Ave & Connecticut Avenue/US Route 1

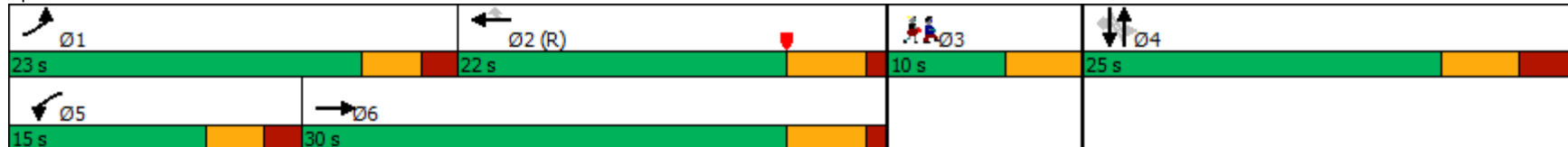
09/16/2024

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Richards Ave & Connecticut Avenue/US Route 1



Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	969	22	16	881	133	13	4	25	163	0	74
Future Volume (vph)	82	969	22	16	881	133	13	4	25	163	0	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	12	12	12
Storage Length (ft)	0		0	50		0	150		0	0		0
Storage Lanes	1		0	1		0	1		0	0		1
Taper Length (ft)	60			80			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	1.00		1.00	1.00		1.00					0.99
Frt		0.997			0.980			0.871				0.850
Flt Protected	0.950			0.950			0.950				0.950	
Satd. Flow (prot)	1685	3444	0	1685	3380	0	1805	1655	0	0	1805	1615
Flt Permitted	0.950			0.950			0.490				0.724	
Satd. Flow (perm)	1679	3444	0	1682	3380	0	929	1655	0	0	1376	1592
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			30			43				91
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		293			385			261			246	
Travel Time (s)		6.7			8.8			5.9			5.6	
Confl. Peds. (#/hr)	4		2	2		4	2					2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.58	0.58	0.58	0.81	0.81	0.81
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	86	1020	23	17	927	140	22	7	43	201	0	91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	1043	0	17	1067	0	22	50	0	0	201	91
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)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9

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Synchro 11 Report

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Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Number of Detectors	1	2		1	2		1	1		1	1	1
Detector Template	Left			Left			Left			Left		Right
Leading Detector (ft)	20	181		20	206		20	6		20	6	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		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
Detector 1 Channel		2,3		6	7,8			5			9	
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)		175			200							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel		40,41			43,44							
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	pm+ov
Protected Phases	1	6		5	2			4			4	1
Permitted Phases							4			4		4
Detector Phase	1	6		5	2		4	4		4	4	1
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		9.0	9.0		9.0	9.0	4.0
Minimum Split (s)	8.6	20.2		8.6	20.2		35.5	35.5		35.5	35.5	8.6
Total Split (s)	15.0	46.0		15.0	46.0		19.0	19.0		19.0	19.0	15.0
Total Split (%)	18.8%	57.5%		18.8%	57.5%		23.8%	23.8%		23.8%	23.8%	18.8%
Maximum Green (s)	10.4	40.8		10.4	40.8		13.5	13.5		13.5	13.5	10.4
Yellow Time (s)	3.0	4.1		3.0	4.1		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.6	1.1		1.6	1.1		2.5	2.5		2.5	2.5	1.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	4.6	5.2		4.6	5.2		5.5	5.5			5.5	4.6
Lead/Lag	Lead	Lag		Lead	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Max		None	C-Max		None	None		None	None	None

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Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)							18.0	18.0		18.0	18.0	
Flash Dont Walk (s)							1.0	1.0		1.0	1.0	
Pedestrian Calls (#/hr)							5	5		5	5	
Act Effct Green (s)	8.1	54.0		5.4	45.4		13.0	13.0			13.0	22.0
Actuated g/C Ratio	0.10	0.68		0.07	0.57		0.16	0.16			0.16	0.28
v/c Ratio	0.51	0.45		0.15	0.55		0.15	0.16			0.90	0.18
Control Delay	53.1	4.1		37.6	13.0		31.1	12.9			73.9	5.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	53.1	4.1		37.6	13.0		31.1	12.9			73.9	5.1
LOS	D	A		D	B		C	B			E	A
Approach Delay		7.8			13.4			18.4			52.4	
Approach LOS		A			B			B			D	
Queue Length 50th (ft)	43	32		8	172		10	3			99	0
Queue Length 95th (ft)	m78	94		27	244		19	13			#183	22
Internal Link Dist (ft)		213			305			181			166	
Turn Bay Length (ft)				50			150					
Base Capacity (vph)	219	2324		219	1932		156	315			232	550
Starvation Cap Reductn	0	0		0	0		0	0			0	0
Spillback Cap Reductn	0	0		0	0		0	0			0	0
Storage Cap Reductn	0	0		0	0		0	0			0	0
Reduced v/c Ratio	0.39	0.45		0.08	0.55		0.14	0.16			0.87	0.17
Intersection Summary												
Area Type:	Other											
Cycle Length: 80												
Actuated Cycle Length: 80												
Offset: 52 (65%), Referenced to phase 2:WBT, Start of Yellow												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.90												
Intersection Signal Delay: 15.5						Intersection LOS: B						
Intersection Capacity Utilization 61.6%						ICU Level of Service B						
Analysis Period (min) 15												
# 95th percentile volume exceeds capacity, queue may be longer.												

Lanes, Volumes, Timings

4: Liquidators Driveway/Walmart Driveway & US Route 1

09/16/2024

Queue shown is maximum after two cycles.

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

Splits and Phases: 4: Liquidators Driveway/Walmart Driveway & US Route 1



Lanes, Volumes, Timings
5: Keeler Ave & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	795	98	95	562	304	66	90	82	235	82	48
Future Volume (vph)	124	795	98	95	562	304	66	90	82	235	82	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	12	10	10	10
Storage Length (ft)	0		0	0		210	0		150	190		0
Storage Lanes	1		0	1		1	1		1	2		0
Taper Length (ft)	75			25			25			40		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00	1.00		1.00		0.98						
Frt		0.983				0.850		0.929			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1685	3388	0	1685	3448	1561	1805	1748	0	3268	1664	0
Flt Permitted	0.355			0.158			0.950			0.950		
Satd. Flow (perm)	629	3388	0	280	3448	1528	1805	1748	0	3268	1664	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				327		48			32	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		282			847			500			530	
Travel Time (s)		6.4			19.3			11.4			12.0	
Confl. Peds. (#/hr)	1		1	1		1						
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.85	0.85	0.85	0.88	0.88	0.88
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	1%	1%	0%	1%	0%
Bus Blockages (#/hr)	0	0	0	0	1	0	0	0	0	0	0	0
Adj. Flow (vph)	135	864	107	102	604	327	78	106	96	267	93	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	971	0	102	604	327	78	202	0	267	148	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)		10			10			12			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.05	1.04	1.00	1.00	1.00	1.09	1.09	1.09

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Synchro 11 Report
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Lanes, Volumes, Timings
5: Keeler Ave & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	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)		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	Prot	NA		Prot	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases	6			2		2						
Detector Phase	1	6		5	2	2	7	4		3	8	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0	15.0	4.0	5.0		4.0	5.0	
Minimum Split (s)	10.3	22.5		10.3	22.5	22.5	9.5	31.6		9.5	14.0	
Total Split (s)	13.0	33.0		13.0	33.0	33.0	15.0	14.0		15.0	14.0	
Total Split (%)	17.3%	44.0%		17.3%	44.0%	44.0%	20.0%	18.7%		20.0%	18.7%	
Maximum Green (s)	7.2	27.3		7.2	27.3	27.3	10.4	7.4		10.4	7.6	
Yellow Time (s)	3.0	4.7		3.0	4.7	4.7	3.0	3.7		3.0	3.5	
All-Red Time (s)	2.8	1.0		2.8	1.0	1.0	1.6	2.9		1.6	2.9	
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)	5.8	5.7		5.8	5.7	5.7	4.6	6.6		4.6	6.4	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	

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Lanes, Volumes, Timings
5: Keeler Ave & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)								24.0				
Flash Dont Walk (s)								1.0				
Pedestrian Calls (#/hr)								5				
Act Effct Green (s)	35.6	30.0		35.5	29.9	29.9	8.3	7.9		9.9	11.7	
Actuated g/C Ratio	0.47	0.40		0.47	0.40	0.40	0.11	0.11		0.13	0.16	
v/c Ratio	0.34	0.71		0.39	0.44	0.41	0.39	0.89		0.62	0.52	
Control Delay	11.6	23.0		18.8	16.8	5.8	36.2	66.0		37.6	33.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.6	23.0		18.8	16.8	5.8	36.2	66.0		37.6	33.8	
LOS	B	C		B	B	A	D	E		D	C	
Approach Delay		21.6			13.5			57.7			36.2	
Approach LOS		C			B			E			D	
Queue Length 50th (ft)	29	202		12	78	3	34	72		60	52	
Queue Length 95th (ft)	56	275		62	94	73	68	#178		95	#139	
Internal Link Dist (ft)		202			767			420			450	
Turn Bay Length (ft)						210				190		
Base Capacity (vph)	400	1365		267	1374	806	250	227		453	286	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.34	0.71		0.38	0.44	0.41	0.31	0.89		0.59	0.52	
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 75												
Offset: 30 (40%), Referenced to phase 2:WBTL, Start of Yellow												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.89												
Intersection Signal Delay: 24.4				Intersection LOS: C								
Intersection Capacity Utilization 65.7%				ICU Level of Service C								
Analysis Period (min) 15												

Lanes, Volumes, Timings 5: Keeler Ave & US Route 1

09/16/2024

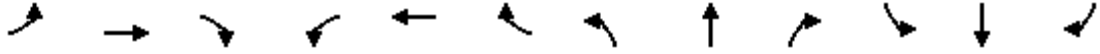
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Keeler Ave & US Route 1



Lanes, Volumes, Timings
6: Rampart Road/Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	984	184	133	909	38	131	6	130	22	12	40
Future Volume (vph)	38	984	184	133	909	38	131	6	130	22	12	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	13	13	12	13	13
Storage Length (ft)	200		0	200		230	120		0	0		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	75			80			80			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
Ped Bike Factor	0.99	1.00		1.00		0.96	1.00	0.99		1.00	0.99	
Frt		0.976				0.850		0.857			0.885	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1685	3365	0	1685	3455	1561	1805	1659	0	1805	1720	0
Flt Permitted	0.950			0.950			0.713			0.640		
Satd. Flow (perm)	1670	3365	0	1683	3455	1504	1354	1659	0	1213	1720	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32				112		144			52	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		539			722			374			244	
Travel Time (s)		12.3			16.4			8.5			5.5	
Confl. Peds. (#/hr)	12		2	2		12	1		3	3		1
Peak Hour Factor	0.95	0.95	0.95	0.93	0.93	0.93	0.90	0.90	0.90	0.77	0.77	0.77
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	40	1036	194	143	977	41	146	7	144	29	16	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1230	0	143	977	41	146	151	0	29	68	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)		12			10			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	0.96	0.96	1.00	0.96	0.96
Turning Speed (mph)	15		9	15		9	15		9	15		9

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Lanes, Volumes, Timings

6: Rampart Road/Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	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)		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		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Detector Phase	1	6		5	2	2	4	4		4	4	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	11.0	22.9		11.0	22.9	22.9	30.2	30.2		30.2	30.2	
Total Split (s)	19.0	32.0		19.0	32.0	32.0	24.0	24.0		24.0	24.0	
Total Split (%)	25.3%	42.7%		25.3%	42.7%	42.7%	32.0%	32.0%		32.0%	32.0%	
Maximum Green (s)	13.5	26.5		13.5	26.5	26.5	18.8	18.8		18.8	18.8	
Yellow Time (s)	3.0	4.1		3.0	4.1	4.1	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	1.4		2.5	1.4	1.4	2.2	2.2		2.2	2.2	
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)	5.5	5.5		5.5	5.5	5.5	5.2	5.2		5.2	5.2	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	Max		None	C-Max	C-Max	None	None		None	None	

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report

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Lanes, Volumes, Timings
6: Rampart Road/Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)							24.0	24.0		24.0	24.0	
Flash Dont Walk (s)							1.0	1.0		1.0	1.0	
Pedestrian Calls (#/hr)							12	12		12	12	
Act Effct Green (s)	6.4	35.0		10.3	43.1	43.1	13.5	13.5		13.5	13.5	
Actuated g/C Ratio	0.09	0.47		0.14	0.57	0.57	0.18	0.18		0.18	0.18	
v/c Ratio	0.28	0.78		0.62	0.49	0.05	0.60	0.36		0.13	0.19	
Control Delay	36.3	18.2		41.7	13.0	0.1	37.8	7.8		25.0	11.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	36.3	18.2		41.7	13.0	0.1	37.8	7.8		25.0	11.3	
LOS	D	B		D	B	A	D	A		C	B	
Approach Delay		18.8			16.0			22.6			15.4	
Approach LOS		B			B			C			B	
Queue Length 50th (ft)	0	51		63	147	0	63	3		12	6	
Queue Length 95th (ft)	m44	#423		114	252	0	110	44		26	27	
Internal Link Dist (ft)		459			642			294			164	
Turn Bay Length (ft)	200			200		230	120					
Base Capacity (vph)	303	1586		303	1985	911	339	523		304	470	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.13	0.78		0.47	0.49	0.05	0.43	0.29		0.10	0.14	
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 75												
Offset: 15 (20%), Referenced to phase 2:WBT, Start of Yellow												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.78												
Intersection Signal Delay: 17.9				Intersection LOS: B								
Intersection Capacity Utilization 72.3%				ICU Level of Service C								
Analysis Period (min) 15												
# 95th percentile volume exceeds capacity, queue may be longer.												

Lanes, Volumes, Timings

6: Rampart Road/Driveway & US Route 1

09/16/2024

Queue shown is maximum after two cycles.

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

Splits and Phases: 6: Rampart Road/Driveway & US Route 1



Lanes, Volumes, Timings
7: US Route 1 & Shop Rite Driveway

09/16/2024

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Lane Configurations							
Traffic Volume (vph)	190	957	928	289	321	159	
Future Volume (vph)	190	957	928	289	321	159	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	11	10	13	
Storage Length (ft)	315			460	0	0	
Storage Lanes	1			1	2	1	
Taper Length (ft)	85				25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00	
Ped Bike Factor	1.00			0.97	0.98	0.98	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1685	3455	3455	1561	3268	1669	
Flt Permitted	0.219				0.950		
Satd. Flow (perm)	388	3455	3455	1517	3203	1642	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				314		192	
Link Speed (mph)		30	30		30		
Link Distance (ft)		722	805		215		
Travel Time (s)		16.4	18.3		4.9		
Confl. Peds. (#/hr)	10			10	6	2	
Peak Hour Factor	0.93	0.93	0.92	0.92	0.83	0.83	
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%	
Adj. Flow (vph)	204	1029	1009	314	387	192	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	204	1029	1009	314	387	192	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		10	10		20		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.04	1.04	1.04	1.09	0.96	
Turning Speed (mph)	15			9	15	9	

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Lanes, Volumes, Timings
7: US Route 1 & Shop Rite Driveway

09/16/2024

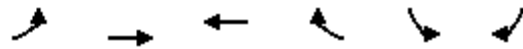
							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	20	100	100	20	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	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	
Detector 1 Queue (s)	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	
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	pm+ov	Prot	Perm	
Protected Phases	1	1 2	2	4	4		3
Permitted Phases	2			2		4	
Detector Phase	1	2	2	4	4	4	
Switch Phase							
Minimum Initial (s)	4.0		15.0	9.0	9.0	9.0	1.0
Minimum Split (s)	9.5		22.5	13.3	13.3	13.3	28.0
Total Split (s)	20.0		51.0	20.0	20.0	20.0	14.0
Total Split (%)	19.0%		48.6%	19.0%	19.0%	19.0%	13%
Maximum Green (s)	16.0		44.9	15.7	15.7	15.7	10.0
Yellow Time (s)	3.0		4.1	3.0	3.0	3.0	4.0
All-Red Time (s)	1.0		2.0	1.3	1.3	1.3	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0		6.1	4.3	4.3	4.3	
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Vehicle Extension (s)	1.0		3.0	2.0	2.0	2.0	3.0
Recall Mode	None		C-Max	None	None	None	None

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
7: US Route 1 & Shop Rite Driveway

09/16/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø3
Walk Time (s)							7.0
Flash Dont Walk (s)							17.0
Pedestrian Calls (#/hr)							12
Act Effct Green (s)	71.9	75.9	61.0	78.0	15.2	15.2	
Actuated g/C Ratio	0.68	0.72	0.58	0.74	0.14	0.14	
v/c Ratio	0.55	0.41	0.50	0.26	0.82	0.48	
Control Delay	11.7	7.3	6.6	1.9	58.6	10.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.7	7.3	6.6	1.9	58.6	10.2	
LOS	B	A	A	A	E	B	
Approach Delay		8.1	5.5		42.6		
Approach LOS		A	A		D		
Queue Length 50th (ft)	31	103	181	22	128	0	
Queue Length 95th (ft)	84	216	195	31	167	47	
Internal Link Dist (ft)		642	725		135		
Turn Bay Length (ft)	315			460			
Base Capacity (vph)	476	2498	2007	1223	496	412	
Starvation Cap Reductn	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	
Reduced v/c Ratio	0.43	0.41	0.50	0.26	0.78	0.47	

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 105

Offset: 66 (63%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 13.4

Intersection LOS: B

Intersection Capacity Utilization 57.3%

ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings

7: US Route 1 & Shop Rite Driveway

09/16/2024

Splits and Phases: 7: US Route 1 & Shop Rite Driveway



Lanes, Volumes, Timings
8: Scribner Avenue & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	114	577	744	139	1036	76	103	67	63	74	212	65	
Future Volume (vph)	114	577	744	139	1036	76	103	67	63	74	212	65	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	10	10	11	11	10	13	13	10	11	11	
Storage Length (ft)	230		0	540		0	90		0	144		0	
Storage Lanes	1		1	1		0	1		0	1		0	
Taper Length (ft)	100			100			40			100			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.99		0.98	1.00	1.00		1.00	0.99		1.00	1.00		
Frt			0.850		0.990			0.927			0.965		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1685	3455	1492	1685	3412	0	1685	1803	0	1685	1730	0	
Flt Permitted	0.950			0.950			0.569			0.160			
Satd. Flow (perm)	1674	3455	1462	1682	3412	0	1005	1803	0	283	1730	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			743		7			37			13		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		482			773			571			677		
Travel Time (s)		11.0			17.6			13.0			15.4		
Confl. Peds. (#/hr)	10		1	1		10	4		3	3		4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.80	0.80	0.80	0.88	0.88	0.88	
Heavy Vehicles (%)	0%	1%	1%	0%	1%	1%	0%	0%	0%	0%	2%	2%	
Adj. Flow (vph)	121	614	791	148	1102	81	129	84	79	84	241	74	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	121	614	791	148	1183	0	129	163	0	84	315	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)		24			10			10			10		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.09	1.09	1.04	1.04	1.09	0.96	0.96	1.09	1.04	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
8: Scribner Avenue & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Number of Detectors	3	1	0	3	1		1	1		1	1		
Detector Template													
Leading Detector (ft)	27	166	0	34	171		19	19		28	28		
Trailing Detector (ft)	-6	160	0	-6	165		-9	-9		0	0		
Detector 1 Position(ft)	-6	160	0	-6	165		-9	-9		0	0		
Detector 1 Size(ft)	6	6	20	6	6		28	28		28	28		
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)	6			14									
Detector 2 Size(ft)	6			6									
Detector 2 Type	Cl+Ex			Cl+Ex									
Detector 2 Channel													
Detector 2 Extend (s)	0.0			0.0									
Detector 3 Position(ft)	21			28									
Detector 3 Size(ft)	6			6									
Detector 3 Type	Cl+Ex			Cl+Ex									
Detector 3 Channel													
Detector 3 Extend (s)	0.0			0.0									
Turn Type	Prot	NA	Free	Prot	NA		pm+pt	NA		custom	NA		
Protected Phases	1	6		5	2		4	8		4	7		3
Permitted Phases			Free				8			7 8	8		
Detector Phase	1	6		5	2		4	8		4	7		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	3.0		1.0
Minimum Split (s)	9.5	20.1		10.2	20.1		9.8	9.5		9.8	9.8		26.1
Total Split (s)	20.0	35.0		20.0	35.0		11.0	18.0		11.0	8.0		13.0
Total Split (%)	19.0%	33.3%		19.0%	33.3%		10.5%	17.1%		10.5%	7.6%		12%
Maximum Green (s)	15.7	29.9		14.9	29.9		6.2	13.5		6.2	3.2		8.9
Yellow Time (s)	3.0	3.9		3.9	3.9		3.0	3.0		3.0	3.0		4.0
All-Red Time (s)	1.3	1.2		1.2	1.2		1.8	1.5		1.8	1.8		0.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
8: Scribner Avenue & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Total Lost Time (s)	4.3	5.1		5.1	5.1		4.8	4.5		4.8	4.8		
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lag	Lead		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)	1.5	2.5		1.5	2.5		1.5	1.5		1.5	1.5		0.2
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													15.0
Pedestrian Calls (#/hr)													12
Act Effct Green (s)	11.4	35.4	105.0	12.3	37.1		17.9	10.7		32.3	24.8		
Actuated g/C Ratio	0.11	0.34	1.00	0.12	0.35		0.17	0.10		0.31	0.24		
v/c Ratio	0.66	0.53	0.54	0.75	0.98		0.59	0.75		0.45	0.75		
Control Delay	51.8	40.6	3.9	67.9	53.6		40.2	55.8		33.1	49.4		
Queue Delay	0.0	0.0	0.0	0.0	12.1		3.6	0.0		0.0	0.0		
Total Delay	51.8	40.6	3.9	67.9	65.8		43.8	55.8		33.1	49.5		
LOS	D	D	A	E	E		D	E		C	D		
Approach Delay		22.5			66.0			50.5			46.0		
Approach LOS		C			E			D			D		
Queue Length 50th (ft)	82	220	221	90	~455		54	82		34	180		
Queue Length 95th (ft)	135	287	492	m163	#670		99	129		77	#343		
Internal Link Dist (ft)		402			693			491			597		
Turn Bay Length (ft)	230			540			90			144			
Base Capacity (vph)	251	1165	1462	239	1210		220	264		187	418		
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0		
Spillback Cap Reductn	0	0	0	0	58		39	0		0	1		
Storage Cap Reductn	0	0	0	0	0		0	0		0	0		
Reduced v/c Ratio	0.48	0.53	0.54	0.62	1.03		0.71	0.62		0.45	0.76		
Intersection Summary													
Area Type:	Other												
Cycle Length:	105												
Actuated Cycle Length:	105												
Offset:	64 (61%), Referenced to phase 2:WBT, Start of Green												
Natural Cycle:	140												
Control Type:	Actuated-Coordinated												

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings

8: Scribner Avenue & US Route 1

09/16/2024

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 43.8

Intersection LOS: D

Intersection Capacity Utilization 74.2%

ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

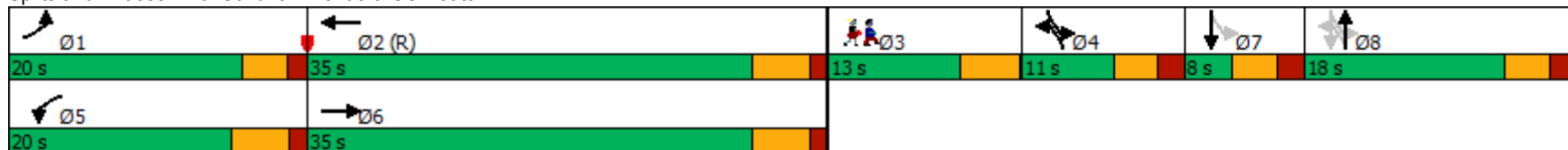
Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 8: Scribner Avenue & US Route 1



Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	618	102	232	580	42	617	23	302	0	8	54
Future Volume (vph)	7	618	102	232	580	42	617	23	302	0	8	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	10	11	11	12	12	15	10	10	16
Storage Length (ft)	0		0	550		0	0		0	0		0
Storage Lanes	0		0	1		0	2		0	0		1
Taper Length (ft)	25			100			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.979			0.990			0.861				0.850
Flt Protected		0.999		0.950			0.950					
Satd. Flow (prot)	0	3369	0	1620	3416	0	3400	1636	0	0	1773	1830
Flt Permitted		0.947		0.247			0.950					
Satd. Flow (perm)	0	3193	0	421	3416	0	3400	1636	0	0	1773	1830
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			8			325				125
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		773			955			578			162	
Travel Time (s)		17.6			21.7			13.1			3.7	
Confl. Peds. (#/hr)	18		2			18						
Confl. Bikes (#/hr)					1							
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.93	0.93	0.93	0.83	0.83	0.83
Heavy Vehicles (%)	0%	1%	1%	4%	1%	0%	3%	0%	0%	0%	0%	0%
Adj. Flow (vph)	8	679	112	258	644	47	663	25	325	0	10	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	799	0	258	691	0	663	350	0	0	10	65
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)		10			10			40			40	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	1.00	1.00	0.88	1.09	1.09	0.85

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

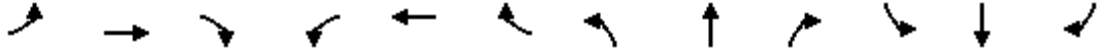
Synchro 11 Report

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Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		3	1		3	3		1	2	2
Detector Template	Left						Left					
Leading Detector (ft)	20	215		29	206		36	35		20	18	18
Trailing Detector (ft)	0	209		-5	200		0	-7		0	-2	-2
Detector 1 Position(ft)	0	209		-5	200		0	-7		0	-2	-2
Detector 1 Size(ft)	20	6		6	6		6	6		20	6	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)				9			15	12			12	12
Detector 2 Size(ft)				6			6	6			6	6
Detector 2 Type				Cl+Ex			Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)				0.0			0.0	0.0			0.0	0.0
Detector 3 Position(ft)				23			30	29				
Detector 3 Size(ft)				6			6	6				
Detector 3 Type				Cl+Ex			Cl+Ex	Cl+Ex				
Detector 3 Channel												
Detector 3 Extend (s)				0.0			0.0	0.0				
Turn Type	Perm	NA		pm+pt	NA		Split	NA			NA	Perm
Protected Phases		2		1	2		4	4		8	8	
Permitted Phases	2			2								8
Detector Phase	2	2		1	2		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		5.0	15.0		9.0	9.0		5.0	5.0	5.0
Minimum Split (s)	21.7	21.7		9.0	21.7		21.3	21.3		9.0	9.0	9.0
Total Split (s)	42.0	42.0		17.0	42.0		34.0	34.0		12.0	12.0	12.0
Total Split (%)	40.0%	40.0%		16.2%	40.0%		32.4%	32.4%		11.4%	11.4%	11.4%
Maximum Green (s)	35.3	35.3		13.0	35.3		29.7	29.7		8.0	8.0	8.0
Yellow Time (s)	4.4	4.4		3.0	4.4		3.3	3.3		3.0	3.0	3.0
All-Red Time (s)	2.3	2.3		1.0	2.3		1.0	1.0		1.0	1.0	1.0

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)		6.7		4.0	6.7		4.3	4.3			4.0	4.0
Lead/Lag	Lag	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	2.5	2.5		1.5	2.5		2.0	2.0		1.5	1.5	1.5
Recall Mode	C-Min	C-Min		None	C-Min		None	None		None	None	None
Walk Time (s)							16.0	16.0				
Flash Dont Walk (s)							1.0	1.0				
Pedestrian Calls (#/hr)							20	20				
Act Effct Green (s)		42.9		60.0	42.9		25.2	25.2			5.2	5.2
Actuated g/C Ratio		0.41		0.57	0.41		0.24	0.24			0.05	0.05
v/c Ratio		0.61		0.64	0.49		0.81	0.55			0.11	0.31
Control Delay		20.1		18.9	26.1		46.0	8.1			50.4	3.9
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0	0.0
Total Delay		20.1		18.9	26.1		46.0	8.1			50.4	3.9
LOS		C		B	C		D	A			D	A
Approach Delay		20.1			24.1			32.9			10.1	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		276		79	186		215	13			7	0
Queue Length 95th (ft)		338		141	260		268	84			22	0
Internal Link Dist (ft)		693			875			498			82	
Turn Bay Length (ft)				550								
Base Capacity (vph)		1316		413	1401		961	695			135	254
Starvation Cap Reductn		0		0	0		0	0			0	0
Spillback Cap Reductn		0		0	0		0	0			0	0
Storage Cap Reductn		0		0	0		0	0			0	0
Reduced v/c Ratio		0.61		0.62	0.49		0.69	0.50			0.07	0.26

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 105

Offset: 34 (32%), Referenced to phase 2:EBWB, Start of Yellow

Natural Cycle: 70

Lanes, Volumes, Timings

9: I-95 Ramps/Global Gas Driveway & US Route 1

09/16/2024

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 25.8

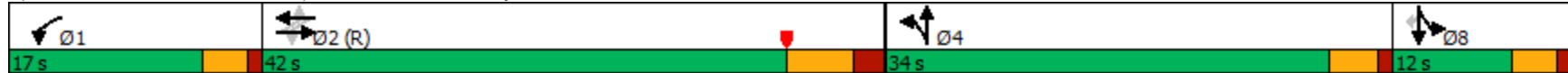
Intersection LOS: C

Intersection Capacity Utilization 77.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 9: I-95 Ramps/Global Gas Driveway & US Route 1



Lanes, Volumes, Timings
10: Taylor Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	108	656	171	76	702	3	81	39	63	98	64	69	
Future Volume (vph)	108	656	171	76	702	3	81	39	63	98	64	69	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	14	14	14	12	12	12	
Storage Length (ft)	155		0	140		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	100			70			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			0.99			0.99		
Frt		0.969			0.999			0.953			0.960		
Flt Protected	0.950			0.950				0.978			0.979		
Satd. Flow (prot)	1685	3327	0	1685	3437	0	0	1875	0	0	1779	0	
Flt Permitted	0.264			0.205				0.702			0.739		
Satd. Flow (perm)	467	3327	0	363	3437	0	0	1346	0	0	1339	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		41						34			28		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		955			301			227			157		
Travel Time (s)		21.7			6.8			5.2			3.6		
Confl. Peds. (#/hr)	9		5	5		9	1		8	8		1	
Confl. Bikes (#/hr)											1		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.78	0.78	0.78	0.85	0.85	0.85	
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	2	0	0	0	0	0	0	0	
Adj. Flow (vph)	121	737	192	85	789	3	104	50	81	115	75	81	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	121	929	0	85	792	0	0	235	0	0	271	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)		12			12			0			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

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Lanes, Volumes, Timings
10: Taylor Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Headway Factor	1.09	1.04	1.04	1.09	1.05	1.04	0.92	0.92	0.92	1.00	1.00	1.00	
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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		3
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		9.0	9.0		9.0	9.0		1.0
Minimum Split (s)	10.0	20.7		9.5	20.7		14.8	14.8		14.8	14.8		26.0
Total Split (s)	10.0	24.0		10.0	24.0		25.0	25.0		25.0	25.0		16.0
Total Split (%)	13.3%	32.0%		13.3%	32.0%		33.3%	33.3%		33.3%	33.3%		21%
Maximum Green (s)	6.0	18.3		6.0	18.3		19.2	19.2		19.2	19.2		12.0
Yellow Time (s)	3.0	4.1		3.0	4.1		3.6	3.6		3.6	3.6		4.0
All-Red Time (s)	1.0	1.6		1.0	1.6		2.2	2.2		2.2	2.2		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	4.0	5.7		4.0	5.7			5.8			5.8		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?	Yes	Yes		Yes	Yes								

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
10: Taylor Ave & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Vehicle Extension (s)	1.5	2.5		1.5	2.5		2.0	2.0		2.0	2.0		0.2
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													15.0
Pedestrian Calls (#/hr)													15
Act Effct Green (s)	41.9	35.3		41.2	34.9			17.2			17.2		
Actuated g/C Ratio	0.56	0.47		0.55	0.47			0.23			0.23		
v/c Ratio	0.34	0.59		0.29	0.49			0.70			0.82		
Control Delay	12.4	20.3		12.5	18.2			33.9			45.5		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	12.4	20.3		12.5	18.2			33.9			45.5		
LOS	B	C		B	B			C			D		
Approach Delay		19.4			17.6			33.9			45.5		
Approach LOS		B			B			C			D		
Queue Length 50th (ft)	20	150		9	72			84			105		
Queue Length 95th (ft)	68	#366		m44	#278			128			#195		
Internal Link Dist (ft)		875			221			147			77		
Turn Bay Length (ft)	155			140									
Base Capacity (vph)	364	1586		308	1600			380			374		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.33	0.59		0.28	0.49			0.62			0.72		
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 27 (36%), Referenced to phase 2:WBTL, Start of Yellow													
Natural Cycle: 90													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.82													
Intersection Signal Delay: 23.0							Intersection LOS: C						
Intersection Capacity Utilization 57.2%							ICU Level of Service B						

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings 10: Taylor Ave & US Route 1

09/16/2024

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 10: Taylor Ave & US Route 1

 Ø1 10 s	 Ø2 (R) 24 s	 Ø3 16 s	 Ø4 25 s
 Ø5 10 s	 Ø6 24 s		

Lanes, Volumes, Timings
11: Cedar Street & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	58	590	169	65	714	11	239	43	43	11	36	68	
Future Volume (vph)	58	590	169	65	714	11	239	43	43	11	36	68	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	12	16	16	14	14	14	
Storage Length (ft)	0		0	260		0	250		0	0		0	
Storage Lanes	1		0	1		0	1		0	0		0	
Taper Length (ft)	25			90			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		0.99	0.99			0.98		
Frt		0.967			0.998			0.925			0.920		
Flt Protected	0.950			0.950			0.950				0.995		
Satd. Flow (prot)	1685	3296	0	1685	3433	0	1805	1935	0	0	1597	0	
Flt Permitted	0.278			0.227			0.672				0.971		
Satd. Flow (perm)	491	3296	0	402	3433	0	1261	1935	0	0	1558	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		48			2			54			89		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		98			473			371			196		
Travel Time (s)		2.2			10.8			8.4			4.5		
Confl. Peds. (#/hr)	10		3	3		10	16		2	2		16	
Confl. Bikes (#/hr)					1								
Peak Hour Factor	0.93	0.93	0.93	0.94	0.94	0.94	0.80	0.80	0.80	0.76	0.76	0.76	
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	0%	0%	2%	0%	0%	0%	
Bus Blockages (#/hr)	0	4	0	0	2	0	0	3	0	0	0	0	
Parking (#/hr)											5		
Adj. Flow (vph)	62	634	182	69	760	12	299	54	54	14	47	89	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	62	816	0	69	772	0	299	108	0	0	150	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)		12			12			12			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
11: Cedar Street & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Two way Left Turn Lane													
Headway Factor	1.09	1.06	1.04	1.09	1.05	1.04	1.00	0.86	0.85	0.92	1.09	0.92	
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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		3
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		9.0	9.0		9.0	9.0		1.0
Minimum Split (s)	9.0	20.9		9.0	20.9		14.7	14.7		14.7	14.7		31.0
Total Split (s)	11.0	26.0		11.0	26.0		28.0	28.0		28.0	28.0		10.0
Total Split (%)	14.7%	34.7%		14.7%	34.7%		37.3%	37.3%		37.3%	37.3%		13%
Maximum Green (s)	7.0	20.1		7.0	20.1		22.3	22.3		22.3	22.3		6.0
Yellow Time (s)	3.0	4.1		3.0	4.1		3.6	3.6		3.6	3.6		4.0
All-Red Time (s)	1.0	1.8		1.0	1.8		2.1	2.1		2.1	2.1		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0			0.0		
Total Lost Time (s)	4.0	5.9		4.0	5.9		5.7	5.7			5.7		
Lead/Lag	Lead	Lag		Lead	Lag								

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
11: Cedar Street & US Route 1

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lead-Lag Optimize?	Yes	Yes		Yes	Yes								
Vehicle Extension (s)	1.5	2.5		1.5	2.5		2.0	2.0		2.0	2.0		3.0
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													19.0
Pedestrian Calls (#/hr)													20
Act Effct Green (s)	37.9	31.3		38.9	33.2		20.1	20.1			20.1		
Actuated g/C Ratio	0.51	0.42		0.52	0.44		0.27	0.27			0.27		
v/c Ratio	0.18	0.58		0.22	0.51		0.89	0.19			0.31		
Control Delay	10.1	16.0		21.3	30.0		55.0	12.0			11.2		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0		
Total Delay	10.1	16.0		21.3	30.0		55.0	12.0			11.2		
LOS	B	B		C	C		D	B			B		
Approach Delay		15.6			29.3			43.6			11.2		
Approach LOS		B			C			D			B		
Queue Length 50th (ft)	9	62		25	200		126	18			20		
Queue Length 95th (ft)	m22	#256		m51	#282		#207	44			46		
Internal Link Dist (ft)		18			393			291			116		
Turn Bay Length (ft)				260			250						
Base Capacity (vph)	365	1405		330	1521		375	614			526		
Starvation Cap Reductn	0	0		0	0		0	0			0		
Spillback Cap Reductn	0	0		0	0		0	0			0		
Storage Cap Reductn	0	0		0	0		0	0			0		
Reduced v/c Ratio	0.17	0.58		0.21	0.51		0.80	0.18			0.29		
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 27 (36%), Referenced to phase 2:WBTL, Start of Yellow													
Natural Cycle: 100													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.89													
Intersection Signal Delay: 25.4	Intersection LOS: C												

Lanes, Volumes, Timings

11: Cedar Street & US Route 1

09/16/2024

Intersection Capacity Utilization 58.9%

ICU Level of Service B

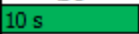
Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

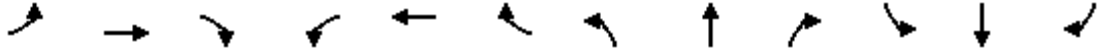
Splits and Phases: 11: Cedar Street & US Route 1

 Ø1  11 s	 Ø2 (R)  26 s	 Ø3  10 s	 Ø4  28 s
 Ø5  11 s	 Ø6  26 s		

Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

														
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3	Ø7
Lane Configurations														
Traffic Volume (vph)	99	454	65	44	536	28	211	89	99	55	49	89		
Future Volume (vph)	99	454	65	44	536	28	211	89	99	55	49	89		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width (ft)	10	11	11	10	11	11	11	13	13	10	10	12		
Storage Length (ft)	290		0	50		0	0		0	105		105		
Storage Lanes	1		0	1		0	1		0	1		1		
Taper Length (ft)	25			50			25			85				
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	1.00		1.00	1.00		1.00	0.99		1.00		0.98		
Frt		0.981			0.993			0.921				0.850		
Flt Protected	0.950			0.950			0.950			0.950				
Satd. Flow (prot)	1685	3336	0	1685	3380	0	1745	1776	0	1685	1739	1615		
Flt Permitted	0.235			0.345			0.721			0.620				
Satd. Flow (perm)	416	3336	0	611	3380	0	1321	1776	0	1096	1739	1586		
Right Turn on Red			Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)		17			5			77				323		
Link Speed (mph)		30			30			30			30			
Link Distance (ft)		429			489			381			333			
Travel Time (s)		9.8			11.1			8.7			7.6			
Confl. Peds. (#/hr)	1		1	1		1	3		3	3		3		
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.85	0.85	0.85	0.89	0.89	0.89		
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	2%	0%	2%	0%		
Bus Blockages (#/hr)	0	7	0	0	7	0	0	0	0	0	0	0		
Adj. Flow (vph)	110	504	72	46	564	29	248	105	116	62	55	100		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	110	576	0	46	593	0	248	221	0	62	55	100		
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)		12			15			11			11			
Link Offset(ft)		0			0			0			0			
Crosswalk Width(ft)		16			16			16			16			
Two way Left Turn Lane														
Headway Factor	1.09	1.06	1.04	1.09	1.06	1.04	1.04	0.96	0.96	1.09	1.09	1.00		

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

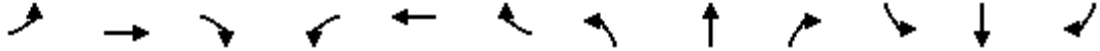
Synchro 11 Report

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Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

													Ø3	Ø7
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Turning Speed (mph)	15		9	15		9	15		9	15		9		
Number of Detectors	1	2		1	2		1	2		1	2	1		
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right		
Leading Detector (ft)	20	100		20	100		20	100		20	100	20		
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0		
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0		
Detector 1 Size(ft)	20	6		20	6		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		
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)		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		D.P+P	NA		pm+pt	NA	Perm		
Protected Phases	1	6		5	2		4 7	7 8		4	8		3	7
Permitted Phases	6			2			8			8		8		
Detector Phase	1	6		5	2		7	8		4	8	8		
Switch Phase														
Minimum Initial (s)	5.0	15.0		5.0	15.0					5.0	10.0	10.0	1.0	5.0
Minimum Split (s)	9.5	21.2		9.5	21.2					12.0	15.5	15.5	25.0	10.7
Total Split (s)	11.0	14.0		11.0	14.0					11.0	17.0	17.0	10.0	12.0
Total Split (%)	14.7%	18.7%		14.7%	18.7%					14.7%	22.7%	22.7%	13%	16%
Maximum Green (s)	7.0	7.8		7.0	7.8					5.5	11.5	11.5	6.0	6.5
Yellow Time (s)	3.0	4.1		3.0	4.1					3.3	3.3	3.3	4.0	3.3
All-Red Time (s)	1.0	2.1		1.0	2.1					2.2	2.2	2.2	0.0	2.2
Lost Time Adjust (s)	0.0	0.0		0.0	0.0					0.0	0.0	0.0		
Total Lost Time (s)	4.0	6.2		4.0	6.2					5.5	5.5	5.5		
Lead/Lag	Lead	Lag		Lead	Lag						Lag	Lag		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes						Yes	Yes		Yes
Vehicle Extension (s)	1.5	2.5		1.5	2.5					2.0	2.0	2.0	3.0	2.0

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

														
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3	Ø7
Recall Mode	None	Min		None	C-Min					None	None	None	None	None
Walk Time (s)													7.0	
Flash Dont Walk (s)													14.0	
Pedestrian Calls (#/hr)													8	
Act Effct Green (s)	31.9	25.1		29.2	22.3		24.6	23.2		15.8	10.1	10.1		
Actuated g/C Ratio	0.43	0.33		0.39	0.30		0.33	0.31		0.21	0.13	0.13		
v/c Ratio	0.38	0.51		0.14	0.59		0.48	0.37		0.23	0.24	0.20		
Control Delay	31.1	34.8		7.6	25.8		18.5	15.2		16.5	31.7	0.9		
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0		
Total Delay	31.1	34.8		7.6	25.8		18.5	15.2		16.5	31.7	0.9		
LOS	C	C		A	C		B	B		B	C	A		
Approach Delay	34.2				24.5		16.9				13.2			
Approach LOS	C				C		B				B			
Queue Length 50th (ft)	24	80		14	115		73	52		16	23	0		
Queue Length 95th (ft)	m93	#311		m5	#322		113	97		36	55	0		
Internal Link Dist (ft)	349				409		301				253			
Turn Bay Length (ft)	290			50						105		105		
Base Capacity (vph)	302	1128		348	1010		517	633		277	266	516		
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0		
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0		
Storage Cap Reductn	0	0		0	0		0	0		0	0	0		
Reduced v/c Ratio	0.36	0.51		0.13	0.59		0.48	0.35		0.22	0.21	0.19		
Intersection Summary														
Area Type:	Other													
Cycle Length: 75														
Actuated Cycle Length: 75														
Offset: 27 (36%), Referenced to phase 2:WBTL, Start of Yellow														
Natural Cycle: 95														
Control Type: Actuated-Coordinated														
Maximum v/c Ratio: 0.59														
Intersection Signal Delay: 24.8					Intersection LOS: C									
Intersection Capacity Utilization 58.9%					ICU Level of Service B									
Analysis Period (min) 15														

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Lanes, Volumes, Timings

12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

09/16/2024

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 12: Fairfield Ave/Clinton Ave & US Route 1/Connecticut Ave

 Ø1	 Ø2 (R) 	 Ø3	 Ø4	 Ø7	 Ø8
11 s	14 s	10 s	11 s	12 s	17 s
 Ø5	 Ø6				
11 s	14 s				

Lanes, Volumes, Timings
13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

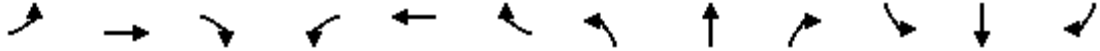
													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	77	545	23	49	628	33	18	28	53	20	41	39	
Future Volume (vph)	77	545	23	49	628	33	18	28	53	20	41	39	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	11	10	11	11	14	14	14	14	14	14	
Storage Length (ft)	0		0	65		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	0			160			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	1.00		1.00	1.00			0.99			0.99		
Frt		0.994			0.992			0.927			0.947		
Flt Protected	0.950			0.950				0.991			0.990		
Satd. Flow (prot)	1685	3431	0	1685	3425	0	0	1843	0	0	1636	0	
Flt Permitted	0.326			0.421				0.937			0.930		
Satd. Flow (perm)	577	3431	0	744	3425	0	0	1742	0	0	1535	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		5			7			58			35		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		291			405			209			244		
Travel Time (s)		6.6			9.2			4.8			5.5		
Confl. Peds. (#/hr)	3		5	5		3	1		3	3		1	
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.92	0.92	0.92	0.96	0.96	0.96	
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	2%	5%	
Parking (#/hr)											2		
Adj. Flow (vph)	83	586	25	56	714	38	20	30	58	21	43	41	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	83	611	0	56	752	0	0	108	0	0	105	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)		10			16			0			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.04	1.04	1.09	1.04	1.04	0.92	0.92	0.92	0.92	1.07	0.92	

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
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	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA		
Protected Phases	1	6		5	2			4			4		3
Permitted Phases	6			2			4			4			
Detector Phase	1	6		5	2		4	4		4	4		
Switch Phase													
Minimum Initial (s)	5.0	15.0		5.0	15.0		5.0	5.0		5.0	5.0		1.0
Minimum Split (s)	9.0	22.0		9.0	22.0		11.2	11.2		11.2	11.2		25.0
Total Split (s)	10.0	24.0		10.0	24.0		16.0	16.0		16.0	16.0		25.0
Total Split (%)	13.3%	32.0%		13.3%	32.0%		21.3%	21.3%		21.3%	21.3%		33%
Maximum Green (s)	6.0	17.0		6.0	17.0		9.8	9.8		9.8	9.8		21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0		4.0	4.0		4.0
All-Red Time (s)	1.0	3.0		1.0	3.0		2.2	2.2		2.2	2.2		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	4.0	7.0		4.0	7.0			6.2			6.2		
Lead/Lag	Lead	Lag		Lead	Lag								
Lead-Lag Optimize?	Yes	Yes		Yes	Yes								
Vehicle Extension (s)	1.5	2.5		1.5	2.5		2.0	2.0		2.0	2.0		0.2

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Recall Mode	None	Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													14.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)	52.0	47.1		51.1	45.3			7.7			7.7		
Actuated g/C Ratio	0.69	0.63		0.68	0.60			0.10			0.10		
v/c Ratio	0.17	0.28		0.10	0.36			0.47			0.56		
Control Delay	7.6	12.8		9.9	15.9			23.3			33.5		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	7.6	12.8		9.9	15.9			23.3			33.5		
LOS	A	B		A	B			C			C		
Approach Delay		12.2			15.4			23.3			33.5		
Approach LOS		B			B			C			C		
Queue Length 50th (ft)	1	91		7	111			22			31		
Queue Length 95th (ft)	m68	#215		38	#295			65			76		
Internal Link Dist (ft)		211			325			129			164		
Turn Bay Length (ft)				65									
Base Capacity (vph)	491	2158		587	2069			278			231		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.17	0.28		0.10	0.36			0.39			0.45		
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 64 (85%), Referenced to phase 2:WBTL, Start of Green													
Natural Cycle: 70													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.56													
Intersection Signal Delay: 15.7				Intersection LOS: B									
Intersection Capacity Utilization 44.9%				ICU Level of Service A									
Analysis Period (min) 15													

Lanes, Volumes, Timings

13: Stuart Ave & US Route 1/Van Buren Ave

09/16/2024

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 13: Stuart Ave & US Route 1/Van Buren Ave

 Ø1  10 s  	 Ø2 (R)  24 s  	 Ø3  25 s  	 Ø4  16 s  
 Ø5  10 s  	 Ø6  24 s  		

Lanes, Volumes, Timings
14: Van Buren Ave & Connecticut Ave

09/16/2024

							Ø3
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Lane Configurations	←←	→	→→	←	←	→→	
Traffic Volume (vph)	206	77	405	181	55	468	
Future Volume (vph)	206	77	405	181	55	468	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	12	10	10	10	10	
Lane Util. Factor	0.97	1.00	0.95	0.95	0.95	0.95	
Ped Bike Factor			0.99			1.00	
Frt		0.850	0.954				
Flt Protected	0.950					0.995	
Satd. Flow (prot)	3385	1615	3158	0	0	3323	
Flt Permitted	0.950					0.841	
Satd. Flow (perm)	3385	1615	3158	0	0	2808	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)		93	96				
Link Speed (mph)	30		30			30	
Link Distance (ft)	369		768			690	
Travel Time (s)	8.4		17.5			15.7	
Confl. Peds. (#/hr)				3	3		
Peak Hour Factor	0.83	0.83	0.94	0.94	0.93	0.93	
Heavy Vehicles (%)	0%	0%	1%	1%	0%	1%	
Adj. Flow (vph)	248	93	431	193	59	503	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	248	93	624	0	0	562	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Right	Left	Left	
Median Width(ft)	22		0			0	
Link Offset(ft)	0		0			0	
Crosswalk Width(ft)	16		16			16	
Two way Left Turn Lane							
Headway Factor	1.04	1.00	1.09	1.09	1.09	1.09	
Turning Speed (mph)	15	9		9	15		
Number of Detectors	1	1	2		1	2	
Detector Template	Left	Right	Thru		Left	Thru	
Leading Detector (ft)	20	20	100		20	100	

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
14: Van Buren Ave & Connecticut Ave

09/16/2024

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	20	6		20	6	
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	Prot	pm+ov	NA		pm+pt	NA	
Protected Phases	8	5	6		5	2	3
Permitted Phases		8			2		
Detector Phase	8	5	6		5	2	
Switch Phase							
Minimum Initial (s)	10.0	5.0	15.0		5.0	15.0	5.0
Minimum Split (s)	14.6	8.7	20.5		8.7	20.5	25.0
Total Split (s)	23.0	13.0	27.0		13.0	27.0	12.0
Total Split (%)	30.7%	17.3%	36.0%		17.3%	36.0%	16%
Maximum Green (s)	18.4	9.3	21.5		9.3	21.5	8.0
Yellow Time (s)	3.6	3.6	3.6		3.6	3.6	4.0
All-Red Time (s)	1.0	0.1	1.9		0.1	1.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0	
Total Lost Time (s)	4.6	3.7	5.5			5.5	
Lead/Lag		Lead	Lag		Lead		
Lead-Lag Optimize?		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	Min		None	C-Min	None
Walk Time (s)							7.0
Flash Dont Walk (s)							14.0
Pedestrian Calls (#/hr)							5

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings 14: Van Buren Ave & Connecticut Ave

09/16/2024

	↙	↖	↑	↗	↘	↓	
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø3
Act Effct Green (s)	11.3	21.5	43.8			51.2	
Actuated g/C Ratio	0.15	0.29	0.58			0.68	
v/c Ratio	0.49	0.18	0.33			0.29	
Control Delay	32.3	5.5	6.3			5.4	
Queue Delay	0.0	0.0	0.0			0.0	
Total Delay	32.3	5.5	6.3			5.4	
LOS	C	A	A			A	
Approach Delay	25.0		6.3			5.4	
Approach LOS	C		A			A	
Queue Length 50th (ft)	55	0	5			42	
Queue Length 95th (ft)	78	25	91			65	
Internal Link Dist (ft)	289		688			610	
Turn Bay Length (ft)							
Base Capacity (vph)	830	605	1883			1936	
Starvation Cap Reductn	0	0	0			0	
Spillback Cap Reductn	0	0	0			0	
Storage Cap Reductn	0	0	0			0	
Reduced v/c Ratio	0.30	0.15	0.33			0.29	

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 10.1

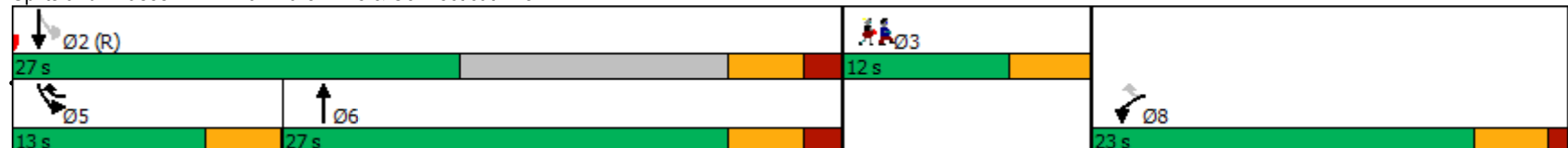
Intersection LOS: B

Intersection Capacity Utilization 53.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 14: Van Buren Ave & Connecticut Ave



Lanes, Volumes, Timings
15: Van Buren Ave & Maple St

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	109	64	64	33	59	29	78	361	52	40	432	79	
Future Volume (vph)	109	64	64	33	59	29	78	361	52	40	432	79	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	16	16	10	14	14	10	10	10	10	10	10	
Storage Length (ft)	0		0	311		0	0		0	0		0	
Storage Lanes	1		0	1		0	0		0	0		0	
Taper Length (ft)	130			100			25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	
Ped Bike Factor	1.00	0.99		0.99	0.99			1.00			1.00		
Frt		0.925			0.950			0.984			0.979		
Flt Protected	0.950			0.950				0.992			0.996		
Satd. Flow (prot)	1805	1948	0	1685	1889	0	0	3201	0	0	3220	0	
Flt Permitted	0.561			0.666				0.783			0.888		
Satd. Flow (perm)	1063	1948	0	1172	1889	0	0	2526	0	0	2870	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		60			30			20			24		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		109			722			690			1249		
Travel Time (s)		2.5			16.4			15.7			28.4		
Confl. Peds. (#/hr)	3		8	8		3	1		2	2		1	
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.96	0.96	0.96	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	2%	0%	0%	2%	0%	0%	2%	2%	0%	2%	1%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	4	0	0	0	0	
Adj. Flow (vph)	121	71	71	36	64	32	81	376	54	42	455	83	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	121	142	0	36	96	0	0	511	0	0	580	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)		12			12			0			0		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.00	0.85	0.85	1.09	0.92	0.92	1.09	1.10	1.09	1.09	1.09	1.09	

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
15: Van Buren Ave & Maple St

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
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	pm+pt	NA		pm+pt	NA		pm+pt	NA		Perm	NA		
Protected Phases	7	4		3	8		5	2			6		9
Permitted Phases	4			8			2			6			
Detector Phase	7	4		3	8		5	2		6	6		
Switch Phase													
Minimum Initial (s)	4.0	7.0		4.0	7.0		4.0	10.0		10.0	10.0		1.0
Minimum Split (s)	8.9	11.5		8.9	11.9		7.7	15.1		15.2	15.2		25.0
Total Split (s)	10.0	19.0		10.0	19.0		9.0	25.0		25.0	25.0		12.0
Total Split (%)	13.3%	25.3%		13.3%	25.3%		12.0%	33.3%		33.3%	33.3%		16%
Maximum Green (s)	5.1	14.5		5.1	14.1		5.3	19.9		19.8	19.8		8.0
Yellow Time (s)	3.4	3.4		3.4	3.4		3.6	3.6		3.6	3.6		4.0
All-Red Time (s)	1.5	1.1		1.5	1.5		0.1	1.5		1.6	1.6		0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0		
Total Lost Time (s)	4.9	4.5		4.9	4.9			5.1			5.2		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

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Lanes, Volumes, Timings
15: Van Buren Ave & Maple St

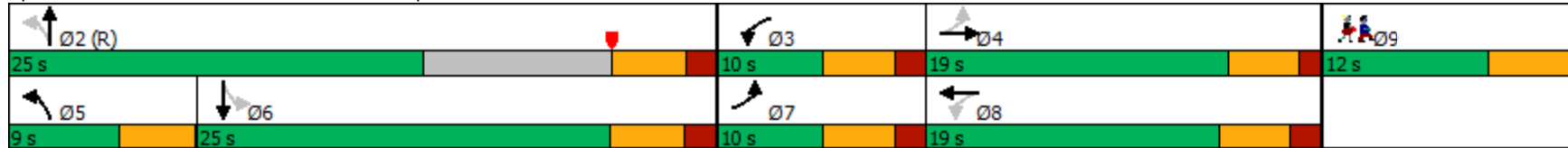
09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Recall Mode	None	None		None	None		None	C-Min		Min	Min		None
Walk Time (s)													7.0
Flash Dont Walk (s)													14.0
Pedestrian Calls (#/hr)													10
Act Effct Green (s)	16.5	12.5		13.7	8.7			43.4			43.3		
Actuated g/C Ratio	0.22	0.17		0.18	0.12			0.58			0.58		
v/c Ratio	0.39	0.38		0.14	0.39			0.35			0.35		
Control Delay	25.4	20.2		20.8	26.4			10.5			13.7		
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0		
Total Delay	25.4	20.2		20.8	26.4			10.5			13.7		
LOS	C	C		C	C			B			B		
Approach Delay		22.6			24.9			10.5			13.7		
Approach LOS		C			C			B			B		
Queue Length 50th (ft)	42	34		12	29			37			62		
Queue Length 95th (ft)	82	82		32	68			124			137		
Internal Link Dist (ft)		29			642			610			1169		
Turn Bay Length (ft)				311									
Base Capacity (vph)	307	458		255	379			1469			1667		
Starvation Cap Reductn	0	0		0	0			0			0		
Spillback Cap Reductn	0	0		0	0			0			0		
Storage Cap Reductn	0	0		0	0			0			0		
Reduced v/c Ratio	0.39	0.31		0.14	0.25			0.35			0.35		
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 27 (36%), Referenced to phase 2:NBTL, Start of Yellow													
Natural Cycle: 75													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.39													
Intersection Signal Delay: 15.2				Intersection LOS: B									
Intersection Capacity Utilization 58.2%				ICU Level of Service B									
Analysis Period (min) 15													

Lanes, Volumes, Timings 15: Van Buren Ave & Maple St

09/16/2024

Splits and Phases: 15: Van Buren Ave & Maple St



Lanes, Volumes, Timings
16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	66	14	177	46	169	9	375	51	163	350	41
Future Volume (vph)	79	66	14	177	46	169	9	375	51	163	350	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	16	10	12	12	10	11	11	10	10	12
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			0.98		1.00				1.00	
Frt		0.988			0.882			0.982			0.984	
Flt Protected		0.976		0.950			0.950			0.950		
Satd. Flow (prot)	0	2059	0	1685	1648	0	1685	1788	0	1685	1708	0
Flt Permitted		0.728		0.573			0.444			0.193		
Satd. Flow (perm)	0	1535	0	1016	1648	0	787	1788	0	342	1708	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			180			10			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		254			189			680			409	
Travel Time (s)		5.8			4.3			15.5			9.3	
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)								1			1	
Peak Hour Factor	0.88	0.88	0.88	0.94	0.94	0.94	0.86	0.86	0.86	0.83	0.83	0.83
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	1%	0%	0%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	2	0
Adj. Flow (vph)	90	75	16	188	49	180	10	436	59	196	422	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	181	0	188	229	0	10	495	0	196	471	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			50			20			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.85	0.85	0.85	1.09	1.00	1.00	1.09	1.04	1.04	1.09	1.10	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

																								
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR												
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		pm+pt	NA		pm+pt	NA		pm+pt	NA													
Protected Phases		4		3	8		5	2		1	6													
Permitted Phases	4			8			2			6														
Detector Phase	4	4		3	8		5	2		1	6													
Switch Phase																								
Minimum Initial (s)	10.0	10.0		5.0	10.0		4.0	15.0		4.0	15.0													
Minimum Split (s)	22.5	22.5		12.0	22.5		10.0	22.5		9.5	25.2													
Total Split (s)	23.0	23.0		12.0	23.0		10.0	30.0		10.0	30.0													
Total Split (%)	30.7%	30.7%		16.0%	30.7%		13.3%	40.0%		13.3%	40.0%													
Maximum Green (s)	18.3	18.3		8.7	18.3		4.7	24.8		4.7	24.8													
Yellow Time (s)	3.2	3.2		3.2	3.2		3.7	3.7		3.7	3.7													
All-Red Time (s)	1.5	1.5		0.1	1.5		1.6	1.5		1.6	1.5													
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0													
Total Lost Time (s)		4.7		3.3	4.7		5.3	5.2		5.3	5.2													
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag													
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0													
Recall Mode	None	None		None	None		None	C-Min		None	Min													
Walk Time (s)																								7.0

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report
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Lanes, Volumes, Timings
16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)											13.0	
Pedestrian Calls (#/hr)											5	
Act Effct Green (s)		13.9		27.3	25.9		31.3	25.9		38.0	37.2	
Actuated g/C Ratio		0.19		0.36	0.35		0.42	0.35		0.51	0.50	
v/c Ratio		0.63		0.42	0.33		0.03	0.79		0.62	0.55	
Control Delay		36.6		19.4	5.9		15.9	35.9		25.9	21.2	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		36.6		19.4	5.9		15.9	35.9		25.9	21.2	
LOS		D		B	A		B	D		C	C	
Approach Delay		36.6			12.0			35.5			22.6	
Approach LOS		D			B			D			C	
Queue Length 50th (ft)		76		62	15		2	201		56	159	
Queue Length 95th (ft)		125		99	55		14	#251		m#132	#316	
Internal Link Dist (ft)		174			109			600			329	
Turn Bay Length (ft)												
Base Capacity (vph)		379		449	773		393	624		316	851	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.48		0.42	0.30		0.03	0.79		0.62	0.55	
Intersection Summary												
Area Type:	Other											
Cycle Length: 75												
Actuated Cycle Length: 75												
Offset: 59 (79%), Referenced to phase 2:NBTL, Start of Green												
Natural Cycle: 75												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.79												
Intersection Signal Delay: 25.2							Intersection LOS: C					
Intersection Capacity Utilization 70.1%							ICU Level of Service C					
Analysis Period (min) 15												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

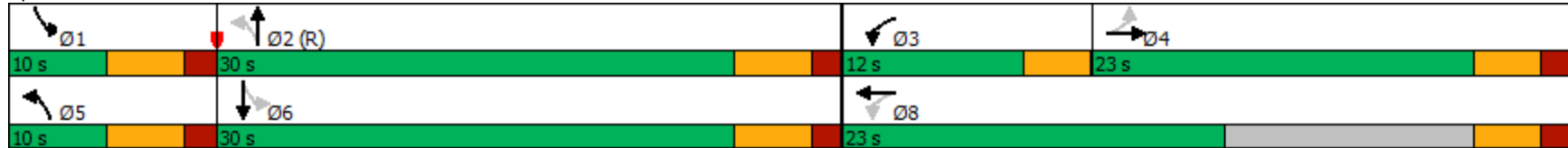
Lanes, Volumes, Timings

16: Van Buren Ave & Grandview Ave/US 7

09/16/2024

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

Splits and Phases: 16: Van Buren Ave & Grandview Ave/US 7



Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations													
Traffic Volume (vph)	10	79	27	358	150	68	10	172	426	49	168	1	
Future Volume (vph)	10	79	27	358	150	68	10	172	426	49	168	1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10	
Storage Length (ft)	0		60	0		0	120		115	80		0	
Storage Lanes	0		1	1		0	1		1	1		0	
Taper Length (ft)	25			25			80			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			0.99								
Frt			0.850		0.953				0.850		0.999		
Flt Protected		0.994		0.950			0.950			0.950			
Satd. Flow (prot)	0	1763	1507	1685	1666	0	1685	1742	1492	1685	1737	0	
Flt Permitted		0.000		0.688			0.553			0.611			
Satd. Flow (perm)	0	0	1507	1220	1666	0	981	1742	1492	1084	1737	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			154		34				453				
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		350			460			409			259		
Travel Time (s)		8.0			10.5			9.3			5.9		
Confl. Peds. (#/hr)	2					2							
Peak Hour Factor	0.83	0.83	0.83	0.79	0.79	0.79	0.94	0.94	0.94	0.76	0.76	0.76	
Heavy Vehicles (%)	0%	0%	0%	0%	1%	0%	0%	1%	1%	0%	2%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	2	0	0	0	0	
Adj. Flow (vph)	12	95	33	453	190	86	11	183	453	64	221	1	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	107	33	453	276	0	11	183	453	64	222	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			10			10			10		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.10	1.09	1.09	1.09	1.09	

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

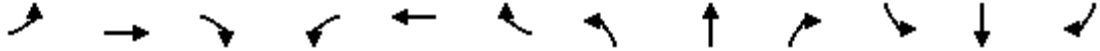
Synchro 11 Report

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Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2	1	1	2		
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru		
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100		
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	20	6		20	6	20	20	6		
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	custom	pm+pt	NA		Perm	NA	pm+ov	Perm	NA		
Protected Phases	7	4		8	4			2	8		6		3
Permitted Phases	4	7	4 7	4	8		2		2	6			
Detector Phase	7	4	4	8	4		2	2	8	6	6		
Switch Phase													
Minimum Initial (s)	5.0	7.0		7.0	7.0		15.0	15.0	7.0	15.0	15.0		1.0
Minimum Split (s)	10.7	12.7		12.0	12.7		19.6	19.6	12.0	19.6	19.6		26.0
Total Split (s)	11.0	13.0		20.0	13.0		19.0	19.0	20.0	19.0	19.0		12.0
Total Split (%)	14.7%	17.3%		26.7%	17.3%		25.3%	25.3%	26.7%	25.3%	25.3%		16%
Maximum Green (s)	5.3	7.3		15.0	7.3		14.4	14.4	15.0	14.4	14.4		8.0
Yellow Time (s)	3.7	3.7		3.5	3.7		3.6	3.6	3.5	3.6	3.6		4.0
All-Red Time (s)	2.0	2.0		1.5	2.0		1.0	1.0	1.5	1.0	1.0		0.0
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		5.7		5.0	5.7		4.6	4.6	5.0	4.6	4.6		
Lead/Lag		Lag		Lead	Lag				Lead				
Lead-Lag Optimize?		Yes		Yes	Yes				Yes				
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0

Existing Sat Balanced 8:49 pm 08/09/2024 Existing Sat Balanced

Synchro 11 Report

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Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Recall Mode	None	None		None	None		C-Min	C-Min	None	Min	Min		None
Walk Time (s)													7.0
Flash Dont Walk (s)													15.0
Pedestrian Calls (#/hr)													5
Act Effct Green (s)		8.1	8.1	30.8	35.1		27.2	27.2	52.8	27.2	27.2		
Actuated g/C Ratio		0.11	0.11	0.41	0.47		0.36	0.36	0.70	0.36	0.36		
v/c Ratio		0.57	0.11	0.71	0.35		0.03	0.29	0.38	0.16	0.35		
Control Delay		45.3	0.7	24.5	13.2		25.6	25.8	2.3	18.7	20.2		
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0	0.1	0.0	0.0		
Total Delay		45.3	0.7	24.5	13.2		25.6	25.8	2.4	18.7	20.2		
LOS		D	A	C	B		C	C	A	B	C		
Approach Delay		34.8			20.2			9.4			19.9		
Approach LOS		C			C			A			B		
Queue Length 50th (ft)		47	0	126	59		4	71	2	20	77		
Queue Length 95th (ft)		#100	0	#245	122		m8	m108	m71	40	109		
Internal Link Dist (ft)		270			380			329			179		
Turn Bay Length (ft)			60				120		115	80			
Base Capacity (vph)		191	300	636	798		356	632	1184	393	630		
Starvation Cap Reductn		0	0	0	0		0	0	153	0	0		
Spillback Cap Reductn		0	0	0	0		0	0	0	0	0		
Storage Cap Reductn		0	0	0	0		0	0	0	0	0		
Reduced v/c Ratio		0.56	0.11	0.71	0.35		0.03	0.29	0.44	0.16	0.35		
Intersection Summary													
Area Type:	Other												
Cycle Length: 75													
Actuated Cycle Length: 75													
Offset: 60 (80%), Referenced to phase 2:NBTL, Start of Green													
Natural Cycle: 85													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.71													
Intersection Signal Delay: 17.4							Intersection LOS: B						
Intersection Capacity Utilization 63.9%							ICU Level of Service B						
Analysis Period (min) 15													

Lanes, Volumes, Timings

17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

09/16/2024

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 17: Van Buren Ave/Riverside Ave & Spring Hill Ave/Belden Ave

 Ø2 (R)  19 s 	 Ø3  12 s 	 Ø8  20 s 	 Ø4  13 s 	 Ø7  11 s 
 Ø6  19 s 				



NORWALK

ROUTE 1 CORRIDOR MASTER PLAN STUDY

Connecticut Ave / Van Buren Ave

Appendix D: Supplemental Origin-Destination Maps

Figure 1. Work Locations of Study Area Trips

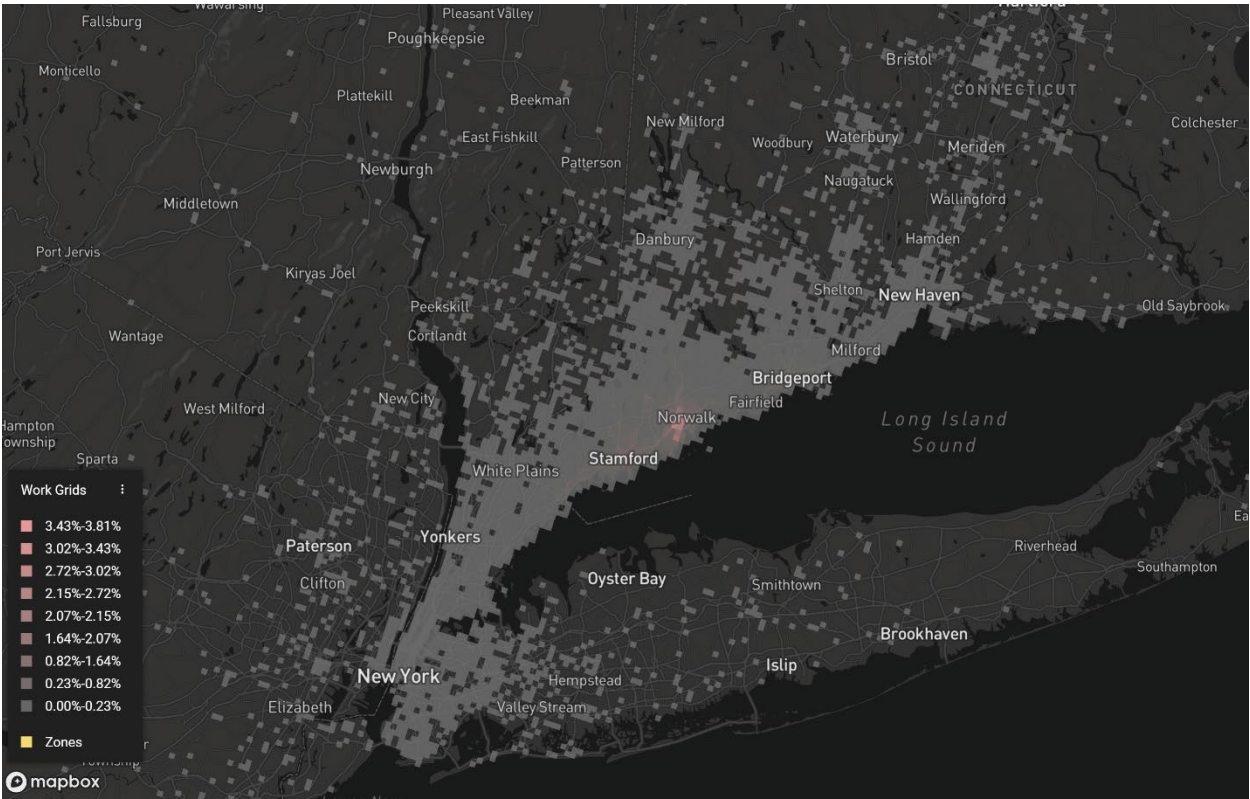


Figure 2. Outbound Routes - West of Exit 14

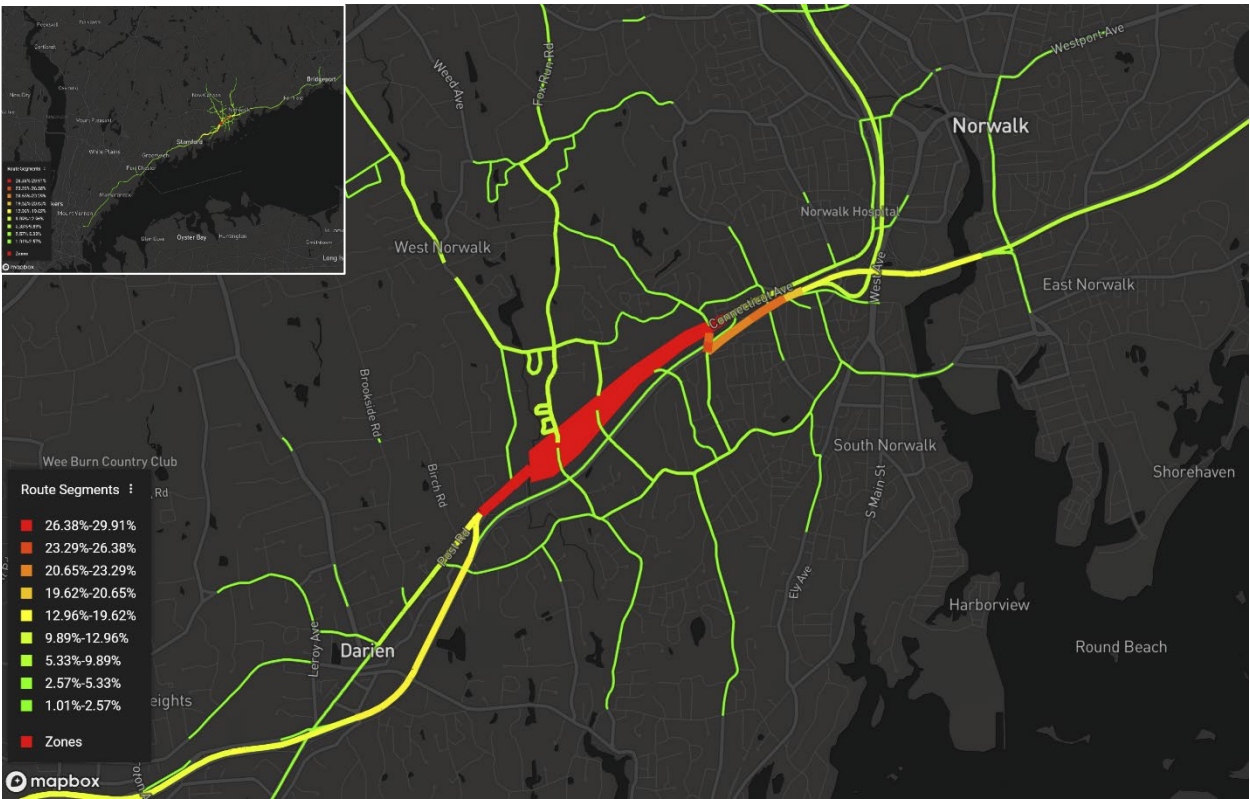
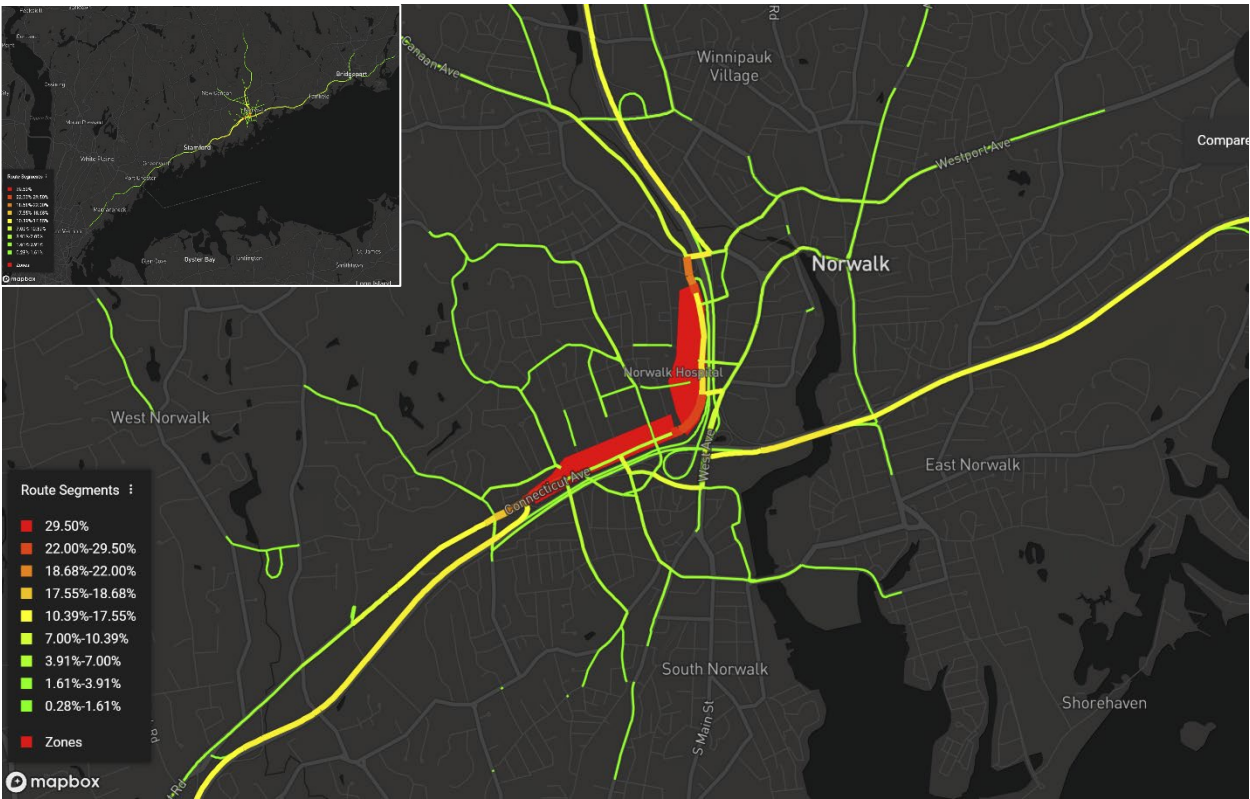


Figure 3. Outbound Routes - East of Exit 14





Appendix E

No Build Analysis Results

Future Travel Demand

To identify potential multimodal transportation improvements, the study team projected traffic to a “future design year”. The future design year is typically modeled at year 15 to 20 from the point of evaluation. In coordination with the Western Connecticut Council of Governments (WestCOG), the City of Norwalk, and the Connecticut Department of Transportation (CTDOT), the study team chose 2040 as the design year for the Route 1 Corridor Master Plan Study.

CTDOT provided the 2040 design year traffic volumes to the study team. These volumes serve as the basis to evaluate multimodal transportation improvements identified as part of the Study. The 2040 design year traffic volumes comprise two elements: anticipated background growth on study area roadways and projected traffic volumes from approved developments that are anticipated to be completed prior to the 2040 design year.

The background growth was determined using CTDOT’s regional travel demand model. This model is updated periodically and reflects the latest roadway improvements and socioeconomic and demographic projections for Norwalk and other municipalities in the region.

In addition, CTDOT includes traffic volumes from the following approved developments, which are anticipated to be completed prior to the 2040 design year:

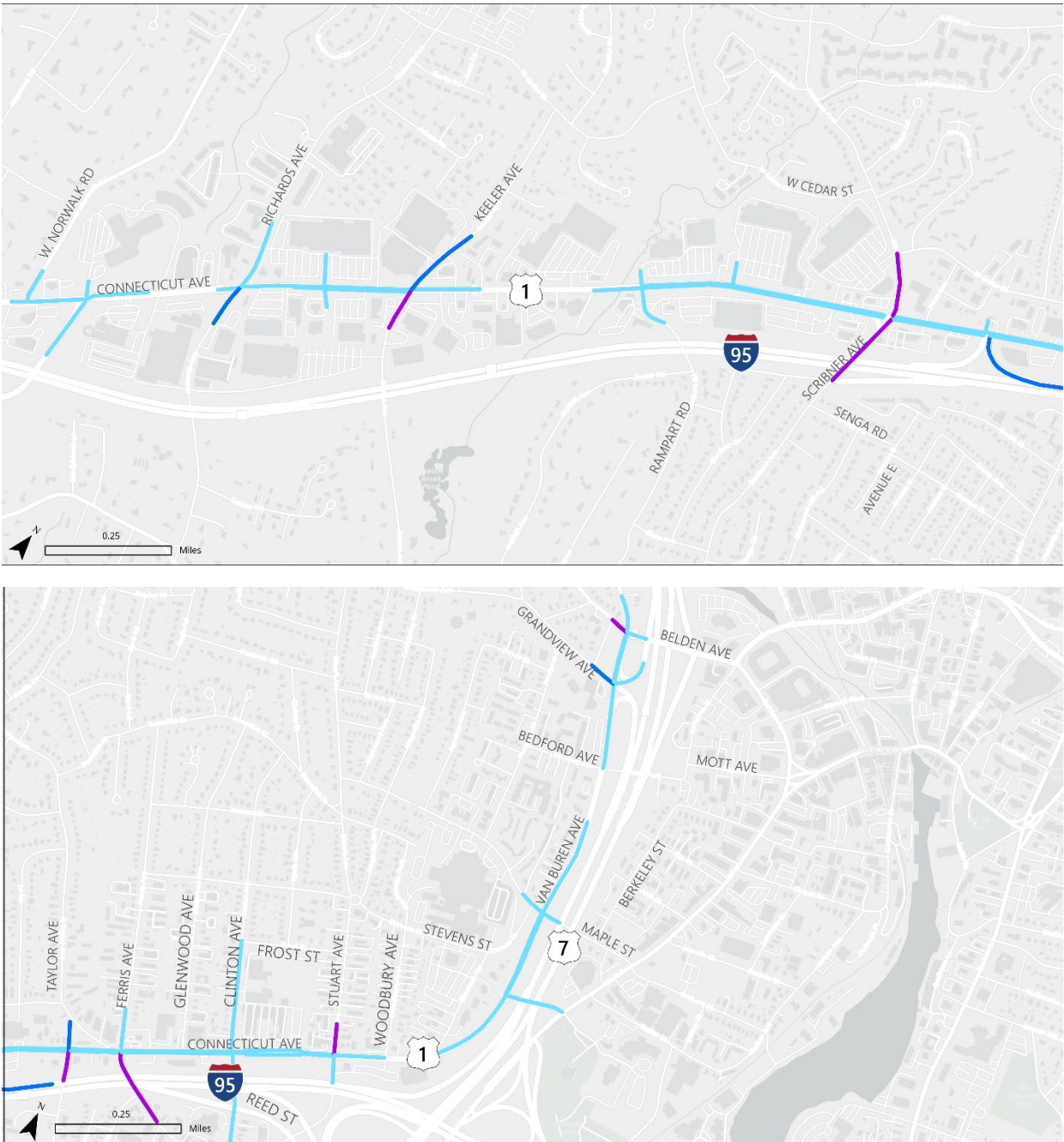
- 47 Richards Avenue and 677, 667, and 651 Connecticut Avenue: A proposed Wegmans grocery store and two additional retail buildings. The development will be accessible via Richards and Keeler Streets as well as directly from US Route 1 at the signalized driveway with the Target Shopping Plaza.
- 779 and 789 Connecticut Avenue: The expansion of the proposed Costco Parking Garage and a 14,000 square foot addition as well as relocation of the tire center.

The 2040 design year traffic volumes are presented in **Appendix F**.

Existing Conditions Traffic Operations

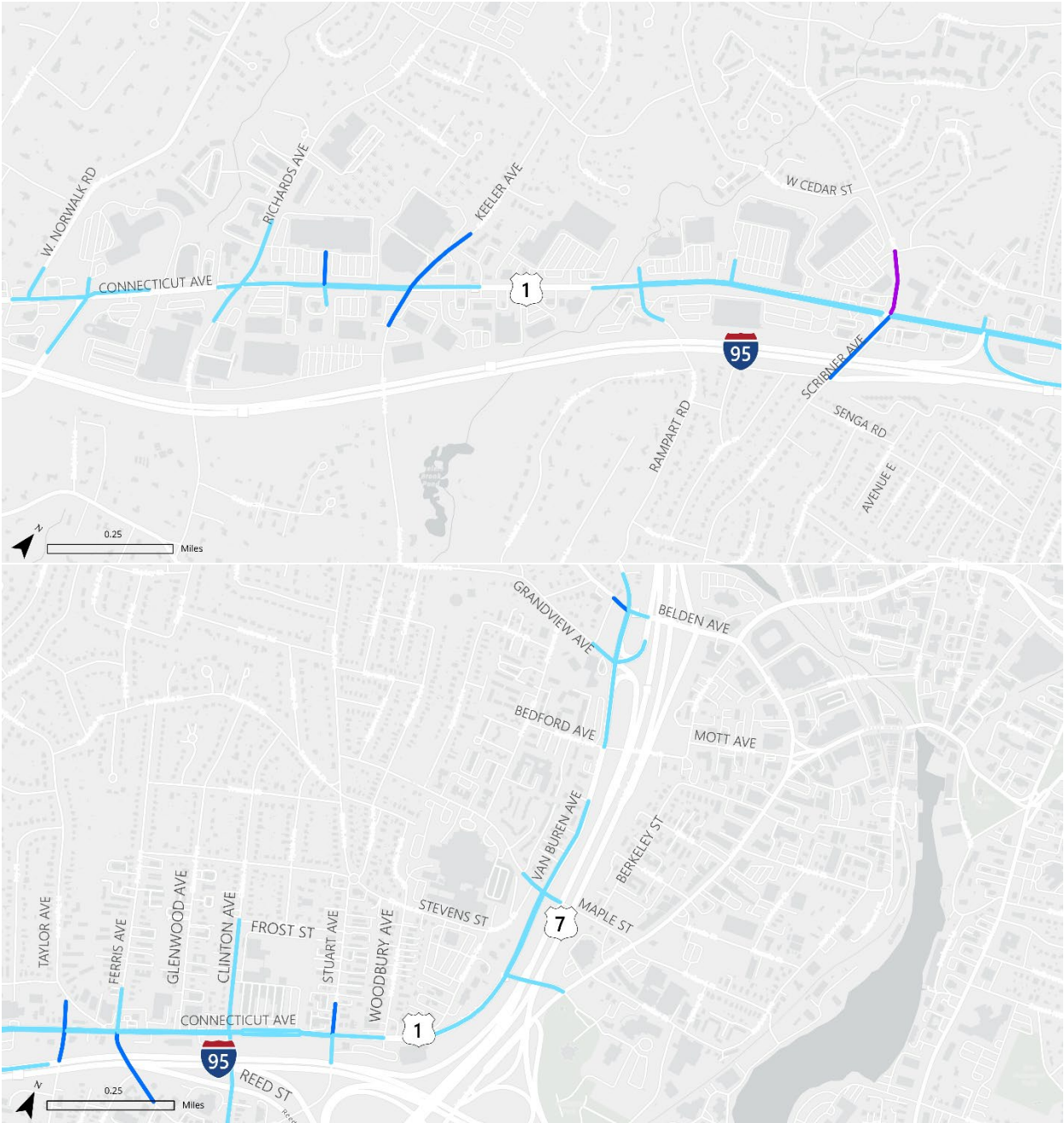
Corridor operations were evaluated by three categories of delay – free flow with limited to no congestion (less than 35 seconds of average vehicle delay), moderate flow (between 35 seconds and 55 seconds of average vehicle delay) and congested (greater than 55 seconds of average vehicle delay). Results were provided in the Existing Conditions Memorandum and accompanying figures are duplicated below (**Figure 1** through **Figure 4**).

Figure 1. Approach Delay - Existing AM Peak Hour



- Approach Delay**
- < 35 seconds
 - > 35 and < 55 seconds
 - > 55 seconds

Figure 2. Approach Delay - Existing Mid-Day Peak Hour



Approach Delay

- < 35 seconds
- > 35 and < 55 seconds
- > 55 seconds

Figure 3. Approach Delay - Existing PM Peak Hour

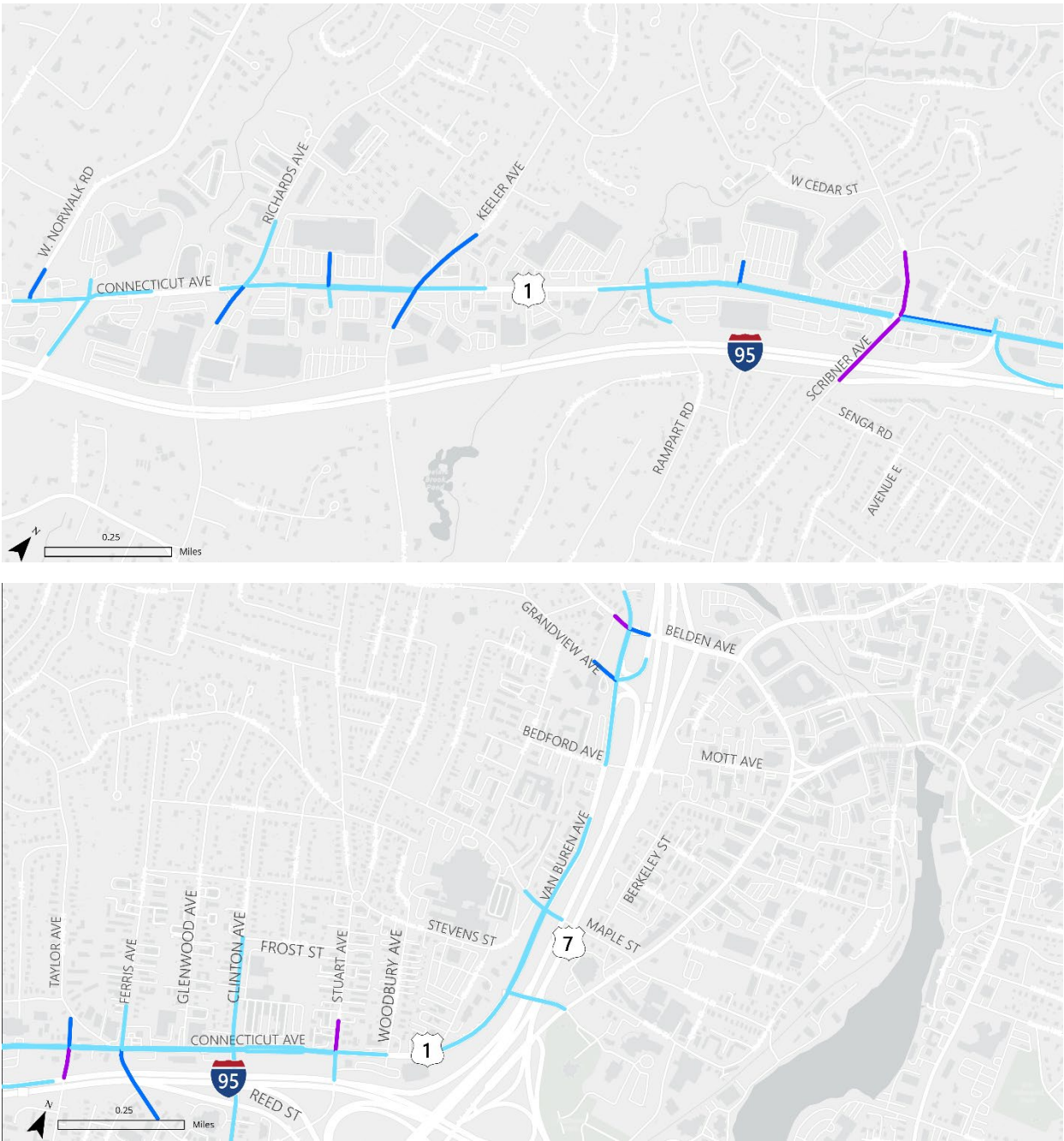
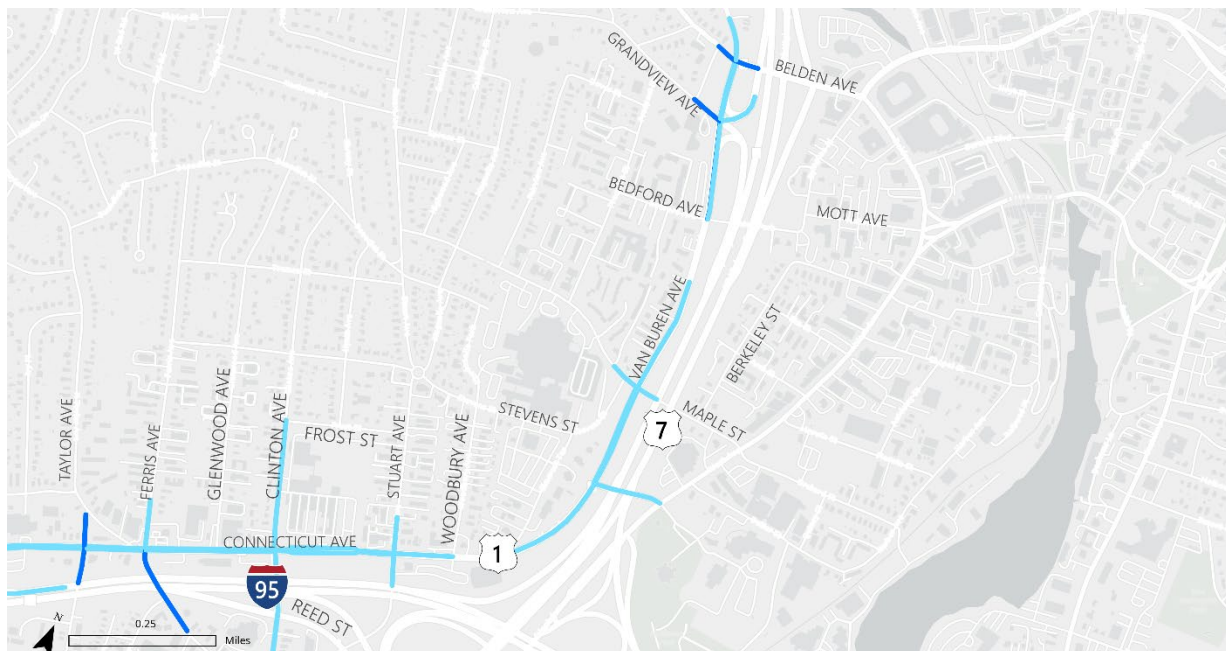
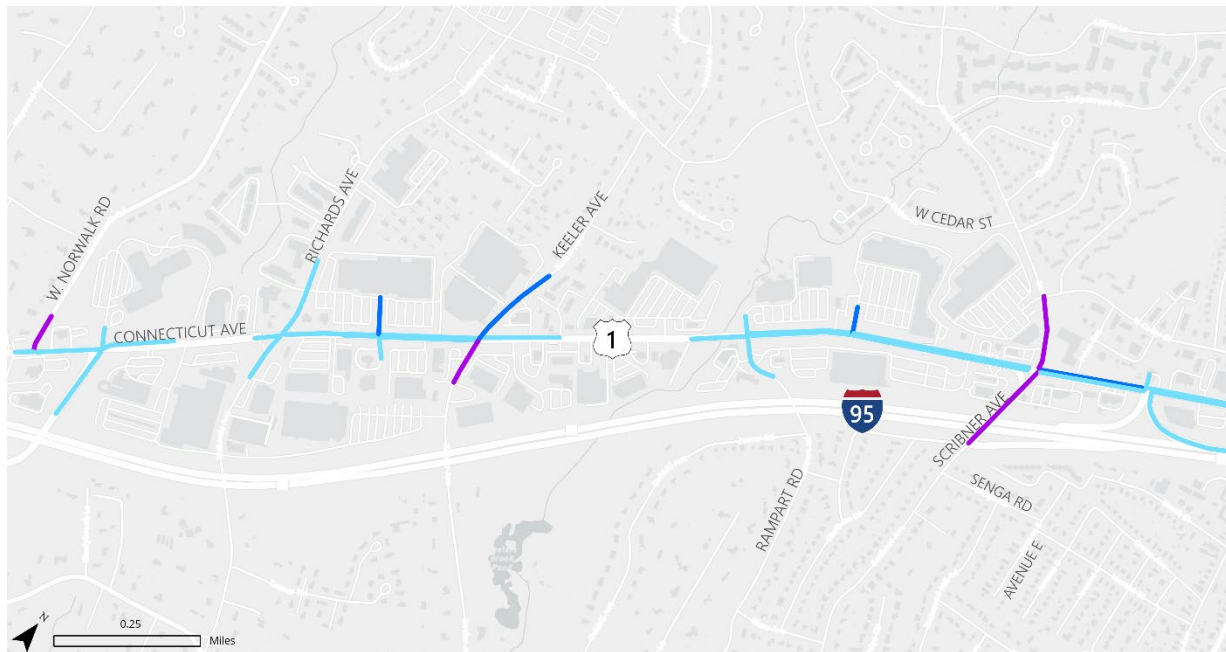


Figure 4. Approach Delay - Existing Saturday Peak Hour



Approach Delay

- < 35 seconds
- > 35 and < 55 seconds
- > 55 seconds

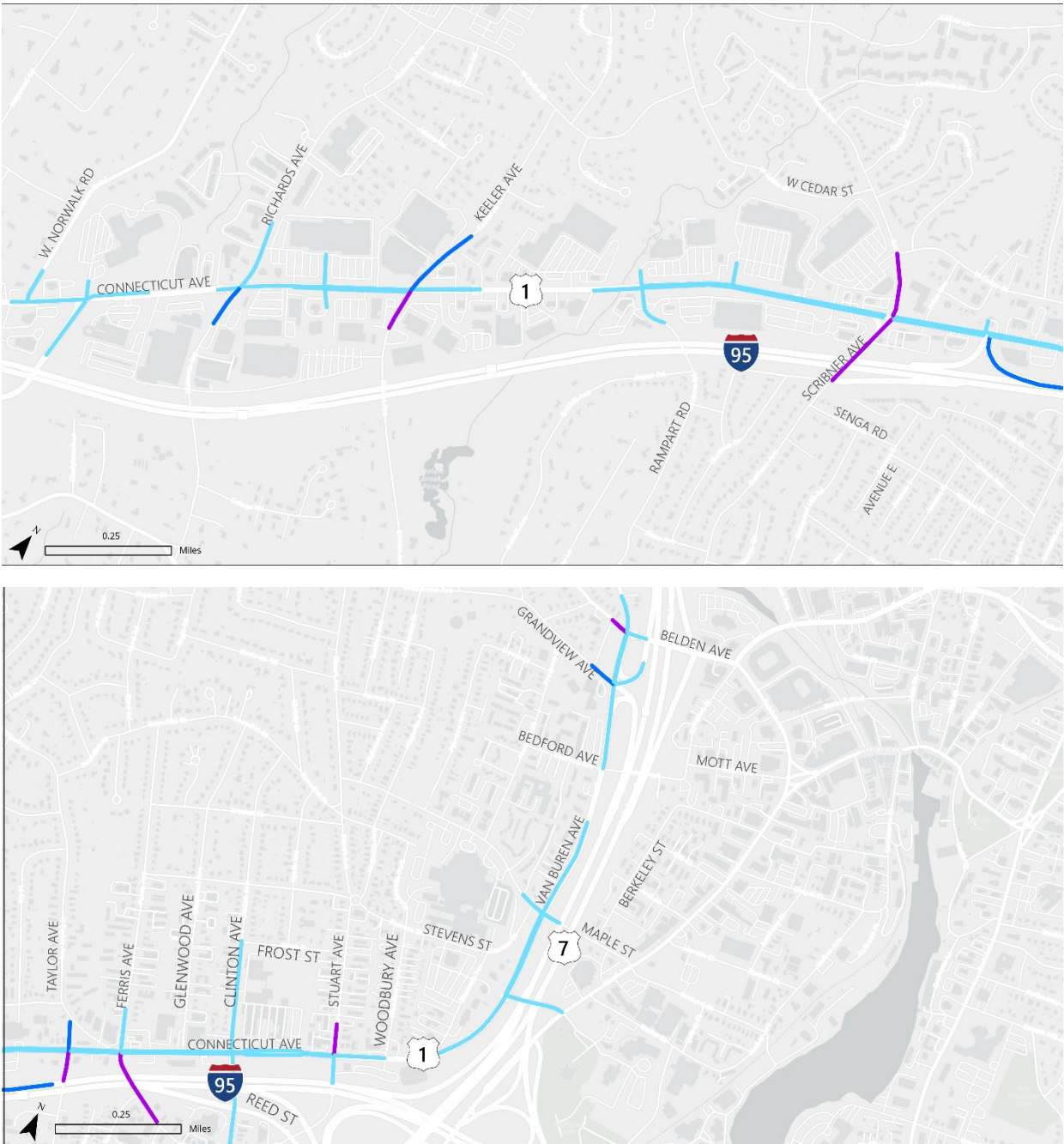
Future No Improvements Traffic Operations

The 2040 design year traffic volumes were input to the existing conditions Synchro 11 model to determine changes to vehicle operations and delay anticipated in the study area if no improvements were implemented by the year 2040. Full LOS results are provided in **Appendix G** and Synchro outputs are provided in **Appendix H**.

Approach Delay

As shown in **Figure 5** through **Figure 8**, the majority of the lanes and approaches continue to operate similar to existing conditions during the peak hours analyzed. Exceptions follow the figures on page 7.

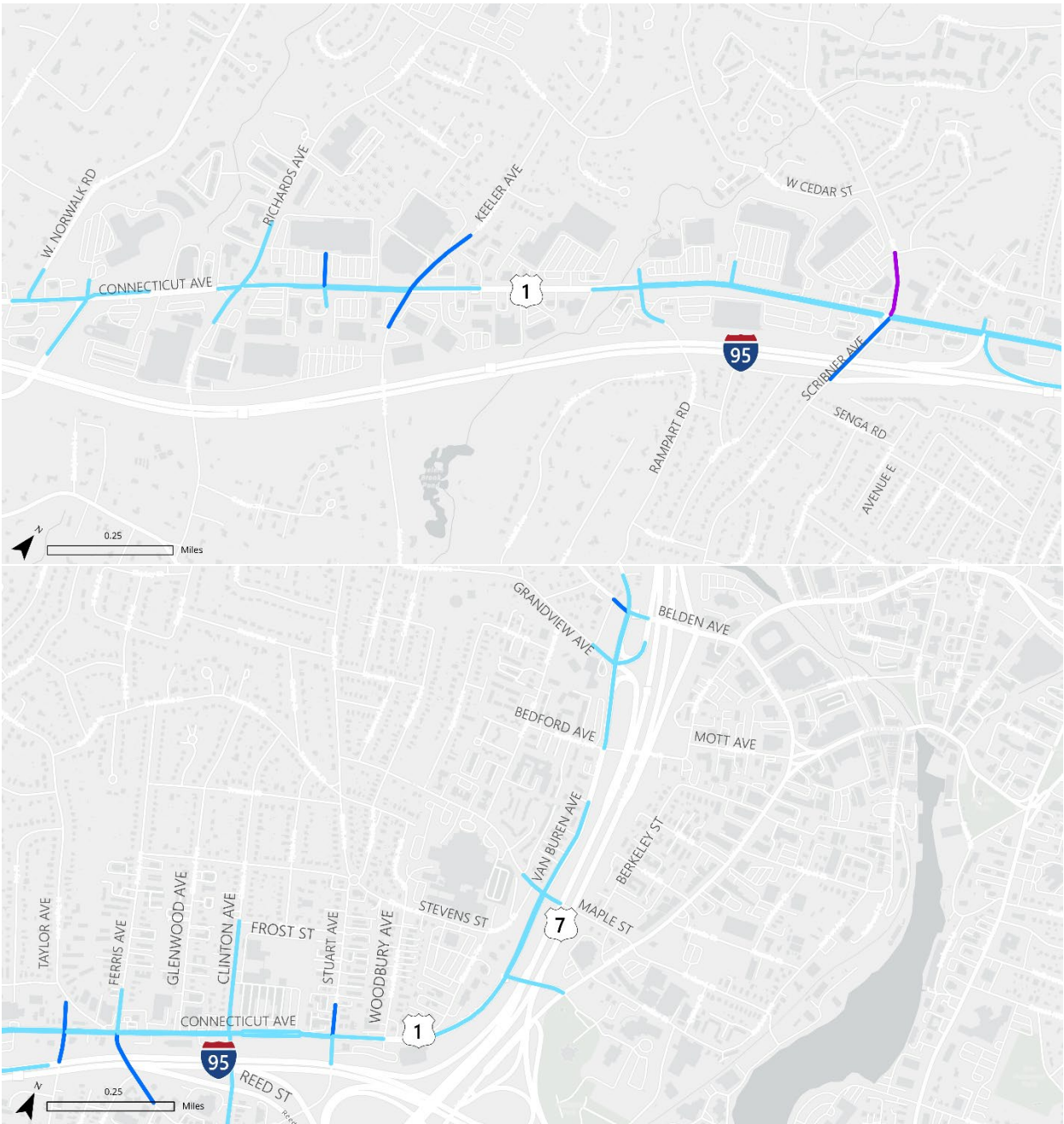
Figure 5. Approach Delay – No Build AM Peak Hour



Approach Delay

- < 35 seconds
- > 35 and < 55 seconds
- > 55 seconds

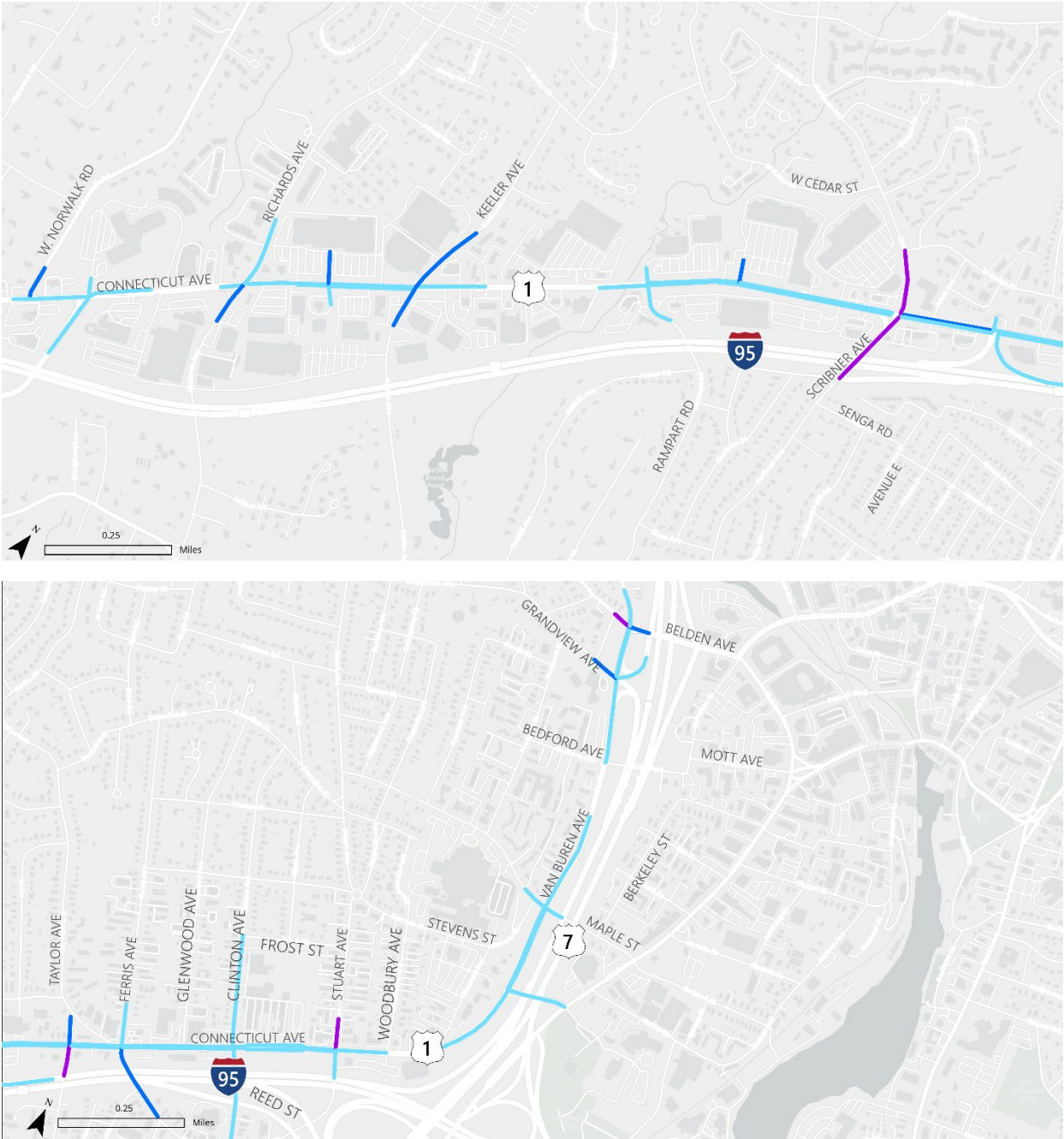
Figure 62. Approach Delay – No Build Mid-Day Peak Hour



Approach Delay

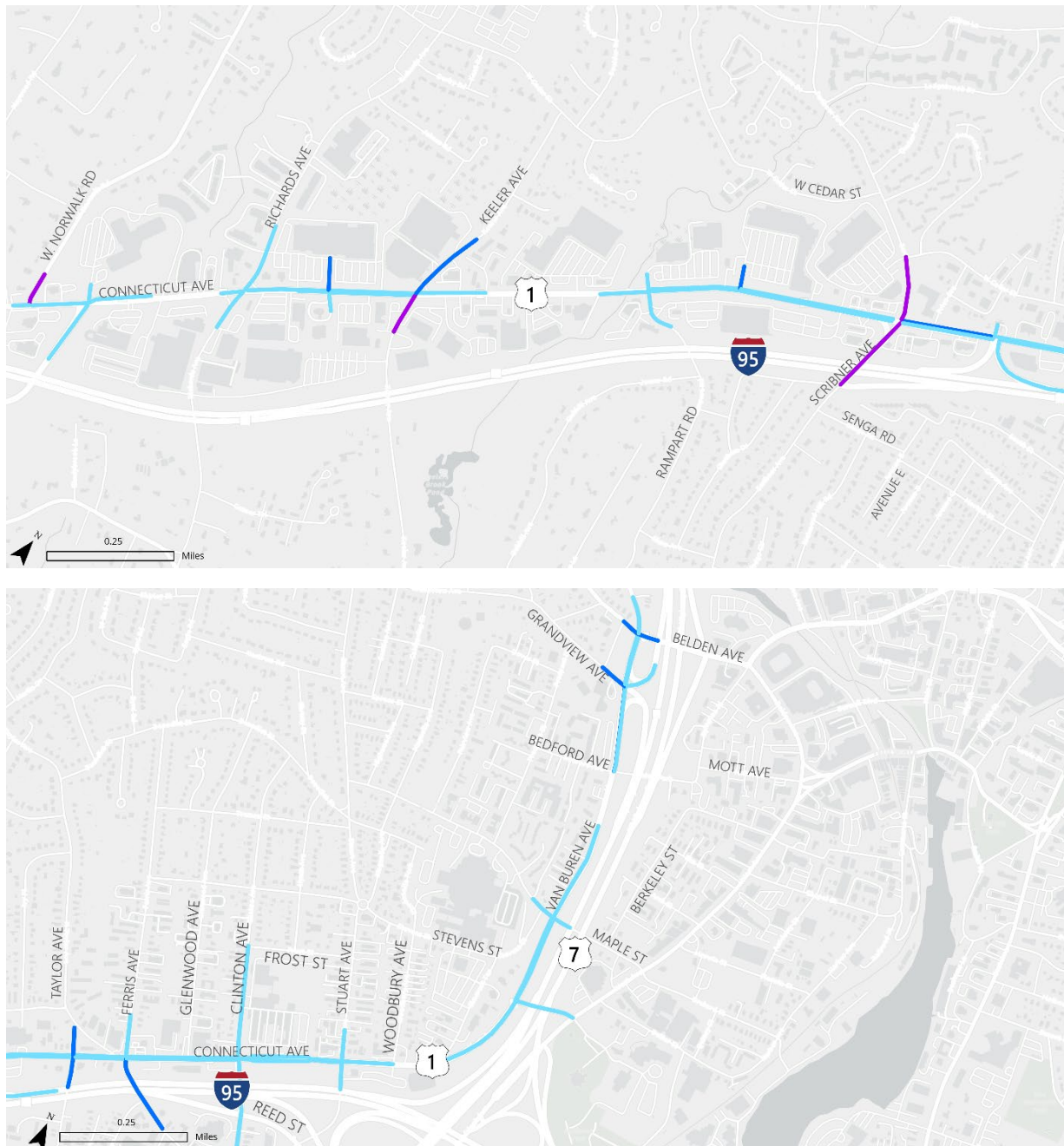
- < 35 seconds
- > 35 and < 55 seconds
- > 55 seconds

Figure 7. Approach Delay – No Build PM Peak Hour



- Approach Delay**
- < 35 seconds
 - > 35 and < 55 seconds
 - > 55 seconds

Figure 8. Approach Delay – No Build Saturday Peak Hour



Approach Delay

- < 35 seconds
- > 35 and < 55 seconds
- > 55 seconds

- The southbound approach at the intersection of West Norwalk Road and US Route 1 is anticipated to be overcapacity with congested conditions during all peak periods.
- The southbound left-turn movement at the intersection of Richards Avenue and US Route 1 is anticipated to operate with congested conditions during the weekday midday and PM peak hours and overcapacity with congested conditions during the Saturday midday peak hour.
- The northbound shared through/right-turn movement for the intersection of Keeler Avenue and US Route 1 is anticipated to be over capacity with congested conditions during the weekday midday, weekday PM peak, and Saturday midday peak hours. In addition, the eastbound left-turn and westbound left-turn movements are anticipated to operate with congested conditions during the weekday midday peak hour. During the weekday PM peak hour, the shared southbound through/right-turn movement and westbound left-turn movement are anticipated to operate with congested conditions. Finally, in the Saturday midday peak hour the eastbound left-turn movement and westbound left-turn movements are anticipated to operate over capacity with congested conditions.
- The eastbound left-turn movement at the intersection of Scribner Avenue and US Route 1 is anticipated to operate with congested conditions during the weekday AM peak hour. The westbound left-turn movement is anticipated to operate with congested conditions during the weekday midday peak hour. During the weekday PM peak hour, the northbound left-turn movement is anticipated to operate with congested conditions. Finally, during the Saturday midday peak hour, the westbound shared through/right-turn movement is anticipated to be overcapacity with congested conditions.
- The westbound left-turn movement at the intersection of Interstate 95 (Exit 14) and US Route 1 is anticipated to operate with congested conditions during the Saturday midday peak hour.
- The northbound approach at the intersection of Taylor Avenue and US Route 1 is anticipated to operate overcapacity with congested conditions during the weekday AM peak hour and with congested conditions during the weekday midday peak hour. In addition, the southbound approach is anticipated to operate with congested conditions during the weekday midday, weekday PM peak, and Saturday peak hours.
- The southbound approach at the intersection of Stuart Avenue and US Route 1 is anticipated to operate overcapacity with congested conditions during the weekday AM and PM peak hours and with congested conditions during the weekday midday peak hour.
- The northbound shared through/right-turn movement at the intersection of Grandview Avenue/ US Route 7 and Van Buren Avenue is anticipated to operate with congested conditions during the weekday midday peak hour and overcapacity with congested conditions during the weekday PM peak and Saturday midday peak hours. In addition, the southbound left-turn movement is anticipated to operate overcapacity with congested conditions during the Saturday midday peak hour.
- The congested conditions for the westbound left-turn movement at the intersection of Belden Avenue and Van Buren Avenue are anticipated to improve for the weekday PM peak hour however during the Saturday midday peak period the movement is anticipated to be overcapacity with congested conditions. In addition, the shared eastbound through/right-turn lane is anticipated to improve in the weekday AM, midday and PM peak hours but deteriorate in the Saturday midday peak hour to congested conditions.

Queues

In addition, the following approaches were observed to have notable deterioration in queue lengths from existing to future conditions:

- The westbound shared through/right-turn movement of US Route 1 at the intersection of Interstate 95 (Exit 13) Ramps and US Route 1 during the weekday AM, midday peak, and Saturday midday peak hours where the 95th percentile queues deteriorate to exceed 400 feet.
- The eastbound shared through/right-turn and westbound through movements at the intersection of Richards Avenue and US Route 1 during the weekday midday peak hour where queues deteriorate to exceed 400 feet.
- The eastbound shared through/right-turn movement at the intersection of Keeler Avenue and US Route 1 during the weekday PM and Saturday midday peak hours where queues deteriorate to exceed 400 feet.
- The eastbound shared through/right-turn movement at the intersection of Rampart Road and US Route 1 during the weekday midday and Saturday midday peak hours where queues deteriorate to exceed 400 feet.
- The westbound shared through/right-turn movement of US Route 1 at the intersection of Scribner Avenue and US Route 1 during the weekday midday, weekday PM, and Saturday midday peak hours where the 95th percentile queues deteriorate 200 feet or more.
- The eastbound approach at the intersection of Interstate 95 (Exit 14) and US Route 1 during the weekday midday, weekday PM, and Saturday midday peak hours where queues deteriorate to exceed 400 feet.
- The northbound approach at the intersection of Taylor Avenue and US Route 1 during the weekday AM peak hour and eastbound shared through/right-turn during the weekday PM and Saturday midday peak hours where queues deteriorate to approximately 500 feet.
- The eastbound and westbound shared through/right-turn movements at the intersection of Cedar Street and US Route 1 during the Saturday midday peak hour where queues deteriorate to approximately 400 feet.
- The westbound shared through/right-turn movement at the intersection of Fairfield Avenue and US Route 1 during the weekday midday, weekday PM, and Saturday midday peak hours where queues deteriorate to exceed 400 feet. In addition, the eastbound shared through/right-turn movement where queues deteriorate to exceed 400 feet in the weekday midday, weekday PM, and Saturday midday peak hours.
- The westbound approach at the intersection of Stuart Avenue and US Route 1 during the weekday PM and Saturday midday peak hours where queues deteriorate to exceed 400 feet.
- The northbound shared through/right-turn movement at the intersection of Van Buren Avenue and Grandview Avenue/ US Route 7 during the weekday midday, weekday PM, and Saturday midday peak hours where queues deteriorate to approximately 500 feet or more. In addition, the southbound shared through/right-turn movement where queues deteriorate to approximately 400 feet during the weekday midday and Saturday midday peak hours and greater than 500 feet during the weekday PM peak hour.