FORMAL SAFETY STUDY
ODOT DISTRICT 4
SUMMIT COUNTY
CITY OF HUDSON

STATE ROUTE 303 STREETSBORO STREET FROM BOSTON MILLS ROAD TO SR 91

SR 303 – Boston Mills Road / E Case Drive to SR 91

AMATS Crash Report 2016-18: #32

January 11, 2022 | DRAFT

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EXECUTIVE SUMMARY

PROJECT BACKGROUND

The purpose of this study is to analyze existing safety concerns and evaluate potential countermeasures on a segment of SR 303 (Streetsboro Street) in the City of Hudson in Summit County. Recommendations of countermeasures from this safety study will be used to make roadway improvements that address safety concerns on SR 303.

PROJECT PURPOSE AND SAFETY NEED

The study area was included in Akron Metropolitan Area Transportation Study (AMATS) Current Crash Report for the years 2016-2018. The corridor was ranked number 32 on the AMATS Crash Report. This study addresses the segment of SR 303 from Boston Mills Road / E Case Drive to SR 91 (Main Street) (log points 12.64 to 13.23).

OVERVIEW OF SAFETY ISSUES AND POSSIBLE CAUSES

From 2015-2019, 178 crashes occurred within the study area. The most predominant crash type on the corridor was rear-end crashes which accounted for 57% of the total number of crashes. This crash type was followed by sideswipe – passing crashes and angle crashes, which each accounted for 12% of the total number of crashes.

Based on field investigations and the crash analysis, specific safety concerns have been identified at the intersection. These concerns include items under the categories of traffic operations, pedestrian facilities, and geometric features.

TRAFFIC OPERATIONS

- Eastbound and westbound drivers do not evenly utilize the two through lanes on the west segment of the corridor
- Drivers fail to slow behind stopped/yielded or slowing vehicles as they approach turns or signals
- The two-way left-turn lane on the east segment of the corridor creates confusion at the multiple driveway openings

PEDESTRIAN ACTIVITY AND FACILITIES

- At some crosswalks, curb ramps are aligned towards the center of the intersection and not with the direction of pedestrian travel
- Some curb ramps are missing detectable warning surfaces
- Several crosswalks along the corridor do not have pedestrian countdown timers
- Pedestrians crossing the north leg of the intersection across Atterbury Blvd have a long crossing including crossing through the porkchop island and right-turn slip lane
- Pedestrian crossing the south leg of the intersection across the Gionino's driveway have confusing right-of-way across the driveway and no clear destination across the crosswalk

GEOMETRIC FEATURES

- The sidewalk fence under the railroad bridges and the Hudson Commerce Park sign obstructs sight distance for drivers turning out of the Hudson Commerce Park Driveway
- Large vehicles turning at West Streetsboro Street at Main Street track over the curbs
- There are frequent and large curb cuts at driveways along the corridor

RECOMMENDED COUNTERMEASURES & RELATED COST

Countermeasures which may impact crashes on the corridor include:

SEGMENT: Boston Mills Rd / E Case Dr to Atterbury Blvd

- Reallocate pavement moving markings along W Streetsboro St in front of the Hudson Plaza Shopping Center
    - Option 1: Remove second eastbound through lane and add dedicated right-turn lane at Hudson Plaza Shopping Center (West Entrance)
        - The total cost of Option 1, including engineering design, is estimated to be $160,000.
    - Option 2: Remove second eastbound through lane and add dedicated westbound left-turn lane at Hudson Plaza Shopping Center (West Entrance)
        - The total cost of Option 2, including engineering design, is estimated to be $288,000.
    - Option 2b: Remove second eastbound through lane and add dedicated eastbound right-turn lane and dedicated westbound left-turn lane at Hudson Plaza Shopping Center (West Entrance)
        - The total cost of Option 2b, including engineering design, is estimated to be $372,000.
    - **Recommended – Option 3:** Remove second eastbound through lane, remove second westbound through lane and add dedicated eastbound right-turn lane and dedicated westbound left-turn lane
        - The total cost of Option 3, including engineering design, is estimated to be $323,000.
    - Install streetscaping in additional space

INTERSECTION: West Streetsboro Street at Boston Mills Road / E Case Drive

- **Short-term countermeasures**
    - Adjust signal phasing for LPIs across Boston Mills Rd and E Case Dr – Lag protected lefts from Streetsboro St
        - LPIs across Streetsboro Street are assumed to be installed with adaptive signal project
    - Restrict right-turn on red on all approaches with No Turn on Red signs – may require additional analysis to ensure mast arms can support additional loads
- **Mid-term countermeasures**
    - Upgrade curb ramps to be ADA compliant
    - Install lane guide markings in the intersection for turns
    - Install countdown timers for all crosswalks

INTERSECTION: West Streetsboro Street at Hudson Plaza Shopping Center (West Entrance)

- **Short-term countermeasures**
  - Adjust signal phasing for LPIs across the Plaza entrance - Lag protected lefts from Streetsboro St
    - LPIs across Streetsboro Street are assumed to be installed with adaptive signal project
  - Restrict right-turn on red on all approaches with No Turn on Red signs – may require additional analysis to ensure mast arms can support additional loads
  - Restripe pavement markings at stop bar exiting plaza and install high-visibility crosswalk across plaza entrance
- **Mid-term countermeasures**
  - Repair concrete pavement on entrance to the Hudson Plaza Shopping Center
  - Install countdown timers for all crosswalks
- **Long-term countermeasures**
  - Install dedicated eastbound right and westbound left-turn lanes into the Hudson Plaza Shopping Center, as shown in Corridor Option 3
    - Add traffic signal phase overlap for eastbound right-turn lane with northbound Plaza signal phase – would require 5-section signal head

INTERSECTION: West Streetsboro Street at Hudson Plaza Shopping Center (East Entrance)

- **Mid-term countermeasures**
  - Restripe pavement markings
- **Long-term countermeasures**
  - Convert from full access to left and right-in/right-out (i.e. remove left-turn out) by constructing pork-chop island

INTERSECTION: West Streetsboro Street at Atterbury Blvd / Milford Road

- **Short-term countermeasures**
  - Upgrade incandescent signal bulbs to LEDs
  - Adjust signal phasing for LPIs across Atterbury Blvd and Milford Rd - Lag protected lefts from Streetsboro St
    - LPIs across Streetsboro Street are assumed to be installed with adaptive signal project
    - Split phasing for Atterbury Blvd and Milford Road is assumed to be installed with adaptive project to address sight distance concerns from the hill on Milford Road and horizontal curve south of the intersection.
  - Restrict right-turn on red on all approaches with No Turn on Red signs – may require additional analysis to ensure mast arms can support additional loads
- **Mid-term countermeasures**
  - Cut down shrubs beside McIntyre Insurance
  - Install countdown timers for all crosswalks
- **Long-term countermeasures**
  - Increase space for left storage lane heading westbound on W Streetsboro St
  - Adjust geometry to slow westbound right-turn

- Remove second westbound through lane west of the intersection

INTERSECTION: West Streetsboro Street at Hudson Commerce Park Driveway

- **Short-term countermeasures**
  - Modify fence termini / fence type to improve sightline
  - Move or modify storage lane self-storage sign to clear sight triangle (17.8’ from the edge of the road and a height of 3.5’)
  - Install mirror to improve visibility out of Driveway
- **Medium-term countermeasures**
  - Realign sidewalk curb

INTERSECTION: West Streetsboro Street at Library Street

- **Short-term countermeasures**
  - Upgrade traffic lights to LED
  - Adjust signal phasing for LPIs across Library St - Lag protected lefts from Streetsboro St
    - LPIs across Streetsboro Street are assumed to be installed with adaptive signal project
  - Restrict right-turn on red on eastbound and westbound approaches with No Turn on Red signs – may require additional analysis to ensure mast arms can support additional loads
    - Intersection has temporary signs on northbound and southbound approaches, signal pole and mast arm to be replaced with adaptive signal project, signs to be moved to mast arm
- **Mid-term countermeasures**
  - Install stop bar in front of pizzeria
  - Remove western pedestrian crossing – Remove all associated crossing infrastructure
  - Install high visibility crosswalk across Gionino’s driveway and install truncated domes at crosswalk termini OR Remove southern pedestrian crossing – Remove two parking spaces closest to Streetsboro Street and all associated crossing/sidewalk infrastructure across driveway
  - Restripe east and north crosswalks
  - Install countdown timers on crosswalk signals

SEGMENT: Library Street to Main Street

- **Long-term countermeasures**
  - Minimize curb cuts (number of curb cuts and width of curb cuts) along corridor and modify dedicated left-turn and two-way left-turn lanes
  - Ensure sidewalk corridor is ADA compliant

INTERSECTION: West Streetsboro Street at Noble House

- **Mid-term countermeasures**
  - Relocate business sign and evaluate fence impact on sightline

INTERSECTION: West Streetsboro Street at Main Street

- **Short-term countermeasures**
  - Upgrade traffic lights to LED bulbs
  - Adjust signal phasing for LPIs on all approaches - Lag protected lefts
  - Restrict right-turn on red on all approaches with No Turn on Red signs – may require additional analysis to ensure mast arms can support additional loads
  - Investigate signing alternative truck route to avoid the intersection
- **Mid-term countermeasures**
  - Install lane guide markings
  - Upgrade crosswalk signals to countdown timers
  - Restripe crosswalks
- **Long-term countermeasures**
  - Modify curb radii to accommodate truck turning movements

PURPOSE AND NEED

The study area was included in Akron Metropolitan Area Transportation Study (AMATS) Current Crash Report for the years 2016-2018. The corridor was ranked number 32 on the AMATS Crash Report. This study addresses the segment of SR 303 from Boston Mills Road / E Case Dr to SR 91 (Main Street) (log points 12.64 to 13.23). The study addresses this location, shown in Figure 1.

In this study, primary and secondary needs are identified for SR 303 from log points 12.64-13.23. Primary needs encompass those issues that are identifiable in quantified data such as traffic studies, crash records, and roadway geometric data. Table 1 lists the most prevalent crash types at each intersection for the 2015-2019. Additionally, a fatal crash occurred in 2020 when a motorist turning right out of the driveway at 60 W Streetsboro Street (Noble House) struck a child bicycling in the crosswalk in the westbound direction. Secondary needs address conditions that do not meet current standards but cannot be linked directly to identified transportation problems. Within the study area, secondary needs include, but are not limited to, poor sight triangles, pedestrian concern, inadequate curb ramps, and inadequate pavement markings shown below in Table 2. Through this study, countermeasures addressing primary and secondary needs are recommended and used to make roadway improvements that address safety concerns at this location. Short-term, medium-term, and long-term countermeasures have been identified to improve safety at this intersection based on a crash analysis.

Figure 1: Study Area Map

Table 1: Primary Safety Needs

Location	Needs
Corridor Wide	Rear-ends, sideswipe-passing, and angle crashes
SR 303 at Boston Mills Rd / E Case Dr	Rear-ends, and angle crashes
SR 303 at Hudson Plaza Shopping Center (West Entrance)	Rear-ends
SR 303 at Atterbury Blvd / Milford Rd	Rear-ends, and sideswipe-passing
SR 303 at Library St	Rear-ends, sideswipe-passing, and angle crashes
SR 303 at 60 W Streetsboro Street	Fatal crash (occurred in 2020)
SR 303 at Main St	Rear-ends, sideswipe-passing, and angle crashes

Table 2: Secondary Safety Needs

Location	Needs
Corridor Wide	Non-compliant ADA curb ramps, Poor lane geometrics, Congestion, Large and frequent curb cuts
SR 303 at Boston Mills Rd / E Case Dr	Non-compliant ADA curb ramps
SR 303 at Hudson Plaza Shopping Center (West Entrance)	Pedestrian safety concern, Non-compliant ADA curb ramps
SR 303 at Atterbury Blvd / Milford Rd	Long pedestrian crossing, Poor sight triangle caused by shrubbery on southern leg
SR 303 at Library St	Non-compliant ADA curb ramps, Pedestrian safety concern
SR 303 at Main St	Pedestrian safety concern, Constrained truck turning movement

EXISTING CONDITIONS

The study area along SR 303 (Streetsboro Street) is located in the City of Hudson, under the jurisdiction of ODOT District 4. The western limit of the study area includes the intersection at Boston Mills Road / E Case Drive while the eastern limit extends through the intersection at SR 91 (Main Street). Through the study area, SR 303 is classified as an urban minor arterial with a posted speed limit of 25 miles per hour.

The study area includes the following five signalized intersections:

- SR 303 and Boston Mills Road / E Case Drive
- SR 303 and Hudson Plaza Shopping Center (west)
- SR 303 and Atterbury Boulevard/Milford Drive
- SR 303 and Library Street / Gionino's Driveway
- SR 303 and SR 91 (Main Street)

The study area also includes the following unsignalized intersections or driveways:

- SR 303 and Lennox Road
- Hudson Plaza Shopping Center (east) Driveway
- Hudson Commerce Park Driveway
- Railroad Access Driveway
- Nobel House Driveway / Shell Driveways (2)
- SR 303 and First Street (Right-in, right-out only) / Lager & Vine Driveway
- Morgan Foundation Driveway

The Summit County METRO Regional Transit Authority (RTA) operates two routes with stops in the study area, routes 103 and 104. There are eastbound and westbound stops just east of Hudson Plaza Shopping Center (west), and nearside stops in each direction at First Street. The existing bus stops include no amenities and are identified by signs at the stop locations.

The 2020 METRO Strategic Plan calls for a redesign of METRO's fixed-route transit network. According to the plan "*Outcomes of the network redesign will include changes to the fixed-route network, including possible changes to route alignments, service frequencies, and span of service, and reallocation of service frequency among routes by reducing service frequency or looking for service alternatives on lower performing routes, adding frequency to higher performing routes, or starting new routes to address unmet service needs."* While not specifically identified in the plan, this redesign may results in changes to the fixed routes on SR 303.

A field review was conducted on Thursday, September 16, 2021 to observe conditions and operations in the study area. Observations from the field visit have been incorporated throughout the content of this report.

PHYSICAL CONDITION

In the study area, the cross section of SR 303 changes between the west and east sections. In the western section (from Boston Mills Road / E Case Drive to Atterbury Boulevard / Milford Drive) SR 303 is primarily a four-lane section with two through lanes in each direction. In the eastern section (from Atterbury Boulevard / Milford Drive to SR 91) SR 303 is primarily a three-lane section with one through lane in each direction and a center left-turn lane. The study corridor includes a number of turn lane treatment types and crosswalk locations, each with different safety impacts. Table 3 shows the locations of the turn lanes and number of through lanes along the corridor. The lane assignments are conveyed to drivers through a combination of pavement markings and signs on the sides of the street.

Table 3: SR 303 Turn Lanes

Intersection / Driveway	Eastbound Lanes	Westbound Lanes	Crosswalks across SR 303
SR 303 and Boston Mills Road / E Case Drive	Left-turn | Through / right-turn	Left-turn | Through | Right-turn	East and west of intersection
SR 303 and Lennox Road	Left-turn | Through	Through | Through / right-turn	NA
SR 303 and Hudson Plaza Shopping Center (west)	Through | Through / right-turn	Through – left-turn | Through	East of intersection
Hudson Plaza Shopping Center (east) Driveway	Through / right-turn	Left-turn | Through | Through	NA
SR 303 and Atterbury Boulevard / Milford Drive	Left-turn | Through / right-turn	Left-turn | Through | Through / right-turn	East of intersection
Hudson Commerce Park Driveway	Through / right-turn	Left-turn | Through	NA
SR 303 and Library Street / Gionino's Driveway	Left-turn | Through / right-turn	Left-turn | Through / right-turn	East and west of intersection
Nobel House Driveway / Shell Driveways (2)	Two-way left-turn lane | Through / right-turn	Two-way left-turn lane | Through / right-turn	NA
SR 303 and First Street (RIRO) / Lager & Vine Driveway	Through / right-turn (No left-turn)	Left-turn | Through / right-turn	NA
Morgan Foundation Driveway	Through / right-turn	Through / right-turn	NA
SR 303 and SR 91 (Main Street)	Left-turn | Through | Right-turn	Left-turn | Through | Right-turn	East and west of intersection

There is one physically constrained section of SR 303 between Atterbury Boulevard/Milford Drive and Library Street resulting from two railroad bridges crossing over SR 303. In this section the vertical clearance is limited to 13' 6" and the width between the bridge supports is approximately 40'. Tire marks were observed on the curbs at the intersection of SR 303 and SR 91 (Main Street).

There are sidewalks on the north and south sides along SR 303 except for a gap in the sidewalk on the south side of SR 303 under the western railroad bridge. Where sidewalk does exist, there is a decorative fence separating the sidewalk from the street in the constrained section under the bridges, shown in Figure 2.

Figure 2: Sidewalk gap in constrained section of SR 303, looking west from Railroad access driveway

According to the most recent Pavement Condition Rating (PCR) conducted in 2021, the pavement condition on the study corridor is in good condition with a PCR of 81 for the segment west of Atterbury Boulevard / Milford Drive and 85 for the segment east of Atterbury Boulevard/Milford Drive.

A sight distance assessment was conducted for the Hudson Commerce Park Driveway located between the railroad bridges. The sight distance requirements are summarized in Figure 3 and 4. At the speed of 25 mph, the stopping sight distance is 155’ and the intersection sight distance looking to the left should be 240’. The sidewalk comes up to driveway then ends and has fencing running alongside it there are sight triangle issues being caused by the fencing. Additionally, a sign is blocking sight line for vehicles turning right going eastbound.

Figure 3: Sight distance details

Figure 4: Sign blocking sight distance

SIGNAL OPERATIONS

The signalized intersections along SR 303 operate as part of a coordinated system that extends beyond the study area. During peak times the system operates with a cycle length of 105 seconds. Simultaneous to this Safety Study, the City is in the process of working with a consultant to design and implement an adaptive signal timing project. With adaptive signals, the signal timings will not be fixed from cycle to cycle but will be driven by the motor vehicle demand on all approaches.

Right-turns on red are permitted throughout the corridor except for northbound and southbound at Library Street which have been temporarily been installed and will be permanently installed with the adaptive signal project work. All the vehicular signal indications in the study area include backplates with retroreflective borders. There is protected-permitted left-turn phasing along SR 303 at all intersections. The left-turn signal phasing for each intersection is listed in Table 4.

Table 4: SR 303 Signal Phasing

Intersection / Driveway	Existing SR 303 Left-Turn Signal Phases	Existing Side Street Left-Turn Signal Phases
SR 303 and Boston Mills Road / E Case Drive	Protected – permitted	Split phase
SR 303 and Hudson Plaza Shopping Center (west)	Protected – permitted	Protected
SR 303 and Atterbury Boulevard / Milford Drive	Protected – permitted	Permitted (Split phasing to be implemented with adaptive signals)
SR 303 and Library Street / Gionino's Driveway	Protected – permitted	Permitted
SR 303 and SR 91 (Main Street)	Protected – permitted with right-turn overlaps	Protected – permitted with right-turn overlaps

Additionally, as part of the adaptive signal project leading pedestrian intervals (LPIs) are to be installed for crosswalks that do not conflict with protected – permitted left-turn phasing. According to the ODOT Traffic Engineering Manual Section 404-4 LPIs should not be implemented where the desired LPI phase has protected/permissive left (i.e. “leading left”) in the same direction due to possible vehicle/pedestrian conflict.

TRAFFIC VOLUMES

According to the Ohio Department of Transportation (ODOT) Transportation Data Management System (TDMS), the 2-way Average Annual Daily Traffic (AADT) on SR 303 for the year 2020 was 13,090 vehicles per day (vpd), specifically collected on the segment between Boston Mills Road / E Case Drive and the Hudson Plaza Shopping Center (west) intersection. Heavy vehicles make up three percent of the total traffic on SR 303. The historic AADT shown on the TDMS indicates that the traffic volumes have generally held steady or decreased on the corridor in recent years.

The City of Hudson provided turning movement counts (TMCs) for SR 303 that were collected for the adaptive signal project on Tuesday, July 6, 2021. TMCs were collected for the time periods from 7:00AM-9:00AM, 11:00AM-2:00PM, and 3:00PM-6:00PM. The peak hour TMCs are shown in Figure 5. The raw TMCs are attached in Appendix A.

Based on discussions with ODOT and the Akron Metropolitan Area Transportation Study (AMATS), it was recommended to use a traffic growth rate of 0% for the study area for any future conditions analysis. Additionally, ODOT’s COVID traffic count supplement created by Central Office Modeling and Forecasting was reviewed compared to the 2021 TMCs and historic 2017 TMCs on SR 303 which indicated that that a COVID factor would not be necessary.

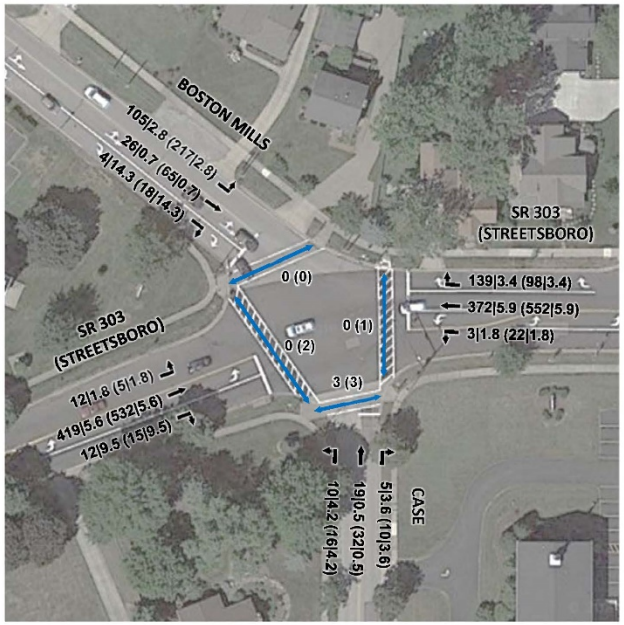
The 2021 and 2017 counts were compared across all hours for each location, shown in Table 5, to see if they were within “reasonable agreement (usually within 15%)” as noted in the ODOT Traffic Counts for Traffic Forecasts COVID 19 Supplement. One intersection (Boston Mills Road / E Case Drive) was 16% lower in 2021 than 2017 but the others were within 10% and the total for all intersections was within 9%. Additionally, there was a pretty even percent decrease across all four approaches at the Boston Mills Road / E Case Drive intersection (i.e. no major change in travel pattern through the intersection). Based on this information a COVID adjustment was not applied to any of the intersections.

Table 5: COVID Adjustment Calculations, Total volumes from counts (7AM-9AM, 11AM-1PM, 3PM-6PM)

Intersection	2017	2021	% Difference
SR 303 & Boston Mills Road / E Case Drive	13,003	10,878	- 16%
SR 303 & Atterbury Blvd / Milford Drive	13,613	12,933	- 5%
SR 303 & Library Street	14,289	12,908	- 10%
SR 303 & Main Street	21,328	19,793	- 7%
Total	**62,233**	**56,512**	**- 9%**

BOSTON MILLS/SR 303 (STREETSBORO)/CASE

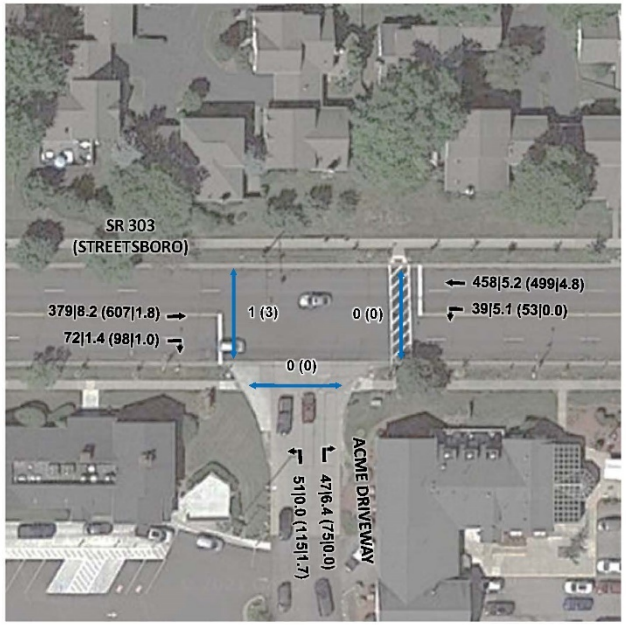
DATE: 7/6/2021
AM PEAK: 7:30-8:30 AM PHF: 0.941
PM PEAK: 4:45-5:45 PM PHF: 0.917



VEHICLE - AM VOLUME|HEAVY VEHICLE% (PM VOLUME|HEAVY VEHICLE%)
PEDESTRIAN – AM VOLUME (PM VOLUME)

SR 303 (STREETSBORO)/ACME DRIVEWAY

DATE: 7/6/2021
AM PEAK: 8:00-9:00 AM PHF: 0.922
PM PEAK: 4:45-5:45 PM PHF: 0.960



VEHICLE - AM VOLUME|HEAVY VEHICLE% (PM VOLUME|HEAVY VEHICLE%)
PEDESTRIAN – AM VOLUME (PM VOLUME)

SR 303 (STREETSBORO)/MILFORD/ATTERBURY

DATE: 7/6/2021
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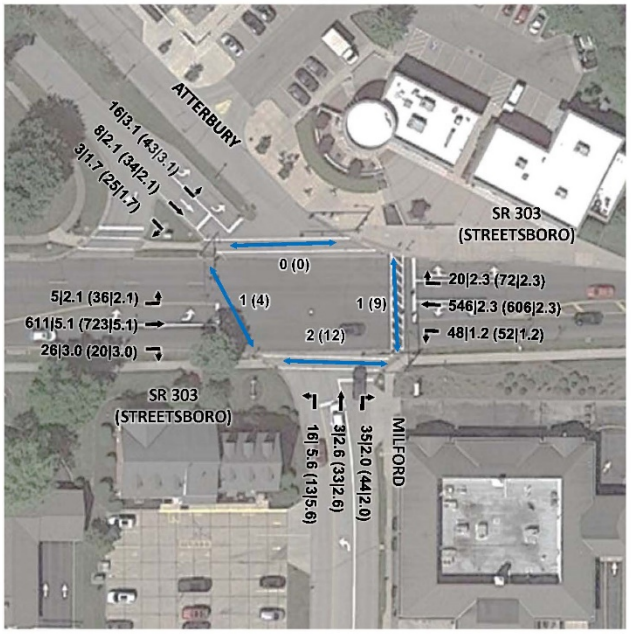
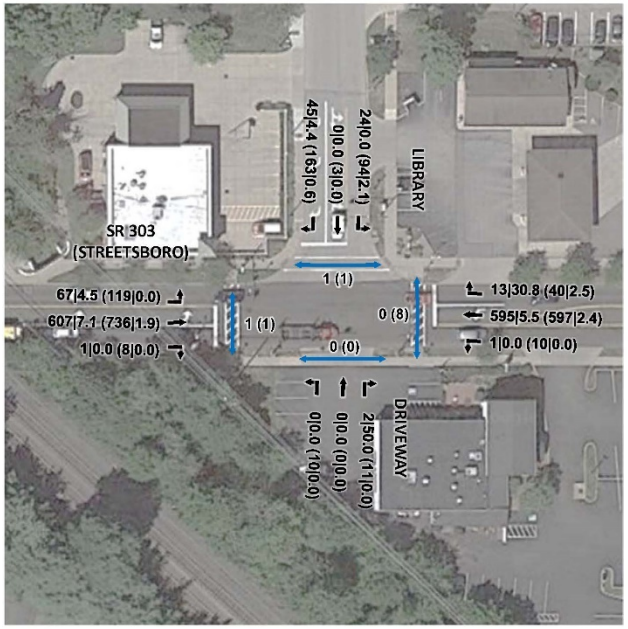
PM PEAK: 4:45-5:45 PM PHF: 0.944



VEHICLE - AM VOLUME|HEAVY VEHICLE% (PM VOLUME|HEAVY VEHICLE%)
PEDESTRIAN – AM VOLUME (PM VOLUME)

SR 303 (STREETSBORO)/LIBRARY

DATE: 5/13/2021
AM PEAK: 7:15-8:15 AM PHF: 0.865
PM PEAK: 4:45-5:45 PM PHF: 0.934



VEHICLE - AM VOLUME | HEAVY VEHICLE% (PM VOLUME | HEAVY VEHICLE%)
PEDESTRIAN – AM VOLUME (PM VOLUME)

SR 303 (STREETSBORO)/SR 91 (MAIN)

DATE: 7/6/2021
AM PEAK: 8:45-9:45 AM PHF: 0.924
PM PEAK: 4:45-5:45 PM PHF: 0.972

VEHICLE - AM VOLUME | HEAVY VEHICLE% (PM VOLUME | HEAVY VEHICLE%)
PEDESTRIAN – AM VOLUME (PM VOLUME)

Figure 5: Existing (2021) Conditions Vehicle and Pedestrian Movement

CRASH DATA AND ANALYSIS

From 2015-2019, 178 crashes occurred within the study area with 2017 having the highest prevalence of collisions of years analyzed, as indicated in Table 6. Of the 178 total crashes, 28 crashes or 16% resulted in injury while 150 or 84% resulted in property damage only (PDO). Additionally, a fatal crash occurred in 2020 when a motorist turning right out of the driveway at 60 W Streetsboro Street (Noble House) struck a child bicycling in the crosswalk in the westbound direction. There were five additional collisions involving people biking within the study area from 2015-2019 and one collision involving a pedestrian in 2019. These six crashes all resulted in injury.

Table 6: Study Area Collisions By Year

	2015	2016	2017	2018	2019	Total
Study Area Collisions	38	38	46	32	24	178

The predominant crash type on the corridor was rear end collisions which accounted for 57% of the total number of crashes. This crash type was followed by sideswipe – passing and angle crashes each accounting for 12% of the total. Sixty-six percent of the crashes occurred at four-way intersections, 15% were not at an intersection, 13% were at a T-intersection, and 5% occurred at a driveway or alley access.

Crashes occurred predominantly on Wednesdays, Thursdays, and Fridays accounting for 18%, 16%, and 19% of the total collisions within the study area, respectively. Forty-eight percent of crashes occurred between 2:00PM and 7:00PM. The highest contributing factors to crashes in the study area were 'followed too close/assured clear distance ahead' (ACDA) in 55% of crashes, 'failure to yield' in 12% of crashes, and 'other improper action' in 10% of crashes. In more than half of the crashes, 59%, the first vehicle was travelling straight ahead. The majority of crashes, 78% occurred when the roadway condition was dry. The full crash analysis and the collision diagrams can be found in Appendix B.

PROBABLE CAUSES

Based on field investigations and the crash analysis, specific safety concerns have been identified at the intersection. These concerns include items under the categories of traffic operations, pedestrian facilities, and geometric features.

TRAFFIC OPERATIONS

- Eastbound drivers do not evenly utilize the two through lanes on the west segment of the corridor and sideswipe crashes occur in the two-lane section, particularly where the two lanes merge back to one lane
- Westbound drivers do not evenly utilize the two through lanes on the west segment of the corridor and stack in the left through lane to align with the through lane at Boston Mills Road / E Case Drive
- Several rear-end crashes are caused by drivers failing to slow or stop quickly enough as they approach a signal or another driver slowing to turn
- The two-way left-turn lane on the east segment of the corridor creates confusion at the multiple driveway openings

PEDESTRIAN ACTIVITY AND FACILITIES

- At some intersections, there is only one apex curb ramp per corner. As a result, the curb ramps are oriented towards the center of the intersection instead of in the direction of pedestrian travel. Some curb ramps are also missing detectable warning surfaces
- Several crosswalks along the corridor do not have pedestrian countdown timers
- Pedestrians crossing the north leg of the intersection across Atterbury Blvd have a long crossing including crossing through the porkchop island and over the right-turn slip lane
- Pedestrian crossing the south leg of the intersection across the Gionino's driveway have confusing right-of-way across the driveway and no clear destination across the crosswalk

GEOMETRIC FEATURES

- The sidewalk fence under the railroad bridges and the Hudson Commerce Park sign obstructs sight distance for drivers turning out of the Hudson Commerce Park Driveway
- Large vehicles turning at West Streetsboro Street at Main Street track over the curbs evident by tire marks on the curbs
- There are frequent and large curb cuts at driveways along the corridor and drivers typically pull into the sidewalk to look for gaps in traffic to turn onto SR 303

POTENTIAL COUNTERMEASURES

Concepts of the potential countermeasures for the corridor are shown in Appendix C. Countermeasures which may impact crashes on the corridor include:

SEGMENT: Boston Mills Rd / E Case Dr to Atterbury Blvd

- Reallocate pavement moving markings along W Streetsboro St in front of the Hudson Plaza Shopping Center
    - Option 1: Remove second eastbound through lane and add dedicated right-turn lane at Hudson Plaza Shopping Center (West Entrance)
    - Option 2: Remove second eastbound through lane and add dedicated westbound left-turn lane at Hudson Plaza Shopping Center (West Entrance)
    - Option 2b: Remove second eastbound through lane and add dedicated eastbound right-turn lane and dedicated westbound left-turn lane at Hudson Plaza Shopping Center (West Entrance)
    - **Recommended – Option 3:** Remove second eastbound through lane, remove second westbound through lane and add dedicated eastbound right-turn lane and dedicated westbound left-turn lane, shown in Figure 6
    - Install streetscaping in additional space

Figure 6: Segment – Boston Mills Rd / E Case Dr To to Atterbury Blvd Recommended Lane Configuration (Option 3)

INTERSECTION: West Streetsboro Street at Boston Mills Road / E Case Drive

- **Short-term countermeasures**
  - Adjust signal phasing for LPIs across Boston Mills Rd and E Case Dr – Lag protected lefts from Streetsboro St
    - LPIs across Streetsboro Street are assumed to be installed with adaptive signal project
  - Restrict right-turn on red on all approaches with No Turn on Red signs – may require additional analysis to ensure mast arms can support additional loads
- **Mid-term countermeasures**
  - Upgrade curb ramps to be ADA compliant
  - Install lane guide markings in the intersection for turns
  - Install countdown timers for all crosswalks

INTERSECTION: West Streetsboro Street at Hudson Plaza Shopping Center (West Entrance)

- **Short-term countermeasures**
  - Adjust signal phasing for LPIs across the Plaza entrance - Lag protected lefts from Streetsboro St
    - LPIs across Streetsboro Street are assumed to be installed with adaptive signal project
  - Restrict right-turn on red on all approaches with No Turn on Red signs – may require additional analysis to ensure mast arms can support additional loads
  - Restripe pavement markings at stop bar exiting plaza and install high-visibility crosswalk across plaza entrance
- **Mid-term countermeasures**
  - Repair concrete pavement on entrance to the Hudson Plaza Shopping Center
  - Install countdown timers for all crosswalks
- **Long-term countermeasures**
  - Install dedicated eastbound right and westbound left-turn lanes into the Hudson Plaza Shopping Center, as shown in Corridor Option 3
    - Add traffic signal phase overlap for eastbound right-turn lane with northbound Plaza signal phase – would require 5-section signal head

INTERSECTION: West Streetsboro Street at Hudson Plaza Shopping Center (East Entrance)

- **Mid-term countermeasures**
  - Restripe pavement markings
- **Long-term countermeasures**
  - Convert from full access to left and right-in/right-out (i.e. remove left-turn out) by constructing pork-chop island

INTERSECTION: West Streetsboro Street at Atterbury Blvd / Milford Road

- **Short-term countermeasures**
  - Upgrade incandescent signal bulbs to LEDs
  - Adjust signal phasing for LPIs across Atterbury Blvd and Milford Rd - Lag protected lefts from Streetsboro St
    - LPIs across Streetsboro Street are assumed to be installed with adaptive signal project
    - Split phasing for Atterbury Blvd and Milford Road is assumed to be installed with adaptive project to address sight distance concerns from the hill on Milford Road and horizontal curve south of the intersection.
  - Restrict right-turn on red on all approaches with No Turn on Red signs – may require additional analysis to ensure mast arms can support additional loads
- **Mid-term countermeasures**
  - Cut down shrubs beside McIntyre Insurance
  - Install countdown timers for all crosswalks
- **Long-term countermeasures**
  - Increase space for left storage lane heading westbound on W Streetsboro St
  - Adjust geometry to slow westbound right-turn
  - Remove second westbound through lane west of the intersection

INTERSECTION: West Streetsboro Street at Hudson Commerce Park Driveway

- **Short-term countermeasures**
  - Modify fence termini / fence type to improve sightline
  - Move or modify storage lane self-storage sign to clear sight triangle (17.8’ from the edge of the road and a height of 3.5’)
  - Install mirror to improve visibility out of Driveway
- **Medium-term countermeasures**
  - Realign sidewalk curb

INTERSECTION: West Streetsboro Street at Library Street

- **Short-term countermeasures**
  - Upgrade traffic lights to LED
  - Adjust signal phasing for LPIs across Library St - Lag protected lefts from Streetsboro St
    - LPIs across Streetsboro Street are assumed to be installed with adaptive signal project

  - Restrict right-turn on red on eastbound and westbound approaches with No Turn on Red signs – may require additional analysis to ensure mast arms can support additional loads
    - Intersection has temporary signs on northbound and southbound approaches, signal pole and mast arm to be replaced with adaptive signal project, signs to be moved to mast arm
- **Mid-term countermeasures**
  - Install stop bar in front of pizzeria
  - Remove western pedestrian crossing – Remove all associated crossing infrastructure
  - Install high visibility crosswalk across Gionino's driveway and install truncated domes at crosswalk termini OR Remove southern pedestrian crossing – Remove two parking spaces closest to Streetsboro Street and all associated crossing/sidewalk infrastructure across driveway
  - Restripe east and north crosswalks
  - Install countdown timers on crosswalk signals

SEGMENT: Library Street to Main Street

- **Long-term countermeasures**
  - Minimize curb cuts (number of curb cuts and width of curb cuts) along corridor and modify dedicated left-turn and two-way left-turn lanes, shown in Figure 7
  - Ensure sidewalk corridor is ADA compliant

Figure 7: Segment – Library Street to Main Street Recommended Pavement Marking

INTERSECTION: West Streetsboro Street at Noble House

- **Mid-term countermeasures**
  - Relocate business sign and evaluate fence impact on sightline

INTERSECTION: West Streetsboro Street at Main Street

- **Short-term countermeasures**
  - Upgrade traffic lights to LED bulbs
  - Adjust signal phasing for LPIs on all approaches - Lag protected lefts

  - Restrict right-turn on red on all approaches with No Turn on Red signs – may require additional analysis to ensure mast arms can support additional loads
  - Investigate signing alternative truck route to avoid the intersection
- **Mid-term countermeasures**
  - Install lane guide markings
  - Upgrade crosswalk signals to countdown timers
  - Restripe crosswalks
- **Long-term countermeasures**
  - Modify curb radii to accommodate truck turning movements

POTENTIAL COUNTERMEASURE EVALUATION

CAPACITY ANALYSIS

The capacity analysis methodology for motor vehicles is based on the concepts and procedures in the Highway Capacity Manual (HCM) utilizing the latest version of *Synchro* software. The motor vehicle capacity analysis was conducted for the morning (AM), and afternoon (PM) peak hours for the existing conditions, a no build scenario, and a build scenario.

DEFINITION OF PERFORMANCE MEASURES

The following measures were used to assess the impacts to vehicular travel:

Intersection Delay – Delay is the average amount of time, in seconds, that it takes a vehicle passing through an intersection beyond what would be experienced in a free-flow condition. Intersection delay is reported as overall vehicle delay and vehicle delay by movement for select locations with re-routed traffic.

Level of Services (LOS) – Vehicular Level of Service (LOS) is a qualitative measure of traffic congestion based on the average delay for a motorist. LOS is reported as overall intersection LOS and LOS by movement for select locations with re-routed traffic. LOS A defines minimum traffic delay and is an indication that there is underutilized roadway capacity during the peak hour. LOS F represents high levels of traffic delay. The table below, excerpted from the Highway Capacity Manual, provides LOS criteria for signalized intersections.

Table 7: Level of Service Relationship with Control Delay

Level of Service	Signalized Intersection Control Delay (seconds)
A	0 to 10
B	> 10 to 20
C	> 20 to 35
D	> 35 to 55
E	> 55 to 80
F	> 80

One weakness of using vehicular level of service as a primary measure of traffic operations is that the use of a letter grade scale implies that "A" is the best condition. LOS A, B, or C means that there is excess vehicle capacity, which can have negative consequences like speeding, endangering people walking or biking. There are no national standards for LOS, and cities or states have discretion to adopt LOS targets that reflect their unique constraints and their tolerance for traffic congestion. As stated in the HCM, "the existence of a LOS F condition does not, by itself indicate that action must be taken to correct the condition" if other goals of the project are being met.

Volume-to-Capacity (v/c) Ratio – A volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group at a signalized intersection.

50th and 95th Percentile Queues – The 95th-percentile queue is defined to be the queue length (in vehicles) that has only a 5-percent probability of being exceeded. It is a useful parameter for determining the appropriate length of turn pockets, but it is not typical of what an average driver would experience. The 50th-percentile queue is the queue length on a typical cycle.

EXISTING (2021) CONDITIONS

With the existing phasing, signal timings, and 2021 traffic volumes, the overall LOS for all intersections throughout the corridor for both the morning and evening peak hours is D or better. All movements at the intersections operate at LOS D or better.

NO BUILD CONDITIONS

The 2021 volumes were maintained in the No Build Conditions but corridor changes associated with the adaptive signal project were included in this scenario. These changes include adding LPIs where there is not existing protected-permitted left-turn phasing and adding split phasing for Atterbury Boulevard / Milford Drive. While delays for motorists increase slightly, the overall LOS for all intersections the corridor for both the morning and evening peak hours is still LOS D or better.

BUILD CONDITIONS

According to the ODOT Traffic Engineering Manual Section 404-4, LPIs should not be implemented where the desired LPI phase has protected/permissive left in the same direction due to possible vehicle/pedestrian conflict. Therefore, in the Build Conditions, the protected portion of the left-turn phases were switched to lagging (i.e. the left-turn arrow would come on after the through movement and the yellow trap concern to be mitigated through flashing yellow arrow signal heads) so LPIs could be implanted for all pedestrian crossing phases, shown in the example at Boston Mills Road / E Case Street in Figure 8. The lane configuration from Option 3 (one through lane in each direction throughout the corridor) was modeled as it would have the greatest impact on vehicular capacity and is the recommended option. Additionally, right-turn on red was restricted on all approaches at all intersections in the study area. While delays for motorists increase and queue lengths slightly, compared to the Existing or No Build Conditions, the overall LOS for all intersections the corridor for both the morning and evening peak hours is still LOS D or better.

The overall intersection summary tables are given in Tables 8 and 9. The detailed tables are given in Tables 10 and 11. Detailed Synchro reports are given in Appendix D.

Figure 8: LPI and lagging left-turn phasing at Boston Mills Road / E Case Drive

Table 8: Capacity Analysis Overall Intersection Summary Table – AM Peak

Intersection	Existing (2021) Condition			No-Build Condition			Build Condition		
	V/C[a]	Delay (s)[b]	LOS[c]	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
SR 303 and Boston Mills Road / E Case Drive	9	15.7	B	0.47	16.0	B	0.48	17.2	B
SR 303 and Hudson Plaza Shopping Center (west)	0.25	7.5	A	0.25	7.2	A	0.39	11.8	B
SR 303 and Atterbury Boulevard / Milford Drive	0.49	9.9	A	0.54	14.8	B	0.59	17.7	B
SR 303 and Library Street / Gionino's Driveway	0.53	14.6	B	0.55	14.5	B	0.56	11.8	B
SR 303 and SR 91 (Main Street)	0.60	21.4	C	0.60	21.4	C	0.67	28.0	C

Table 9: Capacity Analysis Overall Intersection Summary Table – PM Peak

Intersection	Existing (2021) Condition			No-Build Condition			Build Condition		
	V/C[a]	Delay (s)[b]	LOS[c]	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
SR 303 and Boston Mills Road / E Case Drive	0.68	31.8	C	0.72	45.5	D	0.74	35.3	D
SR 303 and Hudson Plaza Shopping Center (west)	0.33	8.8	A	0.34	11.8	B	0.52	13.5	B
SR 303 and Atterbury Boulevard / Milford Drive	0.56	11.7	B	0.61	17.6	B	0.69	25.5	C
SR 303 and Library Street / Gionino's Driveway	0.67	18.0	B	0.69	17.1	B	0.70	25.3	C
SR 303 and SR 91 (Main Street)	0.71	30.5	C	0.71	30.5	C	0.82	41.3	D

Table 10: Capacity Analysis Summary Table – AM Peak

		Existing (2021) Condition				No-Build Condition				Build Condition			
Intersection	**Lane Group**	**V/C[a]**	**Delay (s)[b]**	**LOS[c]**	**Queue (50th/95th)[d]**	**V/C**	**Delay (s)**	**LOS**	**Queue (50th/95th)**	**V/C**	**Delay (s)**	**LOS**	**Queue (50th/95th)**
SR 303 and Boston Mills Road / E Case Drive	SR 303 EB Left	0.03	8.0	A	3/12	0.03	8.5	A	3/12	0.03	12.4	B	2/14
	SR 303 EB Thru/Right	0.43	12.4	B	136/323	0.44	13.3	B	141/323	0.45	14.4	B	136/373
	SR 303 WB Left	0.01	3.5	A	1/m1	0.01	2.1	A	1/m0	0.01	11.1	B	0/m2
	SR 303 WB Thru	0.37	7.1	A	122/18	0.38	8.0	A	119/232	0.39	9.6	A	39/209
	SR 303 WB Right	0.09	10.2	B	8/0	0.09	11.0	B	12/14	0.17	8.6	A	15/90
	E Case Dr NB Left/Thru/Right	0.36	50.7	D	20/52	0.37	51.1	D	20/52	0.41	51.5	D	23/55
	Boston Mills Rd SB Left/Thru	0.61	48.1	D	90/147	0.55	44.2	D	88/147	0.61	47.7	D	90/147
	Boston Mills Rd SB Right	0.00	39.9	D	0/0	0.00	38.5	C	0/0	0.02	39.9	D	2/12
	Overall	**0.44**	**15.7**	**B**	**-**	**0.47**	**16.0**	**B**	**-**	**0.48**	**17.2**	**B**	**-**
SR 303 and Hudson Plaza Shopping Center (west)	SR 303 EB Thru/Thru/Right	0.18	3.7	A	82/23	0.19	3.8	A	82/16	-	-	-	-
	SR 303 EB Thru	-	-	-	-	-	-	-	-	0.35	3.3	A	41/83
	SR 303 EB Right	-	-	-	-	-	-	-	-	0.07	2.2	A	8/m17
	SR 303 WB Left/Thru/Thru	0.22	3.5	A	3/162	0.23	2.8	A	4/97	-	-	-	-
	SR 303 WB Left	-	-	-	-	-	-	-	-	0.06	8.3	A	3/m26
	SR 303 WB Thru	-	-	-	-	-	-	-	-	0.41	13.3	A	265/335
	Hudson Plaza NB Left	0.36	46.7	D	35/73	0.36	46.7	D	35/73	0.32	45.4	D	35/69
	Hudson Plaza NB Right	0.03	44.1	D	0/36	0.03	44.1	D	0/36	0.35	45.9	D	32/66
	Overall	**0.25**	**7.5**	**A**	**-**	**0.25**	**7.2**	**A**	**-**	**0.39**	**11.8**	**B**	**-**
SR 303 and Atterbury Boulevard / Milford Drive	SR 303 EB Left	0.01	3.4	A	1/5	0.01	6.6	A	1/5	0.02	8.8	A	1/m4
	SR 303 EB Thru/Right	0.55	9.7	A	136/578	0.65	17.4	B	393/#650	0.70	17.5	B	385/#652
	SR 303 WB Left	0.10	4.5	A	11/m17	0.14	7.2	A	14/m11	0.13	26.7	C	10/m53
	SR 303 WB Thru/Thru/Right	0.24	6.1	A	73/213	0.28	8.2	A	96/177	0.52	13.2	B	152/539
	SR 303 WB Right	-	-	-	-	-	-	-	-	0.02	7.7	A	4/m22
	Milford Dr NB Left	0.15	45.3	D	10/29	0.13	45.7	D	10/30	0.12	45.2	D	10/30
	Milford Dr NB Thru/Right	0.03	44.3	D	0/13	0.03	45.0	D	0/0	0.37	47.6	D	29/62
	Atterbury Blvd SB Left	0.16	45.3	D	12/30	0.22	49.6	D	12/34	0.23	49.7	D	12/35
	Atterbury Blvd SB Thru	0.07	44.5	D	6/19	0.12	48.8	D	6/22	0.12	48.9	D	6/22
	Atterbury Blvd SB Right	0.00	3.0	A	0/0	0.00	47.7	D	0/0	0.04	48.1	D	2/12
	Overall	**0.49**	**9.9**	**A**	**-**	**0.54**	**14.8**	**B**	**-**	**0.59**	**17.7**	**B**	**-**
SR 303 and Library Street / Gionino's Driveway	SR 303 EB Left	0.16	7.4	A	17/38	0.17	6.6	A	2/m46	0.16	6.0	A	4/m9
	SR 303 EB Thru/Right	0.54	16.1	B	389/595	0.56	15.0	B	221/596	0.55	7.3	A	37/578
	SR 303 WB Left	0.00	7.5	A	0/m1	0.00	8.3	A	0/m1	0.00	11.7	B	0/m1
	SR 303 WB Thru/Right	0.57	10.4	B	182/341	0.59	11.3	B	183/341	0.62	12.8	B	210/378
	Driveway NB Left/Thru	0.00	0.0	A	0/0	0.00	0.0	A	0/0	0.00	0.0	A	0/0
	Driveway NB Right	0.00	4.0	A	0/4	0.00	4.5	A	0/4	0.00	4.2	A	0/4
	Library St SB Left/Thru	0.21	44.7	D	18/39	0.23	45.6	D	18/41	0.26	47.0	D	18/43
	Library St SB Right	0.36	46.2	D	34/60	0.40	47.3	D	34/64	0.45	49.2	D	34/68
	Overall	**0.53**	**14.6**	**B**	**-**	**0.55**	**14.5**	**B**	**-**	**0.56**	**11.8**	**B**	**-**
SR 303 and SR 91 (Main Street)	SR 303 EB Left	0.50	23.6	C	34/121	0.50	23.5	C	34/120	0.58	29.9	C	40/#68
	SR 303 EB Thru	0.54	33.0	C	122/168	0.54	33.3	C	121/168	0.68	39.0	D	103/144
	SR 303 EB Right	0.07	49.5	D	24/34	0.07	49.1	D	24/33	0.23	25.7	C	24/77
	SR 303 WB Left	0.39	29.6	C	62/95	0.39	29.6	C	62/95	0.36	33.3	C	61/107
	SR 303 WB Thru	0.74	48.3	D	161/229	0.74	48.3	D	161/229	0.76	49.7	D	162/234
	SR 303 WB Right	0.03	30.0	C	0/17	0.03	30.0	C	0/17	0.11	31.4	C	19/41
	SR 91 NB Left	0.41	5.7	A	28/70	0.41	5.7	A	28/70	0.44	25.5	C	87/162
	SR 91 NB Thru	0.57	14.6	B	180/437	0.57	14.6	B	180/437	0.66	23.5	C	304/441
	SR 91 NB Right	0.10	6.7	A	0/30	0.10	6.7	A	0/30	0.16	5.3	A	14/44
	SR 91 SB Left	0.09	15.4	B	9/m13	0.09	15.4	B	9/m13	0.15	17.2	B	3/m9
	SR 91 SB Thru	0.45	18.9	B	118/m246	0.45	18.9	B	118/m246	0.57	26.7	C	168m/246
	SR 91 SB Right	0.13	1.1	A	0/m2	0.13	1.1	A	0/m2	0.29	17.5	B	59/m74
	Overall	**0.60**	**21.4**	**C**	**-**	**0.60**	**21.4**	**C**	**-**	**0.67**	**28.0**	**C**	**-**

a – Volume-to-capacity ratio
b – Delay per vehicle in seconds
c – Level of service
d – 50th and 95th percentile queue length in feet per lane
~ volume exceeds capacity, queue is theoretically infinite
# – 95th percentile volume exceeds capacity, queue may be longer
m – volume for 95th percentile queue is metered by upstream signal

Table 11: Capacity Analysis Summary Table – PM Peak

		Existing (2021) Condition				No-Build Condition				Build Condition			
Intersection	**Lane Group**	**V/C[a]**	**Delay (s)[b]**	**LOS[c]**	**Queue (50th/95th)[d]**	**V/C**	**Delay (s)**	**LOS**	**Queue (50th/95th)**	**V/C**	**Delay (s)**	**LOS**	**Queue (50th/95th)**
SR 303 and Boston Mills Road / E Case Drive	SR 303 EB Left	0.03	18.4	B	2/8	0.04	23.5	C	2/8	0.03	32.1	C	1/10
	SR 303 EB Thru/Right	0.77	32.7	C	286/#593	0.91	51.2	D	294/#593	0.77	32.7	C	242/#672
	SR 303 WB Left	0.11	12.8	B	9/14	0.17	12.1	B	7/6	0.10	20.4	C	1/m14
	SR 303 WB Thru	0.75	29.3	C	409/#599	0.88	43.2	D	415/#618	0.74	20.7	C	27/#665
	SR 303 WB Right	0.07	17.1	B	7/6	0.07	65.8	E	6/5	0.15	14.4	B	5/88
	E Case Dr NB Left/Thru/Right	0.42	48.7	D	35/75	0.43	49.0	D	35/75	0.45	48.6	D	41/79
	Boston Mills Rd SB Left/Thru	0.66	38.4	D	185/289	0.62	35.7	D	181/#437	0.93	74.7	E	205/#367
	Boston Mills Rd SB Right	0.01	28.9	C	0/0	0.01	27.6	C	0/0	0.08	35.5	D	11/33
	Overall	**0.68**	**31.8**	**C**	**-**	**0.72**	**45.5**	**D**	**-**	**0.74**	**35.3**	**D**	**-**
SR 303 and Hudson Plaza Shopping Center (west)	SR 303 EB Thru/Thru/Right	0.27	2.9	A	21/2	0.28	2.8	A	21/1	-	-	-	-
	SR 303 EB Thru	-	-	-	-	-	-	-	-	0.54	4.1	A	109/m100
	SR 303 EB Right	-	-	-	-	-	-	-	-	0.10	1.8	A	8/m9
	SR 303 WB Left/Thru/Thru	0.26	4.3	A	3/104	0.28	12.2	B	78/248	-	-	-	-
	SR 303 WB Left	-	-	-	-	-	-	-	-	0.11	21.0	C	7/m37
	SR 303 WB Thru	-	-	-	-	-	-	-	-	0.46	14.5	B	293/477
	Hudson Plaza NB Left	0.54	45.4	D	77/130	0.54	45.7	D	77/130	0.54	45.7	D	77/130
	Hudson Plaza NB Right	0.05	40.4	D	0/41	0.05	40.5	D	0/41	0.38	43.4	D	49/92
	Overall	**0.33**	**8.8**	**A**	**-**	**0.34**	**11.8**	**B**	**-**	**0.52**	**13.5**	**B**	**-**
SR 303 and Atterbury Boulevard / Milford Drive	SR 303 EB Left	0.07	4.5	A	3/21	0.08	5.0	A	4/12	0.09	21.1	C	12/m23
	SR 303 EB Thru/Right	0.62	11.4	B	226/671	0.74	16.0	B	252/#749	0.79	30.5	C	503/#815
	SR 303 WB Left	0.12	4.8	A	1/m17	0.17	13.3	B	7/m39	0.21	19.7	B	14/m13
	SR 303 WB Thru/Thru/Right	0.29	5.1	A	67/130	0.35	12.2	B	110/217	0.63	14.5	B	397/357
	SR 303 WB Right	-	-	-	-	-	-	-	-	0.09	7.4	A	23/m36
	Milford Dr NB Left	0.12	44.3	D	8/25	0.11	45.5	D	8/26	0.09	43.8	D	8/26
	Milford Dr NB Thru/Right	0.12	44.2	D	6/49	0.05	45.2	D	0/5	0.58	51.5	D	56/104
	Atterbury Blvd SB Left	0.40	47.3	D	30/60	0.41	49.3	D	30/66	0.41	49.8	D	30/67
	Atterbury Blvd SB Thru	0.25	45.3	D	23/49	0.35	48.9	D	23/56	0.36	49.2	D	23/57
	Atterbury Blvd SB Right	0.02	4.0	A	0/0	0.02	45.9	B	0/0	0.27	48.2	D	17/46
	Overall	**0.56**	**11.7**	**B**	**-**	**0.61**	**17.6**	**B**	**-**	**0.69**	**25.5**	**C**	**-**
SR 303 and Library Street / Gionino's Driveway	SR 303 EB Left	0.29	7.5	A	9/57	0.30	3.0	A	6/m12	0.29	21.7	C	37/m35
	SR 303 EB Thru/Right	0.66	9.2	A	81/304	0.67	5.7	A	42/75	0.67	17.1	B	244/430
	SR 303 WB Left	0.03	10.2	B	3/m5	0.04	11.0	B	3/m5	0.04	19.4	B	2/m4
	SR 303 WB Thru/Right	0.63	18.5	B	371/325	0.64	19.7	B	368/325	0.68	25.9	C	350/402
	Driveway NB Left/Thru	0.05	37.4	D	6/21	0.06	38.2	D	6/22	0.06	38.2	D	6/22
	Driveway NB Right	0.01	6.3	A	2/12	0.01	6.8	A	2/12	0.01	6.8	A	2/12
	Library St SB Left/Thru	0.49	41.9	D	64/111	0.52	43.2	D	64/117	0.52	43.2	D	64/117
	Library St SB Right	0.70	49.8	D	112/174	0.74	53.7	D	112/183	0.74	53.7	D	112/183
	Overall	**0.67**	**18.0**	**B**	**-**	**0.69**	**17.1**	**B**	**-**	**0.70**	**25.3**	**C**	**-**
SR 303 and SR 91 (Main Street)	SR 303 EB Left	0.69	30.3	C	63/#122	0.69	31.4	C	64/#122	0.67	39.6	D	92/#152
	SR 303 EB Thru	0.81	43.3	D	225/268	0.81	43.6	D	195/268	0.84	53.3	D	267/#374
	SR 303 EB Right	0.22	13.0	B	11/26	0.22	11.0	B	2/24	0.43	30.0	C	156/143
	SR 303 WB Left	0.57	28.3	C	66/102	0.57	28.3	C	66/102	0.65	47.0	D	65/#142
	SR 303 WB Thru	0.73	41.1	D	219/286	0.73	41.1	D	219/286	0.84	52.1	D	225/#356
	SR 303 WB Right	0.02	25.1	C	0/0	0.02	25.1	C	0/0	0.06	25.0	C	12/33
	SR 91 NB Left	0.64	22.0	C	102/#170	0.64	22.0	C	102/#170	0.77	47.5	D	119/#208
	SR 91 NB Thru	0.50	20.4	C	224/229	0.50	20.4	C	224/229	0.67	32.3	C	297/257
	SR 91 NB Right	0.14	20.2	C	24/11	0.14	20.2	C	24/11	0.33	17.4	B	95/107
	SR 91 SB Left	0.12	21.6	C	21/m27	0.12	21.6	C	21/m27	0.15	39.6	D	21/m28
	SR 91 SB Thru	0.69	37.5	D	324/m387	0.69	37.5	D	324/m387	0.84	50.3	D	305/m#450
	SR 91 SB Right	0.12	42.1	D	31/m44	0.12	42.1	D	31/m44	0.29	27.3	C	95/m121
	Overall	**0.71**	**30.5**	**C**	**-**	**0.71**	**30.5**	**C**	**-**	**0.82**	**41.3**	**D**	**-**

a – Volume-to-capacity ratio
b – Delay per vehicle in seconds
c – Level of service
d – 50th and 95th percentile queue length in feet per lane
~ volume exceeds capacity, queue is theoretically infinite
# – 95th percentile volume exceeds capacity, queue may be longer
m – volume for 95th percentile queue is metered by upstream signal

COUNTERMEASURE COSTS

The total probable cost for the proposed countermeasures for each option for the segment from Boston Mills Rd / E Case Dr to Atterbury Blvd is listed below. An itemized opinion of probable cost is in Appendix C.

- Reallocate pavement, moving markings along W Streetsboro Street in front of the Hudson Plaza Shopping Center
    - Option 1: Remove second eastbound through lane and add dedicated right-turn lane
        - The total cost of Option 1, including engineering design, is estimated to be **$160,000.**
    - Option 2: Remove second eastbound through lane and add dedicated westbound left-turn lane
        - The total cost of Option 2, including engineering design, is estimated to be **$288,000.**
    - Option 2b: Remove second eastbound through lane and add dedicated eastbound right-turn lane and dedicated westbound left-turn lane
        - The total cost of Option 2b, including engineering design, is estimated to be **$372,000.**
    - **Recommended – Option 3:** Remove second eastbound through lane, remove second westbound through lane and add dedicated eastbound right-turn lane and dedicated westbound left-turn lane
        - The total cost of Option 3, including engineering design, is estimated to be **$323,000.**

CONCLUSIONS

This study addresses the segment of SR 303 from Boston Mills Road / E Case Drive to SR 91 (Main Street) which was ranked on the AMATS Current Crash Report for the years 2016-2018. Based on a field visit on the corridor, crash analysis, and engineering evaluation, a combination of traffic operations, pedestrian facilities, and geometric factors were determined to contribute to crashes at the intersection.

APPENDIX A

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
Intersection: SR 303 & Boston Mills Rd
Counter: SLC
Day of the Week: Tuesday

File Name : Hudson Traffic Count #13 SR303 & Boston Mills Rd 070621 Sue
Site Code : 00000000
Start Date : 7/6/2021
Page No : 1

Groups Printed- Cars - Trucks - Buses

	BOSTON MILLS ROAD From North					WEST STREETSBORO ROAD (SR 303) From East					BOSTON MILLS ROAD From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	4	9	0	13	15	68	0	0	83	1	2	3	2	8	3	87	3	2	95	199
07:15 AM	3	0	10	0	13	25	96	0	0	121	2	4	1	1	8	2	81	3	0	86	228
07:30 AM	2	10	26	0	38	34	84	0	0	118	0	4	0	0	4	1	99	1	0	101	261
07:45 AM	1	6	28	0	35	39	87	3	0	129	0	7	4	2	13	4	113	6	0	123	300
Total	6	20	73	0	99	113	335	3	0	451	3	17	8	5	33	10	380	13	2	405	988
08:00 AM	0	6	24	0	30	36	93	0	0	129	3	3	4	1	11	4	100	3	0	107	277
08:15 AM	1	4	27	0	32	30	108	0	0	138	2	5	2	0	9	3	107	2	0	112	291
08:30 AM	3	8	20	0	31	33	90	0	0	123	0	3	2	0	5	4	79	3	0	86	245
08:45 AM	0	4	28	0	32	27	119	1	0	147	1	4	1	0	6	3	79	4	0	86	271
Total	4	22	99	0	125	126	410	1	0	537	6	15	9	1	31	14	365	12	0	391	1084
09:00 AM	2	8	29	0	39	28	71	4	0	103	1	2	2	0	5	4	78	5	1	88	235
09:15 AM	1	4	21	0	26	31	86	1	0	118	0	4	2	0	6	3	90	4	0	97	247
09:30 AM	1	3	35	0	39	27	74	1	0	102	3	2	3	0	8	1	82	3	0	86	235
09:45 AM	3	6	31	0	40	38	88	3	0	129	7	5	2	0	14	4	95	6	0	105	288
Total	7	21	116	0	144	124	319	9	0	452	11	13	9	0	33	12	345	18	1	376	1005
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
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Day of the Week: Tuesday

File Name : Hudson Traffic Count #13 SR303 & Boston Mills Rd 070621 Sue
Site Code : 00000000
Start Date : 7/6/2021

Groups Printed- Cars - Trucks - Buses

	BOSTON MILLS ROAD From North					WEST STREETSBORO ROAD (SR 303) From East					BOSTON MILLS ROAD From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	1	5	25	0	31	38	99	4	0	141	2	7	4	0	13	2	98	3	0	103	288
11:15 AM	0	12	32	0	44	32	85	1	2	120	2	3	0	0	5	7	66	2	0	75	244
11:30 AM	2	7	24	0	33	37	81	2	0	120	3	8	3	0	14	3	99	1	0	103	270
11:45 AM	0	7	43	0	50	33	105	3	0	141	6	6	4	3	19	5	108	1	0	114	324
Total	3	31	124	0	158	140	370	10	2	522	13	24	11	3	51	17	371	7	0	395	1126
12:00 PM	4	8	48	0	60	37	93	2	0	132	1	6	1	0	8	1	83	3	0	87	287
12:15 PM	2	8	39	0	49	33	110	4	0	147	3	5	2	0	10	2	132	3	0	137	343
12:30 PM	2	2	40	0	44	50	115	3	0	168	4	6	1	0	11	1	95	0	0	96	319
12:45 PM	4	5	28	0	37	42	94	1	0	137	6	5	4	0	15	4	116	6	0	126	315
Total	12	23	155	0	190	162	412	10	0	584	14	22	8	0	44	8	426	12	0	446	1264
01:00 PM	1	7	32	0	40	32	103	2	0	137	3	2	4	0	9	2	90	0	0	92	278
01:15 PM	2	4	36	0	42	36	110	5	0	151	4	6	6	0	16	2	92	2	0	96	305
01:30 PM	3	5	37	0	45	45	83	4	1	133	1	1	3	0	5	5	89	1	0	95	278
01:45 PM	0	7	48	0	55	37	109	1	0	147	1	4	2	0	7	1	113	0	0	114	323
Total	6	23	153	0	182	150	405	12	1	568	9	13	15	0	37	10	384	3	0	397	1184
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
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Day of the Week: Tuesday

File Name : Hudson Traffic Count #13 SR303 & Boston Mills Rd 070621 Sue
Site Code : 00000000
Start Date : 7/6/2021

Groups Printed- Cars - Trucks - Buses

	BOSTON MILLS ROAD From North					WEST STREETSBORO ROAD (SR 303) From East					BOSTON MILLS ROAD From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	4	12	45	0	61	44	111	5	0	160	3	10	3	0	16	2	128	2	0	132	369
03:15 PM	5	5	41	0	51	33	123	7	0	163	5	4	3	0	12	2	97	0	0	99	325
03:30 PM	3	11	28	0	42	30	110	2	0	142	0	6	2	0	8	1	94	1	0	96	288
03:45 PM	1	4	38	0	43	34	77	4	0	115	0	2	0	1	3	4	97	2	0	103	264
Total	13	32	152	0	197	141	421	18	0	580	8	22	8	1	39	9	416	5	0	430	1246
04:00 PM	5	7	39	0	51	47	112	0	0	159	2	8	2	1	13	4	101	1	0	106	329
04:15 PM	5	14	36	0	55	35	117	2	0	154	2	3	2	0	7	1	129	4	0	134	350
04:30 PM	4	9	47	0	60	25	120	1	0	146	2	7	4	0	13	2	132	1	0	135	354
04:45 PM	2	12	46	0	60	23	141	4	0	168	1	7	2	0	10	3	141	2	0	146	384
Total	16	42	168	0	226	130	490	7	0	627	7	25	10	1	43	10	503	8	0	521	1417
05:00 PM	3	12	59	0	74	22	145	0	0	167	3	12	1	0	16	3	114	0	1	118	375
05:15 PM	7	22	57	0	86	31	148	6	0	185	2	3	5	0	10	6	145	1	0	152	433
05:30 PM	6	19	55	0	80	22	118	12	1	153	4	10	8	3	25	3	132	2	1	138	396
05:45 PM	1	11	53	0	65	22	116	24	0	162	3	9	5	0	17	3	112	1	0	116	360
Total	17	64	224	0	305	97	527	42	1	667	12	34	19	3	68	15	503	4	2	524	1564
Grand Total	84	278	1264	0	1626	1183	3689	112	4	4988	83	185	97	14	379	105	3693	82	5	3885	10878
Apprch %	5.2	17.1	77.7	0		23.7	74	2.2	0.1		21.9	48.8	25.6	3.7		2.7	95.1	2.1	0.1		
Total %	0.8	2.6	11.6	0	14.9	10.9	33.9	1	0	45.9	0.8	1.7	0.9	0.1	3.5	1	33.9	0.8	0	35.7	

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
Intersection: SR 303 & Boston Mills Rd
Counter: SLC
Day of the Week: Tuesday

File Name : Hudson Traffic Count #13 SR303 & Boston Mills Rd 070621 Sue
Site Code : 00000000
Start Date : 7/6/2021

Groups Printed- Cars - Trucks - Buses

	BOSTON MILLS ROAD From North					WEST STREETSBORO ROAD (SR 303) From East					BOSTON MILLS ROAD From South					WEST STREETSBORO ROAD (SR 303) From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Cars	72	276	1229	0	1577	1142	3470	110	2	4724	80	184	93	9	366	95	3485	74	4	3658	10325
% Cars	85.7	99.3	97.2	0	97	96.5	94.1	98.2	50	94.7	96.4	99.5	95.9	64.3	96.6	90.5	94.4	90.2	80	94.2	94.9
Trucks	12	2	29	0	43	36	211	2	2	251	3	1	2	5	11	8	203	8	1	220	525
% Trucks	14.3	0.7	2.3	0	2.6	3	5.7	1.8	50	5	3.6	0.5	2.1	35.7	2.9	7.6	5.5	9.8	20	5.7	4.8
Buses	0	0	6	0	6	5	8	0	0	13	0	0	2	0	2	2	5	0	0	7	28
% Buses	0	0	0.5	0	0.4	0.4	0.2	0	0	0.3	0	0	2.1	0	0.5	1.9	0.1	0	0	0.2	0.3

	BOSTON MILLS ROAD From North					WEST STREETSBORO ROAD (SR 303) From East					BOSTON MILLS ROAD From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	2	10	26	0	38	34	84	0	0	118	0	4	0	0	4	1	99	1	0	101	261
07:45 AM	1	6	**28**	0	35	**39**	87	**3**	0	129	0	**7**	**4**	**2**	**13**	**4**	**113**	**6**	0	**123**	**300**
08:00 AM	0	6	24	0	30	36	93	0	0	129	**3**	3	4	1	11	4	100	3	0	107	277
08:15 AM	1	4	27	0	32	30	**108**	0	0	**138**	2	5	2	0	9	3	107	2	0	112	291
Total Volume	4	26	105	0	135	139	372	3	0	514	5	19	10	3	37	12	419	12	0	443	1129
% App. Total	3	19.3	77.8	0		27	72.4	0.6	0		13.5	51.4	27	8.1		2.7	94.6	2.7	0		
PHF	.500	.650	.938	.000	.888	.891	.861	.250	.000	.931	.417	.679	.625	.375	.712	.750	.927	.500	.000	.900	.941

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
Intersection: SR 303 & Boston Mills Rd
Counter: SLC
Day of the Week: Tuesday

File Name : Hudson Traffic Count #13 SR303 & Boston Mills Rd 070621 Sue
Site Code : 00000000
Start Date : 7/6/2021

	BOSTON MILLS ROAD From North					WEST STREETSBORO ROAD (SR 303) From East					BOSTON MILLS ROAD From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	2	12	46	0	60	23	141	4	0	168	1	7	2	0	10	3	141	**2**	0	146	384
05:00 PM	3	12	**59**	0	74	22	145	0	0	167	3	**12**	1	0	16	3	114	0	**1**	118	375
05:15 PM	**7**	**22**	57	0	**86**	**31**	**148**	6	0	**185**	2	3	5	0	10	**6**	**145**	1	0	**152**	**433**
05:30 PM	6	19	55	0	80	22	118	**12**	**1**	153	**4**	10	**8**	**3**	**25**	3	132	2	1	138	396
Total Volume	18	65	217	0	300	98	552	22	1	673	10	32	16	3	61	15	532	5	2	554	1588
% App. Total	6	21.7	72.3	0		14.6	82	3.3	0.1		16.4	52.5	26.2	4.9		2.7	96	0.9	0.4		
PHF	.643	.739	.919	.000	.872	.790	.932	.458	.250	.909	.625	.667	.500	.250	.610	.625	.917	.625	.500	.911	.917

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
Intersection: SR 303 & ACME
Counter: JMC
Day of the Week: Tuesday

File Name : 303 acme drive joy 7621 hudson
Site Code : 00000000
Start Date : 7/6/2021
Page No : 1

Groups Printed- Cars - Trucks - Buses

	From North					WEST STREETSBORO ROAD (SR 303) From East					ACME DRIVEWAY From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	71	5	0	76	5	0	6	0	11	15	76	0	2	93	180
07:15 AM	0	0	0	0	0	0	97	19	0	116	8	0	13	0	21	4	82	0	0	86	223
07:30 AM	0	0	0	0	0	0	105	5	0	110	7	0	7	1	15	13	91	0	0	104	229
07:45 AM	0	0	0	0	0	2	109	17	0	128	12	0	15	0	27	16	104	0	0	120	275
Total	0	0	0	0	0	2	382	46	0	430	32	0	41	1	74	48	353	0	2	403	907
08:00 AM	0	0	0	0	0	0	102	15	0	117	12	0	11	0	23	15	103	0	0	118	258
08:15 AM	0	0	0	0	0	0	119	8	0	127	8	0	14	0	22	23	102	0	0	125	274
08:30 AM	0	0	0	0	0	0	102	10	0	112	13	0	13	0	26	14	79	0	0	93	231
08:45 AM	0	0	0	0	0	0	135	6	0	141	14	0	13	0	27	20	95	0	1	116	284
Total	0	0	0	0	0	0	458	39	0	497	47	0	51	0	98	72	379	0	1	452	1047
09:00 AM	0	0	0	0	0	0	82	14	0	96	10	0	12	0	22	15	86	0	0	101	219
09:15 AM	0	0	0	0	0	0	87	18	0	105	14	0	23	0	37	18	78	0	0	96	238
09:30 AM	0	0	0	0	0	0	71	7	0	78	9	0	24	0	33	30	85	0	0	115	226
09:45 AM	0	0	0	0	0	0	98	7	0	105	11	0	17	1	29	22	116	0	0	138	272
Total	0	0	0	0	0	0	338	46	0	384	44	0	76	1	121	85	365	0	0	450	955
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 303 acme drive joy 7621 hudson
Site Code : 00000000
Start Date : 7/6/2021
Page No : 2

Groups Printed- Cars - Trucks - Buses

	From North					WEST STREETSBORO ROAD (SR 303) From East					ACME DRIVEWAY From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	2	108	17	0	127	17	0	30	0	47	23	81	0	0	104	278
11:15 AM	0	0	0	0	0	0	97	29	0	126	21	0	23	0	44	32	94	0	1	127	297
11:30 AM	0	0	0	0	0	0	100	20	0	120	19	0	34	0	53	41	98	0	1	140	313
11:45 AM	0	0	0	0	0	0	101	18	0	119	25	0	35	0	60	32	134	0	3	169	348
Total	0	0	0	0	0	2	406	84	0	492	82	0	122	0	204	128	407	0	5	540	1236
12:00 PM	0	0	0	0	0	0	112	32	0	144	27	0	31	0	58	45	103	0	0	148	350
12:15 PM	0	0	0	0	0	0	106	34	0	140	19	0	38	0	57	37	118	0	0	155	352
12:30 PM	0	0	0	0	0	0	101	27	0	128	23	0	38	0	61	26	97	0	0	123	312
12:45 PM	0	0	0	0	0	0	107	26	0	133	26	0	19	0	45	39	103	0	0	142	320
Total	0	0	0	0	0	0	426	119	0	545	95	0	126	0	221	147	421	0	0	568	1334
01:00 PM	0	0	0	0	0	0	85	20	0	105	31	0	35	0	66	19	86	0	1	106	277
01:15 PM	0	0	0	0	0	0	110	22	0	132	17	0	26	0	43	42	96	0	3	141	316
01:30 PM	0	0	0	0	0	1	91	26	0	118	25	0	40	0	65	30	97	0	0	127	310
01:45 PM	0	0	0	0	0	0	91	18	0	109	17	0	45	0	62	37	95	0	1	133	304
Total	0	0	0	0	0	1	377	86	0	464	90	0	146	0	236	128	374	0	5	507	1207

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 303 acme drive joy 7621 hudson
Site Code : 00000000
Start Date : 7/6/2021
Page No : 3

Groups Printed- Cars - Trucks - Buses

	From North					WEST STREETSBORO ROAD (SR 303) From East					ACME DRIVEWAY From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	93	15	0	108	20	0	34	0	54	24	122	0	0	146	308
03:15 PM	0	0	0	0	0	0	133	8	0	141	13	0	28	0	41	31	110	0	2	143	325
03:30 PM	0	0	0	0	0	0	118	19	0	137	17	0	30	0	47	27	100	0	0	127	311
03:45 PM	0	0	0	0	0	0	98	9	0	107	13	0	24	0	37	31	107	0	0	138	282
Total	0	0	0	0	0	0	442	51	0	493	63	0	116	0	179	113	439	0	2	554	1226
04:00 PM	0	0	0	0	0	0	113	7	0	120	14	1	26	0	41	25	94	0	0	119	280
04:15 PM	0	0	0	0	0	0	114	14	0	128	13	0	32	0	45	38	126	0	0	164	337
04:30 PM	0	0	0	0	0	0	102	10	0	112	10	0	24	0	34	42	118	0	0	160	306
04:45 PM	0	0	0	0	0	2	124	13	0	139	26	0	23	0	49	27	139	0	2	168	356
Total	0	0	0	0	0	2	453	44	0	499	63	1	105	0	169	132	477	0	2	611	1279
05:00 PM	0	0	0	0	0	0	134	13	0	147	12	0	47	0	59	25	131	0	1	157	363
05:15 PM	0	0	0	0	0	0	119	16	0	135	22	0	25	0	47	29	167	0	0	196	378
05:30 PM	0	0	0	0	0	0	122	11	0	133	15	0	20	0	35	17	170	0	0	187	355
05:45 PM	0	0	0	0	0	0	103	6	0	109	12	0	38	0	50	13	120	0	0	133	292
Total	0	0	0	0	0	0	478	46	0	524	61	0	130	0	191	84	588	0	1	673	1388
Grand Total	0	0	0	0	0	7	3760	561	0	4328	577	1	913	2	1493	937	3803	0	18	4758	10579
Apprch %	0	0	0	0		0.2	86.9	13	0		38.6	0.1	61.2	0.1		19.7	79.9	0	0.4		

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

Total %	0	0	0	0	0	0.1	35.5	5.3	0	40.9	5.5	0	8.6	0	14.1	8.9	35.9	0	0.2	45	
Cars	0	0	0	0	0	7	3543	549	0	4099	565	1	896	2	1464	918	3590	0	12	4520	10083
% Cars	0	0	0	0	0	100	94.2	97.9	0	94.7	97.9	100	98.1	100	98.1	98	94.4	0	66.7	95	95.3
Trucks	0	0	0	0	0	0	207	12	0	219	12	0	16	0	28	18	201	0	6	225	472
% Trucks	0	0	0	0	0	0	5.5	2.1	0	5.1	2.1	0	1.8	0	1.9	1.9	5.3	0	33.3	4.7	4.5
Buses	0	0	0	0	0	0	10	0	0	10	0	0	1	0	1	1	12	0	0	13	24
% Buses	0	0	0	0	0	0	0.3	0	0	0.2	0	0	0.1	0	0.1	0.1	0.3	0	0	0.3	0.2

	From North					WEST STREETSBORO ROAD (SR 303) From East					ACME DRIVEWAY From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	102	**15**	0	117	12	0	11	0	23	15	**103**	**0**	**0**	**118**	**258**
08:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**119**	**8**	**0**	**127**	**8**	**0**	**14**	0	22	**23**	102	0	0	**125**	274
08:30 AM	0	0	0	0	0	0	102	10	0	112	13	0	13	0	26	14	79	0	0	93	231
08:45 AM	0	0	0	0	0	0	**135**	6	0	**141**	**14**	0	13	0	**27**	20	95	0	**1**	116	**284**
Total Volume	0	0	0	0	0	0	458	39	0	497	47	0	51	0	98	72	379	0	1	452	1047
% App. Total	0	0	0	0		0	92.2	7.8	0		48	0	52	0		15.9	83.8	0	0.2		
PHF	.000	.000	.000	.000	.000	.000	.848	.650	.000	.881	.839	.000	.911	.000	.907	.783	.920	.000	.250	.904	.922
Cars	0	0	0	0	0	0	434	37	0	471	44	0	51	0	95	71	348	0	0	419	985
% Cars	0	0	0	0	0	0	94.8	94.9	0	94.8	93.6	0	100	0	96.9	98.6	91.8	0	0	92.7	94.1
Trucks	0	0	0	0	0	0	23	2	0	25	3	0	0	0	3	1	30	0	1	32	60
% Trucks	0	0	0	0	0	0	5.0	5.1	0	5.0	6.4	0	0	0	3.1	1.4	7.9	0	100	7.1	5.7
Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
% Buses	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.3	0	0	0.2	0.2

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : 303 acme drive joy 7621 hudson
Site Code : 00000000
Start Date : 7/6/2021
Page No : 5

	From North					WEST STREETSBORO ROAD (SR 303) From East					ACME DRIVEWAY From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	**2**	**124**	**13**	**0**	**139**	**26**	0	23	0	49	27	139	0	**2**	168	356
05:00 PM	0	0	0	0	0	0	**134**	13	0	**147**	12	0	**47**	0	**59**	25	131	0	1	157	363
05:15 PM	0	0	0	0	0	0	119	**16**	0	135	22	0	25	0	47	**29**	167	0	0	**196**	**378**
05:30 PM	0	0	0	0	0	0	122	11	0	133	15	0	20	0	35	17	**170**	**0**	**0**	**187**	**355**
Total Volume	**0**	**0**	**0**	**0**	**0**	**2**	**499**	**53**	**0**	**554**	**75**	**0**	**115**	**0**	**190**	**98**	**607**	**0**	**3**	**708**	**1452**
% App. Total	**0**	**0**	**0**	**0**		**0.4**	**90.1**	**9.6**	**0**		**39.5**	**0**	**60.5**	**0**		**13.8**	**85.7**	**0**	**0.4**		
PHF	**.000**	**.000**	**.000**	**.000**	**.000**	**.250**	**.931**	**.828**	**.000**	**.942**	**.721**	**.000**	**.612**	**.000**	**.805**	**.845**	**.893**	**.000**	**.375**	**.903**	**.960**
Cars	**0**	**0**	**0**	**0**	**0**	**2**	**475**	**53**	**0**	**530**	**75**	**0**	**113**	**0**	**188**	**97**	**596**	**0**	**3**	**696**	**1414**
% Cars	**0**	**0**	**0**	**0**	**0**	**100**	**95.2**	**100**	**0**	**95.7**	**100**	**0**	**98.3**	**0**	**98.9**	**99.0**	**98.2**	**0**	**100**	**98.3**	**97.4**
Trucks	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**0**	**22**	**0**	**0**	**2**	**0**	**2**	**1**	**10**	**0**	**0**	**11**	**35**
% Trucks	**0**	**0**	**0**	**0**	**0**	**0**	**4.4**	**0**	**0**	**4.0**	**0**	**0**	**1.7**	**0**	**1.1**	**1.0**	**1.6**	**0**	**0**	**1.6**	**2.4**
Buses	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**3**
% Buses	**0**	**0**	**0**	**0**	**0**	**0**	**0.4**	**0**	**0**	**0.4**	**0**	**0**	**0**	**0**	**0**	**0**	**0.2**	**0**	**0**	**0.1**	**0.2**

TMS Engineers, Inc.
2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
Intersection: SR 303 & Milford + Atterbury
Counter: SLC
Day of the Week: Thursday

File Name : Hudson Traffic Count #11 W Streetsboro Rd & Atterbury Blvd 051321 Sue
Site Code : 00000000
Start Date : 5/13/2021
Page No : 1

Groups Printed- Cars - Trucks - Buses

	ATTERBURY BOULEVARD From North					W STREETSBORO ROAD (SR 303) From East					MILFORD ROAD From South					W STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	3	1	3	1	8	2	74	8	0	84	4	2	5	0	11	5	103	1	0	109	212
07:15 AM	0	1	5	0	6	3	120	9	0	132	12	1	1	1	15	5	146	1	1	153	306
07:30 AM	1	3	3	0	7	4	141	8	1	154	6	1	1	0	8	7	184	1	0	192	361
07:45 AM	1	3	4	0	8	10	155	16	0	181	11	1	9	1	22	9	157	2	0	168	379
Total	5	8	15	1	29	19	490	41	1	551	33	5	16	2	56	26	590	5	1	622	1258
08:00 AM	1	1	4	0	6	3	130	15	0	148	6	0	5	0	11	5	124	1	0	130	295
08:15 AM	0	2	10	0	12	2	102	4	2	110	6	2	3	4	15	3	115	1	0	119	256
08:30 AM	2	1	2	0	5	8	120	20	0	148	8	1	3	0	12	7	181	1	0	189	354
08:45 AM	2	7	5	0	14	5	137	13	0	155	3	0	1	2	6	1	129	1	0	131	306
Total	5	11	21	0	37	18	489	52	2	561	23	3	12	6	44	16	549	4	0	569	1211
09:00 AM	3	7	5	0	15	5	157	8	0	170	9	0	4	0	13	3	107	0	0	110	308
09:15 AM	1	2	4	0	7	2	104	10	0	116	10	2	1	0	13	6	96	0	0	102	238
09:30 AM	2	4	2	0	8	6	115	7	0	128	7	1	3	0	11	3	107	1	0	111	258
09:45 AM	2	5	2	2	11	6	119	14	4	143	4	2	1	0	7	4	134	3	0	141	302
Total	8	18	13	2	41	19	495	39	4	557	30	5	9	0	44	16	444	4	0	464	1106

TMS Engineers, Inc.
2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
Intersection: SR 303 & Milford + Atterbury
Counter: SLC
Day of the Week: Thursday

File Name : Hudson Traffic Count #11 W Streetsboro Rd & Atterbury Blvd 051321 Sue
Site Code : 00000000
Start Date : 5/13/2021

Groups Printed- Cars - Trucks - Buses

	ATTERBURY BOULEVARD From North					W STREETSBORO ROAD (SR 303) From East					MILFORD ROAD From South					W STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	2	5	0	7	9	118	12	0	139	10	3	2	0	15	2	133	10	0	145	306
11:15 AM	8	9	13	0	30	14	129	6	0	149	9	5	3	1	18	5	142	13	1	161	358
11:30 AM	8	4	10	0	22	14	132	15	1	162	17	3	2	1	23	7	137	16	0	160	367
11:45 AM	3	10	10	0	23	21	134	12	1	168	12	9	1	1	23	7	153	12	0	172	386
Total	19	25	38	0	82	58	513	45	2	618	48	20	8	3	79	21	565	51	1	638	1417
12:00 PM	7	5	14	0	26	25	140	12	0	177	8	7	2	2	19	7	175	16	0	198	420
12:15 PM	4	4	16	0	24	28	129	9	0	166	6	10	6	0	22	2	109	10	0	121	333
12:30 PM	10	7	19	0	36	24	126	8	3	161	14	2	2	5	23	1	147	12	1	161	381
12:45 PM	6	5	25	0	36	22	109	19	0	150	15	6	5	2	28	1	152	14	2	169	383
Total	27	21	74	0	122	99	504	48	3	654	43	25	15	9	92	11	583	52	3	649	1517
01:00 PM	18	8	20	0	46	22	150	13	2	187	19	3	4	2	28	3	154	14	2	173	434
01:15 PM	20	6	6	2	34	17	161	9	1	188	6	6	3	2	17	4	141	6	0	151	390

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
Intersection: SR 303 & Milford + Atterbury
Counter: SLC
Day of the Week: Thursday

File Name : Hudson Traffic Count #11 W Streetsboro Rd & Atterbury Blvd 051321 Sue
Site Code : 00000000
Start Date : 5/13/2021

Groups Printed- Cars - Trucks - Buses

	ATTERBURY BOULEVARD From North					W STREETSBORO ROAD (SR 303) From East					MILFORD ROAD From South					W STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
01:30 PM	4	6	14	0	24	23	128	13	0	164	7	6	2	0	15	3	143	3	0	149	352
01:45 PM	5	4	6	0	15	11	120	13	0	144	11	3	3	2	19	6	125	7	0	138	316
Total	47	24	46	2	119	73	559	48	3	683	43	18	12	6	79	16	563	30	2	611	1492
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	1	3	9	1	14	12	153	14	1	180	7	4	3	1	15	4	132	5	2	143	352
03:15 PM	8	4	4	0	16	13	168	7	1	189	4	2	4	5	15	5	159	10	1	175	395
03:30 PM	3	2	5	0	10	9	155	7	0	171	11	5	2	18	36	6	141	11	18	176	393
03:45 PM	7	4	9	0	20	8	147	12	0	167	13	1	2	0	16	7	182	5	0	194	397
Total	19	13	27	1	60	42	623	40	2	707	35	12	11	24	82	22	614	31	21	688	1537
04:00 PM	5	5	7	0	17	9	193	11	2	215	13	6	4	2	25	3	185	6	2	196	453
04:15 PM	8	5	12	0	25	5	153	8	0	166	14	6	1	9	30	3	160	3	0	166	387
04:30 PM	3	6	11	0	20	8	136	10	3	157	5	10	3	5	23	6	199	8	4	217	417
04:45 PM	4	11	8	0	23	15	146	9	2	172	16	16	6	1	39	6	169	10	0	185	419
Total	20	27	38	0	85	37	628	38	7	710	48	38	14	17	117	18	713	27	6	764	1676

TMS Engineers, Inc.
2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
Intersection: SR 303 & Milford + Atterbury
Counter: SLC
Day of the Week: Thursday

File Name : Hudson Traffic Count #11 W Streetsboro Rd & Atterbury Blvd 051321 Sue
Site Code : 00000000
Start Date : 5/13/2021

Groups Printed- Cars - Trucks - Buses

	ATTERBURY BOULEVARD From North					W STREETSBORO ROAD (SR 303) From East					MILFORD ROAD From South					W STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
05:00 PM	7	10	8	0	25	12	159	15	2	188	9	4	4	4	21	4	176	7	2	189	423
05:15 PM	5	8	13	0	26	25	163	15	4	207	11	3	1	5	20	6	184	14	0	204	457
05:30 PM	9	5	14	0	28	20	138	13	1	172	8	10	2	2	22	4	194	5	2	205	427
05:45 PM	6	13	10	0	29	22	130	12	3	167	12	9	3	0	24	6	178	8	0	192	412
Total	27	36	45	0	108	79	590	55	10	734	40	26	10	11	87	20	732	34	4	790	1719
Grand Total	177	183	317	6	683	444	4891	406	34	5775	343	152	107	78	680	166	5353	238	38	5795	12933
Apprch %	25.9	26.8	46.4	0.9		7.7	84.7	7	0.6		50.4	22.4	15.7	11.5		2.9	92.4	4.1	0.7		
Total %	1.4	1.4	2.5	0	5.3	3.4	37.8	3.1	0.3	44.7	2.7	1.2	0.8	0.6	5.3	1.3	41.4	1.8	0.3	44.8	
Cars	174	179	307	6	666	434	4630	401	33	5498	336	148	101	71	656	161	5082	233	35	5511	12331
% Cars	98.3	97.8	96.8	100	97.5	97.7	94.7	98.8	97.1	95.2	98	97.4	94.4	91	96.5	97	94.9	97.9	92.1	95.1	95.3
Trucks	3	1	7	0	11	8	209	4	1	222	6	4	5	7	22	4	214	5	3	226	481
% Trucks	1.7	0.5	2.2	0	1.6	1.8	4.3	1	2.9	3.8	1.7	2.6	4.7	9	3.2	2.4	4	2.1	7.9	3.9	3.7
Buses	0	3	3	0	6	2	52	1	0	55	1	0	1	0	2	1	57	0	0	58	121
% Buses	0	1.6	0.9	0	0.9	0.5	1.1	0.2	0	1	0.3	0	0.9	0	0.3	0.6	1.1	0	0	1	0.9

TMS Engineers, Inc.
2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
Intersection: SR 303 & Milford + Atterbury
Counter: SLC
Day of the Week: Thursday

File Name : Hudson Traffic Count #11 W Streetsboro Rd & Atterbury Blvd 051321 Sue
Site Code : 00000000
Start Date : 5/13/2021
Page No : 5

	ATTERBURY BOULEVARD From North					W STREETSBORO ROAD (SR 303) From East					MILFORD ROAD From South					W STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	1	**5**	0	6	3	120	9	0	132	**12**	**1**	1	**1**	15	5	146	1	**1**	153	306
07:30 AM	**1**	**3**	3	0	7	4	141	8	**1**	154	6	1	1	0	8	7	**184**	1	0	**192**	361
07:45 AM	1	3	4	0	**8**	**10**	**155**	**16**	0	**181**	11	1	**9**	1	**22**	**9**	157	**2**	0	168	**379**
08:00 AM	1	1	4	0	6	3	130	15	0	148	6	0	5	0	11	5	124	1	0	130	295
Total Volume	3	8	16	0	27	20	546	48	1	615	35	3	16	2	56	26	611	5	1	643	1341
% App. Total	11.1	29.6	59.3	0		3.3	88.8	7.8	0.2		62.5	5.4	28.6	3.6		4	95	0.8	0.2		
PHF	.750	.667	.800	.000	.844	.500	.881	.750	.250	.849	.729	.750	.444	.500	.636	.722	.830	.625	.250	.837	.885
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	4	**11**	8	0	23	15	146	9	2	172	**16**	**16**	**6**	1	**39**	**6**	169	10	0	185	419
05:00 PM	7	10	8	0	25	12	159	**15**	2	188	9	4	4	4	21	4	176	7	**2**	189	423
05:15 PM	5	8	13	0	26	**25**	**163**	15	**4**	**207**	11	3	1	**5**	20	6	184	**14**	0	204	**457**
05:30 PM	**9**	5	**14**	0	**28**	20	138	13	1	172	8	10	2	2	22	4	**194**	5	2	**205**	427
Total Volume	25	34	43	0	102	72	606	52	9	739	44	33	13	12	102	20	723	36	4	783	1726
% App. Total	24.5	33.3	42.2	0		9.7	82	7	1.2		43.1	32.4	12.7	11.8		2.6	92.3	4.6	0.5		
PHF	.694	.773	.768	.000	.911	.720	.929	.867	.563	.893	.688	.516	.542	.600	.654	.833	.932	.643	.500	.955	.944

TMS Engineers, Inc.
2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
Intersection: SR 303 & Library St
Counter: DJS
Day of the Week: Thursday

File Name : TC 10 Library St and SR 303 051321 DJS
Site Code : 00000000
Start Date : 5/13/2021

Groups Printed- Cars - Trucks - Buses

	LIBRARY TREET From North					WEST STREETSBORO ROAD (SR 303) From East					LIBRARY TREET From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	6	0	2	0	8	2	83	0	1	86	0	0	0	0	0	0	97	11	0	108	202
07:15 AM	13	0	4	1	18	2	129	1	0	132	1	0	0	0	1	0	156	14	1	171	322
07:30 AM	10	0	4	0	14	4	150	0	0	154	1	0	0	0	1	0	172	14	0	186	355
07:45 AM	16	0	9	0	25	4	173	0	0	177	0	0	0	0	0	1	167	22	0	190	392
Total	45	0	19	1	65	12	535	1	1	549	2	0	0	0	2	1	592	61	1	655	1271
08:00 AM	6	0	7	0	13	3	143	0	0	146	0	0	0	0	0	0	112	17	0	129	288
08:15 AM	8	0	3	0	11	11	112	0	0	123	0	0	0	0	0	1	120	19	0	140	274
08:30 AM	11	0	6	0	17	4	134	1	0	139	0	0	0	0	0	0	167	30	0	197	353
08:45 AM	11	0	10	1	22	7	159	0	0	166	0	0	0	0	0	0	132	18	0	150	338
Total	36	0	26	1	63	25	548	1	0	574	0	0	0	0	0	1	531	84	0	616	1253
09:00 AM	23	0	5	0	28	5	150	0	0	155	0	0	0	0	0	0	99	19	0	118	301
09:15 AM	7	0	4	0	11	2	118	0	0	120	0	0	1	0	1	1	111	16	0	128	260
09:30 AM	20	0	8	0	28	6	125	3	1	135	0	0	0	0	0	1	108	13	0	122	285
09:45 AM	18	0	10	0	28	5	112	1	3	121	0	0	0	0	0	2	119	28	0	149	298
Total	68	0	27	0	95	18	505	4	4	531	0	0	1	0	1	4	437	76	0	517	1144

TMS Engineers, Inc.
2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : TC 10 Library St and SR 303 051321 DJS
Site Code : 00000000
Start Date : 5/13/2021

Groups Printed- Cars - Trucks - Buses

	LIBRARY TREET From North					WEST STREETSBORO ROAD (SR 303) From East					LIBRARY TREET From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
11:00 AM	22	0	11	3	36	14	117	2	0	133	1	0	0	0	1	1	128	24	0	153	323
11:15 AM	27	0	12	0	39	10	135	1	1	147	5	0	0	0	5	1	135	32	0	168	359
11:30 AM	32	0	14	0	46	16	124	1	0	141	0	0	0	0	0	0	139	34	0	173	360
11:45 AM	20	0	16	2	38	9	152	1	1	163	0	0	2	0	2	2	139	46	0	187	390
Total	101	0	53	5	159	49	528	5	2	584	6	0	2	0	8	4	541	136	0	681	1432
12:00 PM	35	0	22	0	57	18	153	0	3	174	2	0	1	0	3	3	174	46	0	223	457
12:15 PM	29	0	18	0	47	15	156	0	3	174	1	3	1	0	5	2	111	41	0	154	380
12:30 PM	41	0	15	0	56	17	146	4	1	168	1	0	1	0	2	2	166	33	2	203	429
12:45 PM	25	0	26	0	51	8	139	0	1	148	0	0	0	0	0	0	161	41	0	202	401
Total	130	0	81	0	211	58	594	4	8	664	4	3	3	0	10	7	612	161	2	782	1667
01:00 PM	39	1	21	1	62	13	152	1	3	169	3	0	1	0	4	0	164	35	0	199	434
01:15 PM	38	0	22	0	60	10	142	0	1	153	1	0	1	0	2	2	126	36	0	164	379

TMS Engineers, Inc.
2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : TC 10 Library St and SR 303 051321 DJS
Site Code : 00000000
Start Date : 5/13/2021

Groups Printed- Cars - Trucks - Buses

	LIBRARY TREET From North					WEST STREETSBORO ROAD (SR 303) From East					LIBRARY TREET From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
01:30 PM	35	0	20	0	55	8	145	0	0	153	3	0	1	0	4	0	148	27	0	175	387
01:45 PM	39	0	19	0	58	10	120	0	0	130	2	3	2	0	7	0	118	29	0	147	342
Total	151	1	82	1	235	41	559	1	4	605	9	3	5	0	17	2	556	127	0	685	1542
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	32	0	20	0	52	12	165	0	0	177	1	1	0	13	15	2	141	17	0	160	404
03:15 PM	36	0	18	2	56	10	183	0	0	193	0	0	2	1	3	0	153	23	1	177	429
03:30 PM	38	0	19	15	72	10	176	2	0	188	0	0	0	0	0	1	160	40	0	201	461
03:45 PM	32	0	15	2	49	15	151	4	0	170	3	0	2	0	5	2	185	19	3	209	433
Total	138	0	72	19	229	47	675	6	0	728	4	1	4	14	23	5	639	99	4	747	1727
04:00 PM	32	0	19	0	51	10	184	0	0	194	1	0	1	0	2	0	173	30	0	203	450
04:15 PM	20	0	39	0	59	8	142	2	0	152	3	0	1	0	4	2	171	29	0	202	417
04:30 PM	50	0	13	0	63	16	104	3	2	125	1	0	0	0	1	2	193	26	0	221	410
04:45 PM	35	3	23	0	61	11	140	2	0	153	0	0	2	0	2	2	171	36	0	209	425
Total	137	3	94	0	234	45	570	7	2	624	5	0	4	0	9	6	708	121	0	835	1702

TMS Engineers, Inc.
2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : TC 10 Library St and SR 303 051321 DJS
Site Code : 00000000
Start Date : 5/13/2021

Groups Printed- Cars - Trucks - Buses

	LIBRARY TREET From North					WEST STREETSBORO ROAD (SR 303) From East					LIBRARY TREET From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
05:00 PM	37	0	20	1	58	12	168	2	5	187	2	0	4	0	6	3	181	20	0	204	455
05:15 PM	53	0	24	0	77	7	149	4	3	163	6	0	3	0	9	1	199	32	1	233	482
05:30 PM	38	0	27	0	65	10	140	2	0	152	3	0	1	0	4	2	185	31	0	218	439
05:45 PM	31	0	24	3	58	15	136	4	1	156	5	0	1	0	6	0	162	22	0	184	404
Total	159	0	95	4	258	44	593	12	9	658	16	0	9	0	25	6	727	105	1	839	1780
Grand Total	965	4	549	31	1549	339	5108	41	30	5518	46	7	28	14	95	36	5343	970	8	6357	13519
Apprch %	62.3	0.3	35.4	2		6.1	92.6	0.7	0.5		48.4	7.4	29.5	14.7		0.6	84	15.3	0.1		
Total %	7.1	0	4.1	0.2	11.5	2.5	37.8	0.3	0.2	40.8	0.3	0.1	0.2	0.1	0.7	0.3	39.5	7.2	0.1	47	
Cars	944	4	539	31	1518	328	4854	39	27	5248	43	4	28	13	88	35	5063	951	5	6054	12908
% Cars	97.8	100	98.2	100	98	96.8	95	95.1	90	95.1	93.5	57.1	100	92.9	92.6	97.2	94.8	98	62.5	95.2	95.5
Trucks	20	0	9	0	29	10	202	2	3	217	3	3	0	1	7	1	220	18	3	242	495
% Trucks	2.1	0	1.6	0	1.9	2.9	4	4.9	10	3.9	6.5	42.9	0	7.1	7.4	2.8	4.1	1.9	37.5	3.8	3.7
Buses	1	0	1	0	2	1	52	0	0	53	0	0	0	0	0	0	60	1	0	61	116
% Buses	0.1	0	0.2	0	0.1	0.3	1	0	0	1	0	0	0	0	0	0	1.1	0.1	0	1	0.9

TMS Engineers, Inc.
2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : TC 10 Library St and SR 303 051321 DJS
Site Code : 00000000
Start Date : 5/13/2021
Page No : 5

	LIBRARY TREET From North					WEST STREETSBORO ROAD (SR 303) From East					LIBRARY TREET From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	13	0	4	**1**	18	2	129	**1**	0	132	**1**	0	0	0	**1**	0	156	14	**1**	171	322
07:30 AM	10	0	4	0	14	**4**	150	0	0	154	1	0	0	0	1	0	**172**	14	0	186	355
07:45 AM	**16**	0	**9**	0	**25**	4	**173**	0	0	**177**	0	0	0	0	0	**1**	167	**22**	0	**190**	**392**
08:00 AM	6	0	7	0	13	3	143	0	0	146	0	0	0	0	0	0	112	17	0	129	288
Total Volume	45	0	24	1	70	13	595	1	0	609	2	0	0	0	2	1	607	67	1	676	1357
% App. Total	64.3	0	34.3	1.4		2.1	97.7	0.2	0		100	0	0	0		0.1	89.8	9.9	0.1		
PHF	.703	.000	.667	.250	.700	.813	.860	.250	.000	.860	.500	.000	.000	.000	.500	.250	.882	.761	.250	.889	.865
Cars	43	0	24	1	68	9	562	1	0	572	1	0	0	0	1	1	564	64	1	630	1271
% Cars	95.6	0	100	100	97.1	69.2	94.5	100	0	93.9	50.0	0	0	0	50.0	100	92.9	95.5	100	93.2	93.7
Trucks	2	0	0	0	2	3	18	0	0	21	1	0	0	0	1	0	28	3	0	31	55
% Trucks	4.4	0	0	0	2.9	23.1	3.0	0	0	3.4	50.0	0	0	0	50.0	0	4.6	4.5	0	4.6	4.1
Buses	0	0	0	0	0	1	15	0	0	16	0	0	0	0	0	0	15	0	0	15	31
% Buses	0	0	0	0	0	7.7	2.5	0	0	2.6	0	0	0	0	0	0	2.5	0	0	2.2	2.3

TMS Engineers, Inc.
2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : TC 10 Library St and SR 303 051321 DJS
Site Code : 00000000
Start Date : 5/13/2021
Page No : 6

	LIBRARY TREET From North					WEST STREETSBORO ROAD (SR 303) From East					LIBRARY TREET From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	35	**3**	23	0	61	11	140	2	0	153	0	0	2	0	2	2	171	**36**	0	209	425
05:00 PM	37	0	20	**1**	58	**12**	**168**	2	**5**	**187**	2	0	**4**	0	6	**3**	181	20	0	204	455
05:15 PM	**53**	0	24	0	**77**	7	149	**4**	3	163	**6**	0	3	0	**9**	1	**199**	32	**1**	**233**	**482**
05:30 PM	38	0	**27**	0	65	10	140	2	0	152	3	0	1	0	4	2	185	31	0	218	439
Total Volume	163	3	94	1	261	40	597	10	8	655	11	0	10	0	21	8	736	119	1	864	1801
% App. Total	62.5	1.1	36	0.4		6.1	91.1	1.5	1.2		52.4	0	47.6	0		0.9	85.2	13.8	0.1		
PHF	.769	.250	.870	.250	.847	.833	.888	.625	.400	.876	.458	.000	.625	.000	.583	.667	.925	.826	.250	.927	.934
Cars	162	3	92	1	258	39	583	10	8	640	11	0	10	0	21	8	722	119	0	849	1768
% Cars	99.4	100	97.9	100	98.9	97.5	97.7	100	100	97.7	100	0	100	0	100	100	98.1	100	0	98.3	98.2
Trucks	1	0	2	0	3	1	13	0	0	14	0	0	0	0	0	0	13	0	1	14	31
% Trucks	0.6	0	2.1	0	1.1	2.5	2.2	0	0	2.1	0	0	0	0	0	0	1.8	0	100	1.6	1.7
Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
% Buses	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0	0.1	0	0	0.1	0.1

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

City: Hudson
Intersection: SR 91 & SR 303
Counter: GFA & DJS
Day of the Week: Tuesday

File Name : SR 303 & SR 91 070621
Site Code : 00000000
Start Date : 7/6/2021

Groups Printed- Cars - Trucks - Buses

	MAIN STREET (SR 91) From North					WEST STREETSBORO ROAD (SR 303) From East					MAIN STREET (SR 91) From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	29	42	4	0	75	4	39	19	0	62	6	65	27	0	98	16	36	35	1	88	323
07:15 AM	35	65	4	0	104	5	55	19	2	81	13	78	40	0	131	13	37	40	0	90	406
07:30 AM	33	60	6	0	99	9	64	28	0	101	17	91	26	0	134	24	37	38	0	99	433
07:45 AM	54	94	12	0	160	6	72	29	1	108	26	92	48	0	166	21	57	35	0	113	547
Total	151	261	26	0	438	24	230	95	3	352	62	326	141	0	529	74	167	148	1	390	1709
08:00 AM	44	71	4	0	119	6	66	32	0	104	29	90	33	0	152	31	57	44	0	132	507
08:15 AM	50	78	5	0	133	6	63	23	0	92	21	89	59	0	169	19	49	32	0	100	494
08:30 AM	51	56	4	1	112	12	73	33	0	118	20	89	48	0	157	18	52	41	0	111	498
08:45 AM	60	91	6	0	157	11	68	33	0	112	32	124	47	0	203	19	50	35	0	104	576
Total	205	296	19	1	521	35	270	121	0	426	102	392	187	0	681	87	208	152	0	447	2075
09:00 AM	33	85	5	0	123	7	58	35	0	100	34	101	57	0	192	28	45	34	0	107	522
09:15 AM	42	73	8	0	123	10	60	29	0	99	29	116	53	0	198	24	43	34	1	102	522
09:30 AM	39	76	10	0	125	10	47	25	1	83	32	118	49	3	202	25	48	26	0	99	509
09:45 AM	40	69	7	0	116	11	64	34	2	111	43	65	65	0	173	37	73	35	0	145	545
Total	154	303	30	0	487	38	229	123	3	393	138	400	224	3	765	114	209	129	1	453	2098
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : SR 303 & SR 91 070621
Site Code : 00000000
Start Date : 7/6/2021
Page No : 2

Groups Printed- Cars - Trucks - Buses

	MAIN STREET (SR 91) From North					WEST STREETSBORO ROAD (SR 303) From East					MAIN STREET (SR 91) From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	45	67	15	2	129	10	85	27	0	122	28	69	56	0	153	33	58	24	0	115	519
11:15 AM	40	74	18	0	132	7	91	32	0	130	34	82	65	0	181	35	58	28	0	121	564
11:30 AM	51	74	11	1	137	8	80	33	1	122	37	77	66	1	181	36	66	36	2	140	580
11:45 AM	41	85	12	0	138	8	83	29	0	120	47	87	72	1	207	34	64	36	0	134	599
Total	177	300	56	3	536	33	339	121	1	494	146	315	259	2	722	138	246	124	2	510	2262
12:00 PM	47	66	14	0	127	5	83	39	1	128	29	108	87	0	224	46	73	44	1	164	643
12:15 PM	59	72	11	2	144	16	77	16	0	109	36	110	76	0	222	55	69	40	0	164	639
12:30 PM	52	84	9	5	150	12	74	27	0	113	32	107	87	0	226	52	69	44	1	166	655
12:45 PM	46	83	7	0	136	10	78	36	0	124	30	68	62	0	160	41	68	39	0	148	568
Total	204	305	41	7	557	43	312	118	1	474	127	393	312	0	832	194	279	167	2	642	2505
01:00 PM	46	104	13	0	163	9	58	23	0	90	34	86	78	2	200	51	60	34	0	145	598
01:15 PM	38	93	8	0	139	9	83	22	0	114	31	61	55	0	147	46	78	30	0	154	554
01:30 PM	43	92	14	1	150	9	68	28	0	105	23	79	59	1	162	56	61	28	0	145	562
01:45 PM	45	59	15	1	120	11	77	35	0	123	28	77	65	0	170	48	68	44	0	160	573
Total	172	348	50	2	572	38	286	108	0	432	116	303	257	3	679	201	267	136	0	604	2287
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : SR 303 & SR 91 070621
Site Code : 00000000
Start Date : 7/6/2021
Page No : 3

Groups Printed- Cars - Trucks - Buses

	MAIN STREET (SR 91) From North					WEST STREETSBORO ROAD (SR 303) From East					MAIN STREET (SR 91) From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	33	82	18	0	133	10	70	40	0	120	44	68	57	2	171	35	88	42	0	165	589
03:15 PM	49	90	9	0	148	10	81	29	0	120	44	74	44	2	164	47	68	30	0	145	577
03:30 PM	37	77	12	1	127	13	95	29	1	138	42	80	69	0	191	49	86	44	0	179	635
03:45 PM	36	96	15	3	150	8	64	29	0	101	47	94	60	0	201	57	72	31	0	160	612
Total	155	345	54	4	558	41	310	127	1	479	177	316	230	4	727	188	314	147	0	649	2413
04:00 PM	36	95	15	0	146	15	71	57	0	143	43	85	58	0	186	36	71	41	0	148	623
04:15 PM	43	91	9	0	143	15	76	31	0	122	41	77	66	0	184	47	88	33	0	168	617
04:30 PM	61	122	12	0	195	14	81	25	1	121	49	63	52	2	166	48	62	41	0	151	633
04:45 PM	52	106	18	6	182	6	100	40	0	146	76	79	67	0	222	48	93	48	5	194	744
Total	192	414	54	6	666	50	328	153	1	532	209	304	243	2	758	179	314	163	5	661	2617
05:00 PM	41	116	9	0	166	9	80	29	0	118	56	110	60	0	226	78	86	52	0	216	726
05:15 PM	26	133	11	0	170	6	95	37	0	138	43	124	61	0	228	62	98	42	0	202	738
05:30 PM	49	120	9	1	179	8	70	45	0	123	45	94	53	0	192	50	92	48	0	190	684
05:45 PM	42	102	21	0	165	10	66	31	0	107	56	72	53	0	181	56	93	35	0	184	637
Total	158	471	50	1	680	33	311	142	0	486	200	400	227	0	827	246	369	177	0	792	2785
Grand Total	1568	3043	380	24	5015	335	2615	1108	10	4068	1277	3149	2080	14	6520	1421	2373	1343	11	5148	20751
Apprch %	31.3	60.7	7.6	0.5		8.2	64.3	27.2	0.2		19.6	48.3	31.9	0.2		27.6	46.1	26.1	0.2		
Total %	7.6	14.7	1.8	0.1	24.2	1.6	12.6	5.3	0	19.6	6.2	15.2	10	0.1	31.4	6.8	11.4	6.5	0.1	24.8	
Cars	1458	2919	357	21	4755	314	2489	1059	10	3872	1243	3000	2027	13	6283	1371	2249	1255	8	4883	19793
% Cars	93	95.9	93.9	87.5	94.8	93.7	95.2	95.6	100	95.2	97.3	95.3	97.5	92.9	96.4	96.5	94.8	93.4	72.7	94.9	95.4
Trucks	103	122	22	3	250	20	125	46	0	191	32	146	47	1	226	45	124	83	3	255	922

TMS Engineers, Inc.

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Transportation Management Services

% Trucks	6.6	4	5.8	12.5	5	6	4.8	4.2	0	4.7	2.5	4.6	2.3	7.1	3.5	3.2	5.2	6.2	27.3	5	4.4
Buses	7	2	1	0	10	1	1	3	0	5	2	3	6	0	11	5	0	5	0	10	36
% Buses	0.4	0.1	0.3	0	0.2	0.3	0	0.3	0	0.1	0.2	0.1	0.3	0	0.2	0.4	0	0.4	0	0.2	0.2

	MAIN STREET (SR 91) From North					WEST STREETSBORO ROAD (SR 303) From East					MAIN STREET (SR 91) From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:45 AM																					
08:45 AM	**60**	**91**	6	0	**157**	**11**	**68**	33	0	**112**	32	**124**	47	0	**203**	19	**50**	**35**	0	104	**576**
09:00 AM	33	85	5	0	123	7	58	**35**	0	100	**34**	101	**57**	0	192	**28**	45	34	0	**107**	522
09:15 AM	42	73	8	0	123	10	60	29	0	99	29	116	53	0	198	24	43	34	**1**	102	522
09:30 AM	39	76	**10**	0	125	10	47	25	**1**	83	32	118	49	**3**	202	25	48	26	0	99	509
Total Volume	174	325	29	0	528	38	233	122	1	394	127	459	206	3	795	96	186	129	1	412	2129
% App. Total	33	61.6	5.5	0		9.6	59.1	31	0.3		16	57.7	25.9	0.4		23.3	45.1	31.3	0.2		
PHF	.725	.893	.725	.000	.841	.864	.857	.871	.250	.879	.934	.925	.904	.250	.979	.857	.930	.921	.250	.963	.924
Cars	158	303	25	0	486	37	213	117	1	368	122	421	200	3	746	92	177	113	1	383	1983
% Cars	90.8	93.2	86.2	0	92.0	97.4	91.4	95.9	100	93.4	96.1	91.7	97.1	100	93.8	95.8	95.2	87.6	100	93.0	93.1
Trucks	16	22	4	0	42	1	19	5	0	25	5	38	6	0	49	4	9	16	0	29	145
% Trucks	9.2	6.8	13.8	0	8.0	2.6	8.2	4.1	0	6.3	3.9	8.3	2.9	0	6.2	4.2	4.8	12.4	0	7.0	6.8
Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0.4	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0.0

TMS Engineers, Inc.

2112 Case Parkway South #7
Twinsburg, Ohio 44087
Transportation Management Services

File Name : SR 303 & SR 91 070621
Site Code : 00000000
Start Date : 7/6/2021
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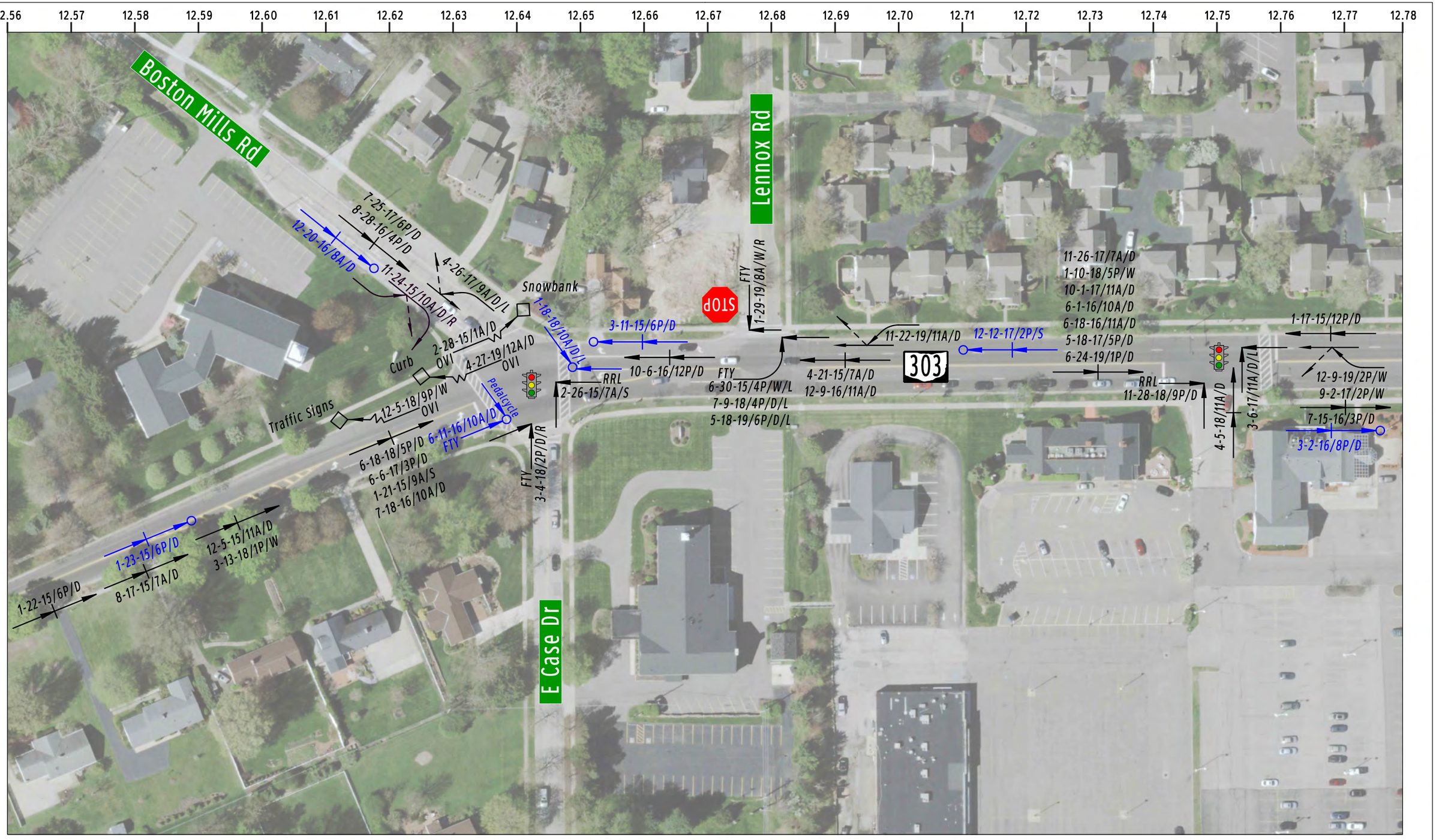
	MAIN STREET (SR 91) From North					WEST STREETSBORO ROAD (SR 303) From East					MAIN STREET (SR 91) From South					WEST STREETSBORO ROAD (SR 303) From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	**52**	106	**18**	**6**	**182**	6	**100**	40	0	**146**	**76**	79	**67**	0	222	48	93	48	**5**	194	**744**
05:00 PM	41	116	9	0	166	**9**	80	29	0	118	56	110	60	0	226	**78**	86	**52**	0	**216**	726
05:15 PM	26	**133**	11	0	170	6	95	37	0	138	43	**124**	61	0	**228**	62	**98**	42	0	202	738
05:30 PM	49	120	9	1	179	8	70	**45**	0	123	45	94	53	0	192	50	92	48	0	190	684
Total Volume	168	475	47	7	697	29	345	151	0	525	220	407	241	0	868	238	369	190	5	802	2892
% App. Total	24.1	68.1	6.7	1		5.5	65.7	28.8	0		25.3	46.9	27.8	0		29.7	46	23.7	0.6		
PHF	.808	.893	.653	.292	.957	.806	.863	.839	.000	.899	.724	.821	.899	.000	.952	.763	.941	.913	.250	.928	.972
Cars	153	465	47	5	670	29	338	149	0	516	215	401	236	0	852	230	363	187	5	785	2823
% Cars	91.1	97.9	100	71.4	96.1	100	98.0	98.7	0	98.3	97.7	98.5	97.9	0	98.2	96.6	98.4	98.4	100	97.9	97.6
Trucks	14	10	0	2	26	0	7	2	0	9	4	6	3	0	13	7	6	2	0	15	63
% Trucks	8.3	2.1	0	28.6	3.7	0	2.0	1.3	0	1.7	1.8	1.5	1.2	0	1.5	2.9	1.6	1.1	0	1.9	2.2
Buses	1	0	0	0	1	0	0	0	0	0	1	0	2	0	3	1	0	1	0	2	6
% Buses	0.6	0	0	0	0.1	0	0	0	0	0	0.5	0	0.8	0	0.3	0.4	0	0.5	0	0.2	0.2

APPENDIX B



Vehicle Direction
Backing
Pedestrian
Out of Control
Overturn

Injury
Fatal
Fixed Object
Parked Vehicle
TEXT Date/Time/Road/Egress Direction

Road:
D = Dry
W = Wet
I = Ice
S = Snow

FTC = Failure To Control
FTS = Failure To Stop
FTY = Failure To Yield
LOC = Left of Center
RRL = Ran Red Light
OVI = Operating Vehicle Impaired

TOTAL CRASHES ON PAGE

FREQUENCY				CRASH SEVERITY	
12	2015	9	2018	39	NON - INJURY
10	2016	6	2019	7	INJURY OR FATAL
9	2017			46	TOTAL

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

COLLISION DIAGRAM

SUM SR 303

SLM 12.64-12.78

2015-2019

N

12.79 12.80 12.81 12.82 12.83 12.84 12.85 12.86 12.87 12.88 12.89 12.90 12.91 12.92 12.93 12.94 12.95 12.96 12.97 12.98 12.99 13.00

Atterbury Blvd

303

7-15-16/3P/D
1-25-19/5P/D
11-16-17/5P/D

10-26-19/10A/D
8-14-17/4P/D
10-12-17/5P/D
1-22-16/7A/D
11-4-15/5P/D

5-14-16/1P/W
LOC
Pedalcycle

8-9-16/9A/D/R
FTY

LOC
2-6-19/6P/W/R

5-15-17/2P/D/R

STOP

3-30-16/7P/D
9-5-17/3P/W
4-8-16/4P/D

11-17-16/7A/D
10-25-19/8P/D

*Semi's load of a forklift struck the bottom of the overpass

6-10-15/1P/D
8-8-17/11A/D

6-21-17/1P/D
6-29-18/1P/D

*7-17-17/9P/D
Bridge

8-14-15/6P/D
10-18-17/11A/D

7-27-18/12P/D
6-7-18/4P/D

1-16-15/6P/D

Milford Rd

Vehicle Direction
Backing
Pedestrian
Out of Control
Overturn

Injury
Fatal
Fixed Object
Parked Vehicle
TEXT Date/Time/Road/Egress Direction

Road:
D = Dry
W = Wet
I = Ice
S = Snow

FTC = Failure To Control
FTS = Failure To Stop
FTY = Failure To Yield
LOC = Left of Center
RRL = Ran Red Light
OVI = Operating Vehicle Impaired

TOTAL CRASHES ON PAGE

FREQUENCY				CRASH SEVERITY	
4	2015	3	2018	21	NON - INJURY
7	2016	4	2019	6	INJURY OR FATAL
9	2017			27	TOTAL

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

COLLISION DIAGRAM

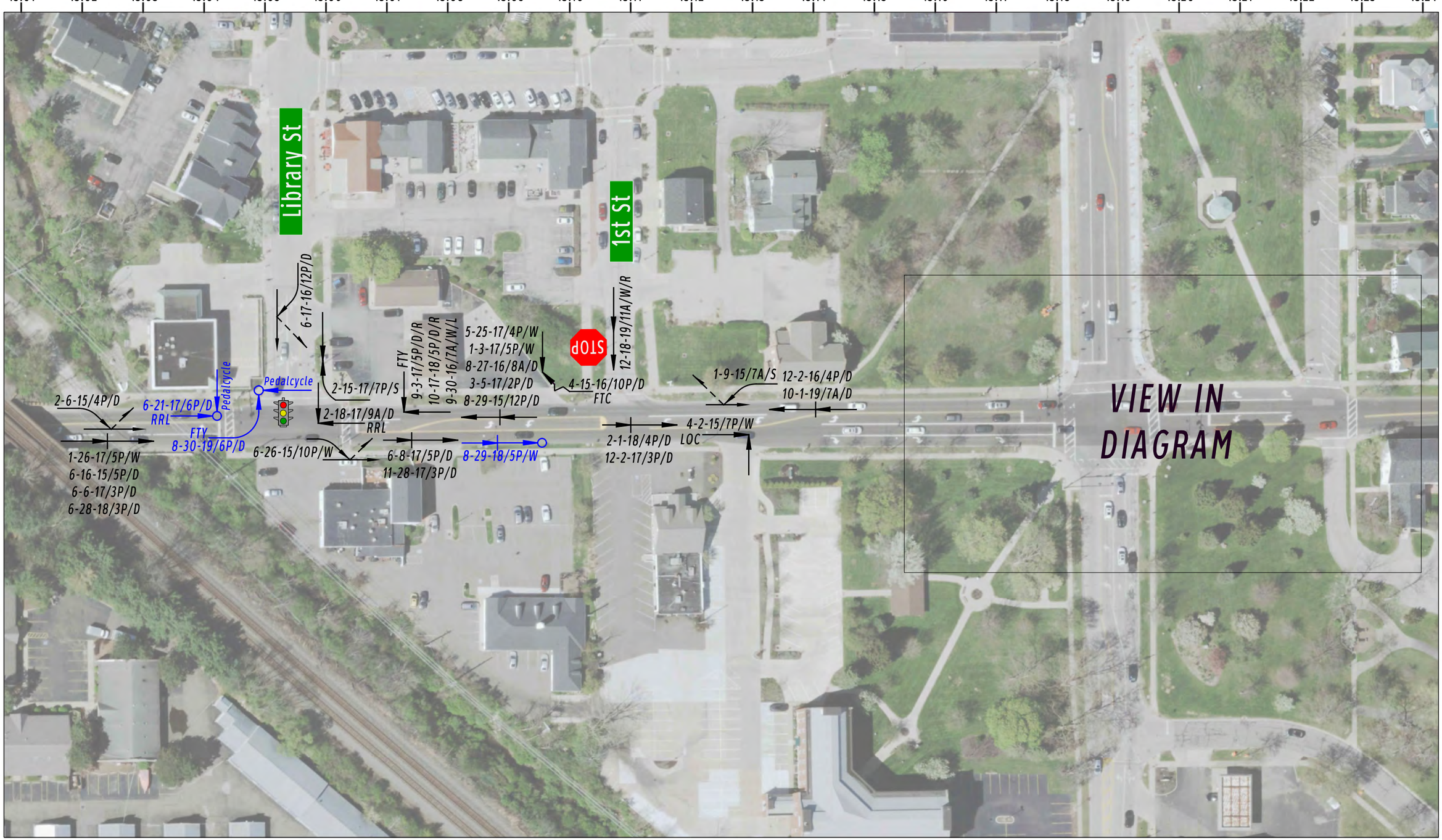
SUM SR 303

SLM 12.79-13.00

2015-2019

N

13.01 13.02 13.03 13.04 13.05 13.06 13.07 13.08 13.09 13.10 13.11 13.12 13.13 13.14 13.15 13.16 13.17 13.18 13.19 13.20 13.21 13.22 13.23 13.24



Vehicle Direction	Injury	Road:	FTC = Failure To Control	TOTAL CRASHES ON PAGE	
Backing	Fatal	D = Dry	FTS = Failure To Stop	FREQUENCY	CRASH SEVERITY
Pedestrian	Fixed Object	W = Wet	FTY = Failure To Yield	6 2015 4 2018	27 NON - INJURY
Out of Control	Parked Vehicle	I = Ice	LOC = Left of Center	5 2016 3 2019	3 INJURY OR FATAL
Overturn	TEXT Date/Time/Road/Egress Direction	S = Snow	RRL = Ran Red Light	12 2017	30 TOTAL
			OVI = Operating Vehicle Impaired		

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

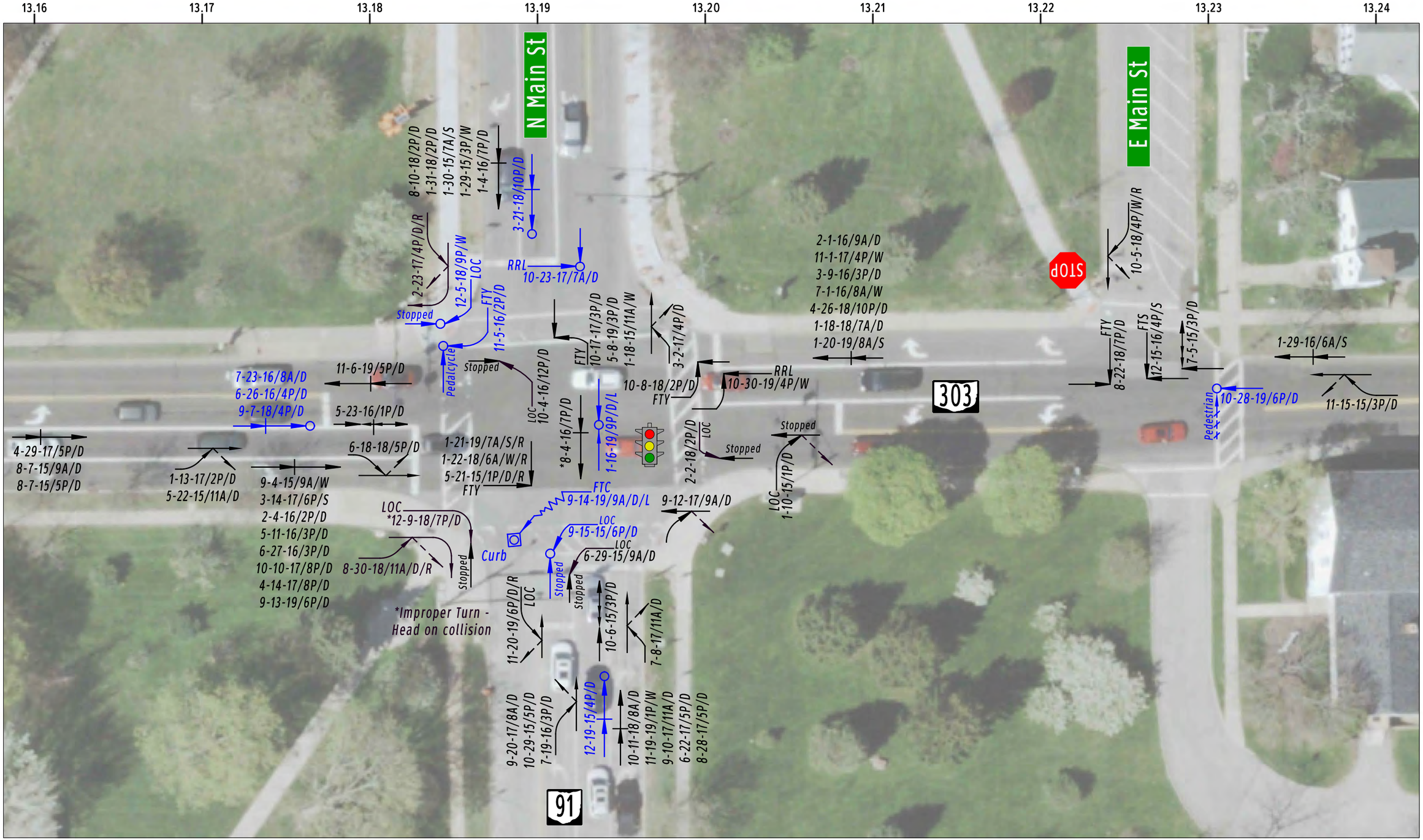
COLLISION DIAGRAM

SUM SR 303

SLM 13.01-13.18

2015-2019

N



Vehicle Direction
Backing
Pedestrian
Out of Control
Overturn

Injury
Fatal
Fixed Object
Parked Vehicle
TEXT Date/Time/Road/Egress Direction

Road:
D = Dry
W = Wet
I = Ice
S = Snow

FTC = Failure To Control
FTS = Failure To Stop
FTY = Failure To Yield
LOC = Left of Center
RRL = Ran Red Light
OVI = Operating Vehicle Impaired

TOTAL CRASHES ON PAGE

FREQUENCY				CRASH SEVERITY	
16	2015	16	2018	63	NON - INJURY
16	2016	11	2019	12	INJURY OR FATAL
16	2017			75	TOTAL

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

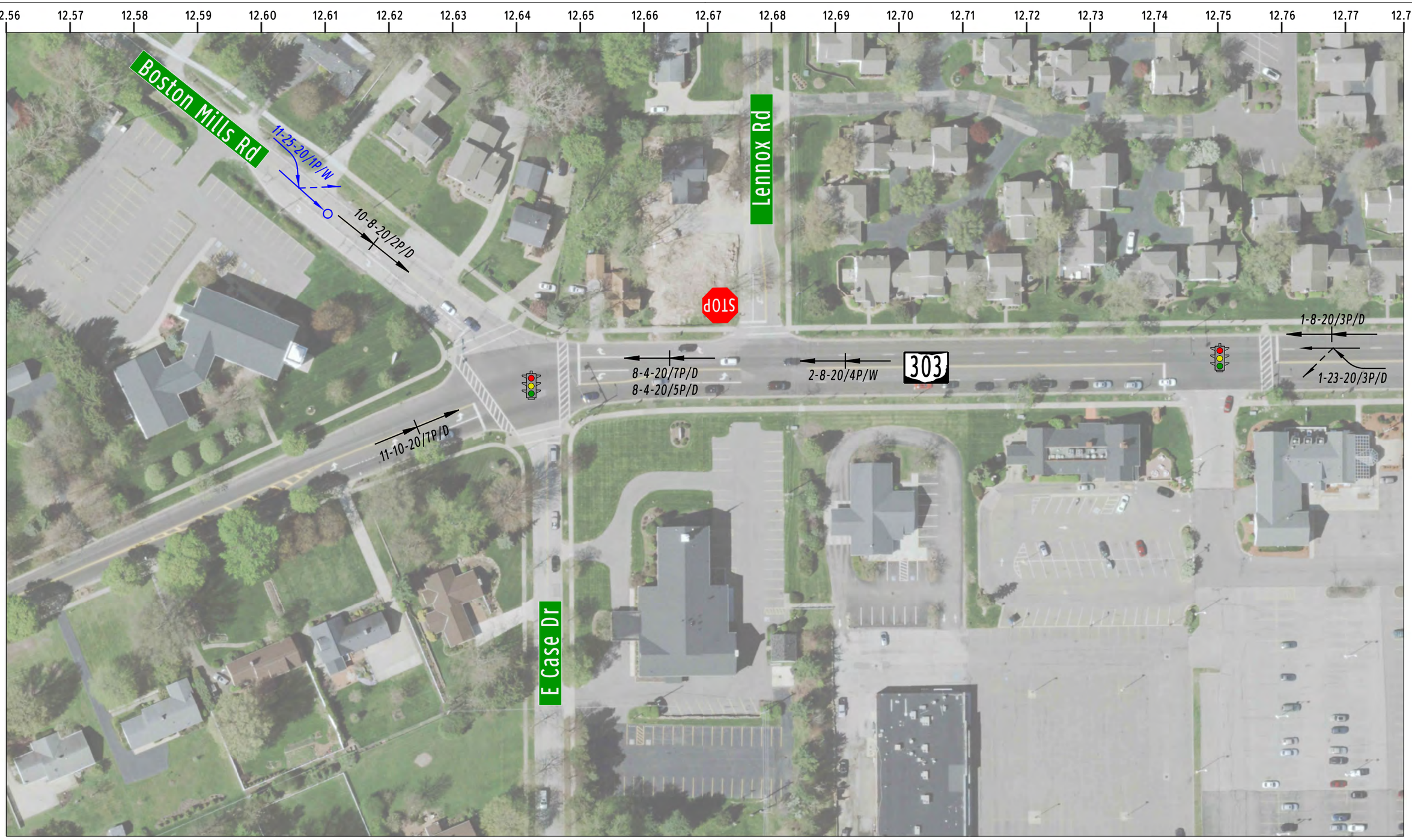
COLLISION DIAGRAM

SUM SR 303

SLM 13.19-13.23

2015-2019

N



Vehicle Direction	Injury	Road:	FTC = Failure To Control	TOTAL CRASHES ON PAGE	
Backing	Fatal	D = Dry	FTS = Failure To Stop	FREQUENCY	CRASH SEVERITY
Pedestrian	Fixed Object	W = Wet	FTY = Failure To Yield	8 2020	7 NON - INJURY
Out of Control	Parked Vehicle	I = Ice	LOC = Left of Center		1 INJURY OR FATAL
Overturn	TEXT Date/Time/Road/Egress Direction	S = Snow	RRL = Ran Red Light		8 TOTAL
			OVI = Operating Vehicle Impaired		

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

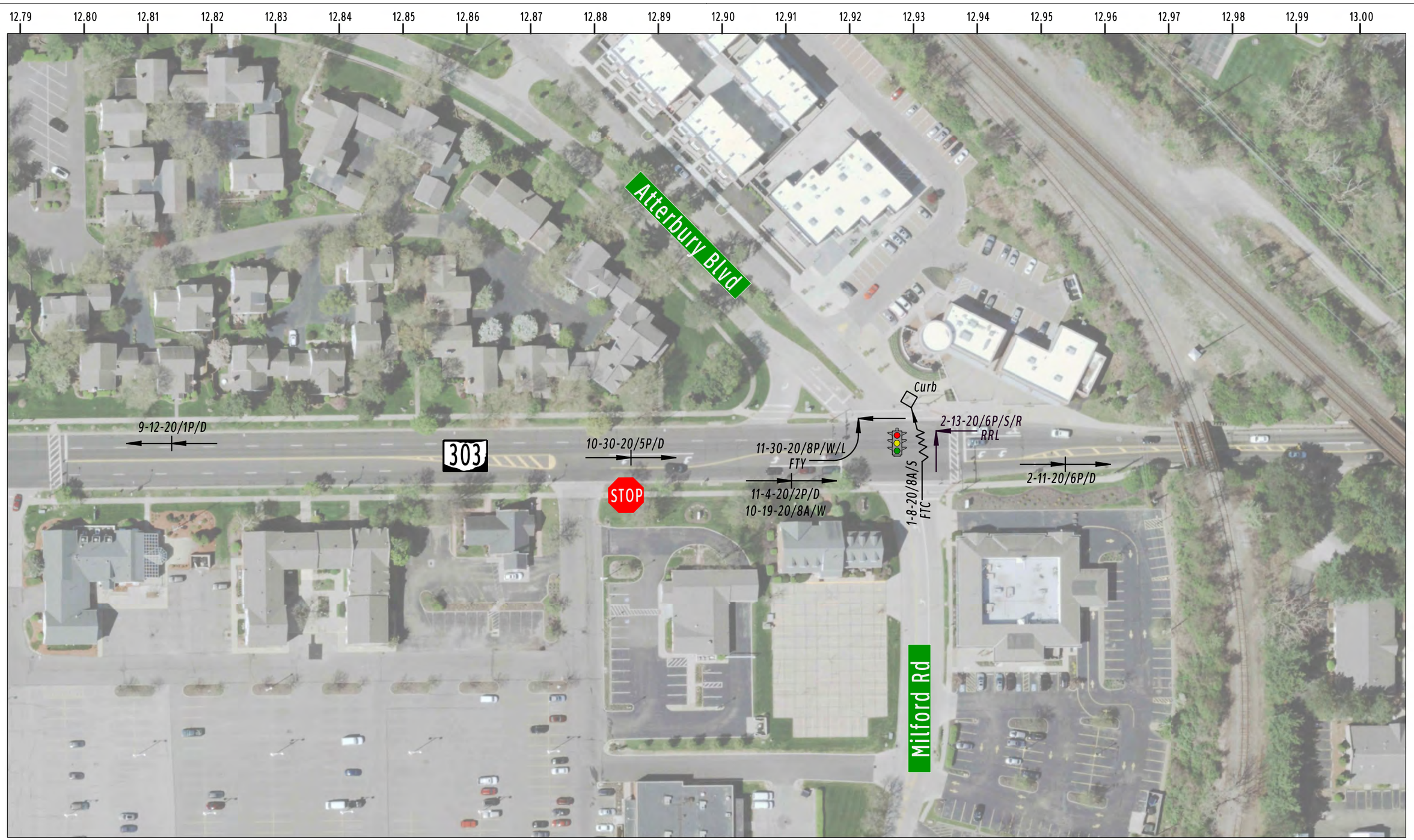
COLLISION DIAGRAM

SUM SR 303

SLM 12.64-12.78

2020

N



Vehicle Direction	Injury	Road:	FTC = Failure To Control	TOTAL CRASHES ON PAGE	
Backing	Fatal	D = Dry	FTS = Failure To Stop	FREQUENCY	CRASH SEVERITY
Pedestrian	Fixed Object	W = Wet	FTY = Failure To Yield	8 2020	8 NON - INJURY
Out of Control	Parked Vehicle	I = Ice	LOC = Left of Center		0 INJURY OR FATAL
Overturn	TEXT Date/Time/Road/Egress Direction	S = Snow	RRL = Ran Red Light		8 TOTAL
			OVI = Operating Vehicle Impaired		

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

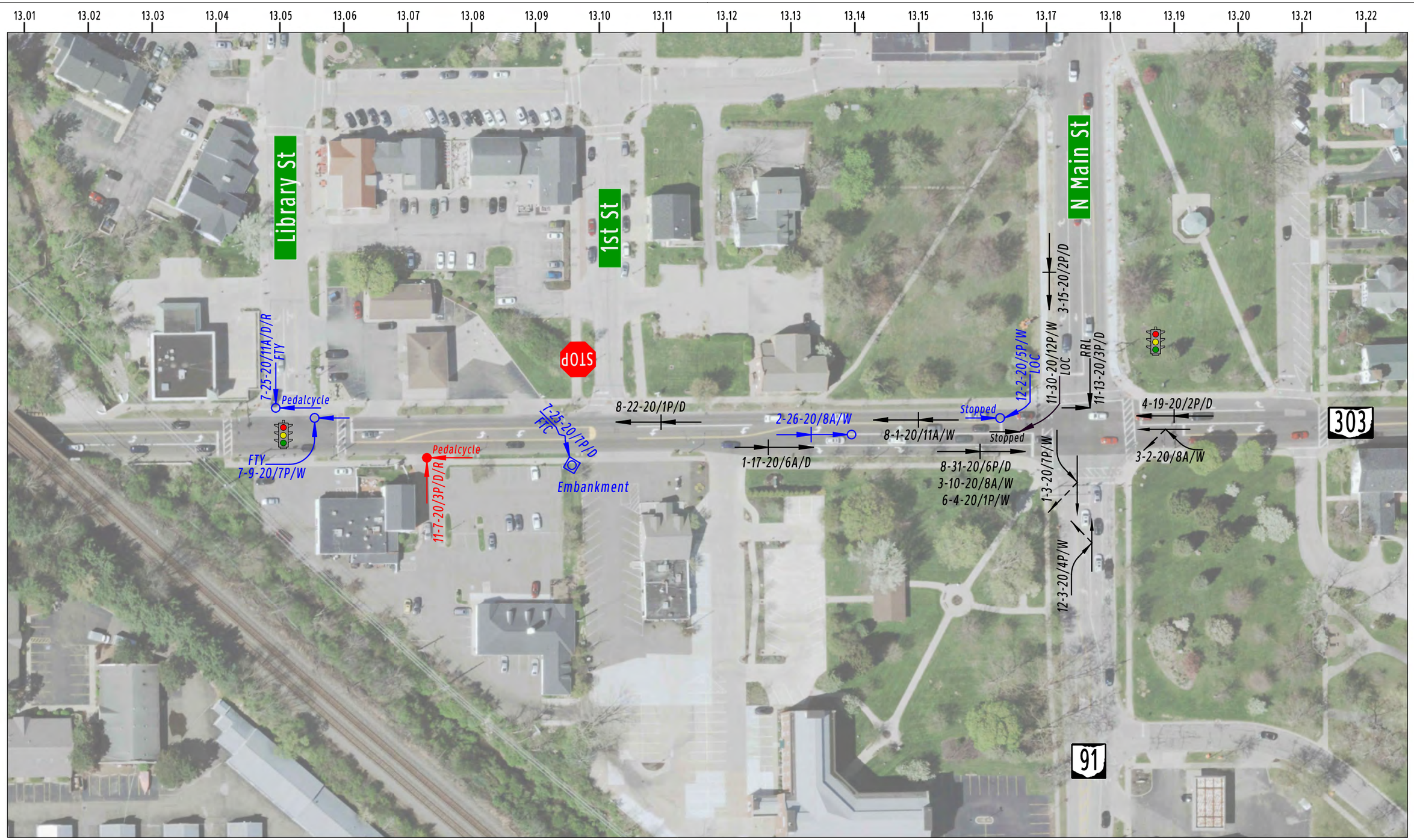
COLLISION DIAGRAM

SUM SR 303

SLM 12.79-13.00

2020

N



Vehicle Direction	Injury	Road:	FTC = Failure To Control	TOTAL CRASHES ON PAGE	
Backing	Fatal	D = Dry	FTS = Failure To Stop	FREQUENCY	CRASH SEVERITY
Pedestrian	Fixed Object	W = Wet	FTY = Failure To Yield	19 2020	13 NON - INJURY
Out of Control	Parked Vehicle	I = Ice	LOC = Left of Center		6 INJURY OR FATAL
Overturn	TEXT Date/Time/Road/Egress Direction	S = Snow	RRL = Ran Red Light		20 TOTAL
			OVI = Operating Vehicle Impaired		

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

COLLISION DIAGRAM

SUM SR 303

SLM 13.01-13.19

2020

N

SUM SR 303 SLM 12.64-13.23 CAMTool 2015-2019

	Number
Total	**178**

CRASH_SEVERITY	Number	%
Injury Crash	**28**	15.7%
Property Damage Crash	**150**	84.3%
Grand Total	**178**	**100.0%**

TRAFFIC_CRASH_YEAR	Number	%
2015	**38**	21.3%
2016	**38**	21.3%
2017	**46**	25.8%
2018	**32**	18.0%
2019	**24**	13.5%
Grand Total	**178**	**100.0%**

DAY_OF_WEEK	Number	%
Friday	**34**	19.1%
Wednesday	**32**	18.0%
Thursday	**29**	16.3%
Tuesday	**26**	14.6%
Saturday	**22**	12.4%
Monday	**22**	12.4%
Sunday	**13**	7.3%
Grand Total	**178**	**100.0%**

HOUR_OF_DAY	Number	%
0	**1**	0.6%
1	**1**	0.6%
6	**2**	1.1%
7	**13**	7.3%
8	**8**	4.5%
9	**10**	5.6%
10	**6**	3.4%
11	**15**	8.4%
12	**7**	3.9%
13	**10**	5.6%
14	**13**	7.3%
15	**17**	9.6%
16	**19**	10.7%
17	**21**	11.8%
18	**15**	8.4%
19	**7**	3.9%
20	**4**	2.2%
21	**5**	2.8%
22	**4**	2.2%
Grand Total	**178**	**100.0%**

TYPE_OF_CRASH	Number	%
Rear End	**101**	56.7%
Sideswipe - Passing	**21**	11.8%
Angle	**21**	11.8%
Right Turn	**7**	3.9%
Left Turn	**7**	3.9%
Pedalcycles	**5**	2.8%
Sideswipe - Meeting	**4**	2.2%
Fixed Object	**4**	2.2%
Backing	**3**	1.7%
Head On	**2**	1.1%
Sideswipe- Meeting	**1**	0.6%
Pedestrian	**1**	0.6%
Other Object	**1**	0.6%
Grand Total	**178**	**100.0%**

SUM SR 303 SLM 12.64-13.23 CAMTool 2015-2019

WEATHER_CONDITION	Number	%
Data Not Valid or Not Provided	**178**	100.0%
Grand Total	**178**	**100.0%**

ROAD_CONDITION	Number	%
Dry	**138**	77.5%
Wet	**29**	16.3%
Snow	**11**	6.2%
Grand Total	**178**	**100.0%**

LIGHT_CONDITION	Number	%
Daylight	**134**	75.3%
Dark - Lighted Roadway	**33**	18.5%
Dawn/Dusk	**10**	5.6%
Dark - Roadway Not Lighted	**1**	0.6%
Grand Total	**178**	**100.0%**

NUMBER_OF_VEHICLES	Number	%
1	**5**	2.8%
2	**159**	89.3%
3	**14**	7.9%
Grand Total	**178**	**100.0%**

LOCATION	Number	%
Four-Way Intersection	**118**	66.3%
Not An Intersection	**27**	15.2%
T-Intersection	**24**	13.5%
Driveway/Alley Access	**9**	5.1%
Grand Total	**178**	**100.0%**

CRASH_MONTH_NBR	Number	%
1	**26**	14.6%
2	**11**	6.2%
3	**11**	6.2%
4	**10**	5.6%
5	**10**	5.6%
6	**23**	12.9%
7	**11**	6.2%
8	**17**	9.6%
9	**12**	6.7%
10	**20**	11.2%
11	**14**	7.9%
12	**13**	7.3%
Grand Total	**178**	**100.0%**

ROAD_CONTOUR	Number	%
Straight Level	**148**	83.1%
Straight Grade	**25**	14.0%
Curve Level	**4**	2.2%
Curve Grade	**1**	0.6%
Grand Total	**178**	**100.0%**

SPECIAL_AREA	Number	%
(blank)	**178**	100.0%
Grand Total	**178**	**100.0%**

ANIMAL_TYPE	Number	%
(blank)	**178**	100.0%
Grand Total	**178**	**100.0%**

SUM SR 303 SLM 12.64-13.23 CAMTool 2015-2019

ACTION1	Number	%
Straight Ahead	**105**	59.0%
Making Left Turn	**22**	12.4%
Making Right Turn	**17**	9.6%
Slowing or Stopped In Traffic	**15**	8.4%
Changing Lanes	**12**	6.7%
Backing	**2**	1.1%
Overtaking/Passing	**2**	1.1%
Entering Traffic Lane	**2**	1.1%
Data Not Valid or Not Provided	**1**	0.6%
Grand Total	**178**	**100.0%**

CONTRIBUTING_FACTOR1	Number	%
Following too Close / ACDA	**98**	55.1%
Failure to Yield	**22**	12.4%
Other Improper Action	**18**	10.1%
Improper Lane Change	**12**	6.7%
Improper Turn	**9**	5.1%
Ran Red Light	**7**	3.9%
Left of Center	**5**	2.8%
None	**3**	1.7%
Improper Backing	**2**	1.1%
Drove off Road	**1**	0.6%
Unsafe Speed	**1**	0.6%
Grand Total	**178**	**100.0%**

	Number	%
Total	**178**	**100.0%**

TRAFFIC_CONTROL1	Number	%
Signal	**86**	48.3%
No Control	**81**	45.5%
Stop Sign	**10**	5.6%
Flasher	**1**	0.6%
Grand Total	**178**	**100.0%**

DRIVER_ALCOHOL1	Number	%
No	**172**	96.6%
Yes	**6**	3.4%
Grand Total	**178**	**100.0%**

DRIVER_DRUGS1	Number	%
No	**177**	99.4%
Yes	**1**	0.6%
Grand Total	**178**	**100.0%**

SUM SR 303 SLM 12.64-13.23 CAMTool 2015-2019

DIRECTION_FROM1	Number	%
West	**82**	46.1%
East	**45**	25.3%
North	**23**	12.9%
South	**23**	12.9%
Northwest	**4**	2.2%
Southwest	**1**	0.6%
Grand Total	**178**	**100.0%**

DIRECTION_TO1	Number	%
East	**76**	42.7%
West	**56**	31.5%
South	**23**	12.9%
North	**17**	9.6%
Southeast	**2**	1.1%
Northeast	**2**	1.1%
Northwest	**1**	0.6%
Unknown	**1**	0.6%
Grand Total	**178**	**100.0%**

POSTED_SPEED1	Number	%
25	**167**	93.8%
35	**6**	3.4%
5	**2**	1.1%
0	**2**	1.1%
15	**1**	0.6%
Grand Total	**178**	**100.0%**

ESTIMATED_SPEED1	Number	%
5	**62**	34.8%
10	**43**	24.2%
20	**17**	9.6%
15	**15**	8.4%
25	**12**	6.7%
3	**9**	5.1%
0	**7**	3.9%
2	**4**	2.2%
30	**2**	1.1%
40	**2**	1.1%
50	**1**	0.6%
22	**1**	0.6%
27	**1**	0.6%
4	**1**	0.6%
1	**1**	0.6%
Grand Total	**178**	**100.0%**

VEHICLE_TYPE1	Number	%
Passenger Car	**101**	56.7%
Sport Utility Vehicle	**43**	24.2%
Passenger Van (minivan)	**9**	5.1%
Pick up	**8**	4.5%
Semi-Tractor	**6**	3.4%
Cargo Van	**4**	2.2%
Single Unit Truck	**4**	2.2%
Motorcycle 2 Wheeled	**1**	0.6%
Bus (16+ Passengers)	**1**	0.6%
Other Vehicle	**1**	0.6%
Grand Total	**178**	**100.0%**

VEHICLE_TYPE2	Number	%
Sport Utility Vehicle	**72**	40.4%
Passenger Car	**69**	38.8%
Pick up	**7**	3.9%
Passenger Van (minivan)	**7**	3.9%
Bicycle	**5**	2.8%
	5	2.8%
Cargo Van	**5**	2.8%
Single Unit Truck	**4**	2.2%
Semi-Tractor	**3**	1.7%
Pedestrian/Skater	**1**	0.6%
Grand Total	**178**	**100.0%**

SUM SR 303 SLM 12.64-13.23 CAMTool 2015-2019

ACTION2	Number	%
Slowing or Stopped In Traffic	**110**	61.8%
Straight Ahead	**42**	23.6%
Making Right Turn	**7**	3.9%
Making Left Turn	**6**	3.4%
	6	3.4%
Entering or Crossing Specified Location	**3**	1.7%
Entering Traffic Lane	**2**	1.1%
Walking, Running, Jogging, Playing	**2**	1.1%
Grand Total	**178**	**100.0%**

CONTRIBUTING_FACTOR2	Number	%
None	**164**	92.1%
Other Improper Action	**6**	3.4%
	5	2.8%
Failure to Yield	**2**	1.1%
Following too Close / ACDA	**1**	0.6%
Grand Total	**178**	**100.0%**

DIRECTION_FROM2	Number	%
West	**69**	38.8%
East	**49**	27.5%
South	**28**	15.7%
North	**21**	11.8%
	5	2.8%
Northwest	**5**	2.8%
Southwest	**1**	0.6%
Grand Total	**178**	**100.0%**

DIRECTION_TO2	Number	%
East	**70**	39.3%
West	**56**	31.5%
North	**21**	11.8%
South	**21**	11.8%
	5	2.8%
Unknown	**2**	1.1%
Southeast	**2**	1.1%
Northeast	**1**	0.6%
Grand Total	**178**	**100.0%**

DRIVER_ALCOHOL2	Number	%
(blank)	**178**	100.0%
Grand Total	**178**	**100.0%**

DRIVER_DRUGS2	Number	%
(blank)	**178**	100.0%
Grand Total	**178**	**100.0%**

SUM SR 303 SLM 12.64-13.23 CAMTool 2015-2019

SEVERITY	CRASH_SEVERITY	
TRAFFIC_CRASH_YEAR	Property Damage Crash	Injury Crash
2015	34	4
2016	30	8
2017	41	5
2018	26	6
2019	19	5
Grand Total	**150**	**28**

TRAFFIC_CRASH_YEAR	Fatalities	Incapacitating Injuries
2015	0	0
2016	0	0
2017	0	0
2018	0	0
2019	0	0
Grand Total	**0**	**0**

TRAFFIC_CRASH_YEAR	INJ_TYPE2_SERIOUS_VISIBLE	INJ_TYPE3_MINOR_VISIBLE	INJ_TYPE4_NO_VISIBLE
2015	0	0	4
2016	0	2	6
2017	0	2	4
2018	0	2	6
2019	0	3	2
Grand Total	**0**	**9**	**22**

SUM SR 303 SLM 12.64-13.19 CAMTool 2020

	Number
Total	**35**

CRASH_SEVERITY	Number	%
Fatal Crash	**1**	2.9%
Injury Crash	**6**	17.1%
Property Damage Crash	**28**	80.0%
Grand Total	**35**	**100.0%**

TRAFFIC_CRASH_YEAR	Number	%
2020	**35**	100.0%
Grand Total	**35**	**100.0%**

DAY_OF_WEEK	Number	%
Saturday	**7**	20.0%
Thursday	**6**	17.1%
Wednesday	**6**	17.1%
Monday	**5**	14.3%
Tuesday	**5**	14.3%
Friday	**4**	11.4%
Sunday	**2**	5.7%
Grand Total	**35**	**100.0%**

HOUR_OF_DAY	Number	%
6	**1**	2.9%
8	**5**	14.3%
11	**2**	5.7%
12	**1**	2.9%
13	**4**	11.4%
14	**4**	11.4%
15	**4**	11.4%
16	**2**	5.7%
17	**3**	8.6%
18	**3**	8.6%
19	**5**	14.3%
20	**1**	2.9%
Grand Total	**35**	**100.0%**

TYPE_OF_CRASH	Number	%
Rear End	**20**	57.1%
Sideswipe - Passing	**5**	14.3%
Pedalcycles	**2**	5.7%
Sideswipe - Meeting	**2**	5.7%
Fixed Object	**2**	5.7%
Left Turn	**1**	2.9%
Head On	**1**	2.9%
Right Turn	**1**	2.9%
Angle	**1**	2.9%
Grand Total	**35**	**100.0%**

SUM SR 303 SLM 12.64-13.19 CAMTool 2020

WEATHER_CONDITION	Number	%
Data Not Valid or Not Provided	**35**	100.0%
Grand Total	**35**	**100.0%**

ROAD_CONDITION	Number	%
Dry	**19**	54.3%
Wet	**14**	40.0%
Snow	**2**	5.7%
Grand Total	**35**	**100.0%**

LIGHT_CONDITION	Number	%
Daylight	**28**	80.0%
Dark - Lighted Roadway	**6**	17.1%
Dark - Roadway Not Lighted	**1**	2.9%
Grand Total	**35**	**100.0%**

NUMBER_OF_VEHICLES	Number	%
1	**2**	5.7%
2	**30**	85.7%
3	**3**	8.6%
Grand Total	**35**	**100.0%**

LOCATION	Number	%
Four-Way Intersection	**26**	74.3%
T-Intersection	**4**	11.4%
Not An Intersection	**3**	8.6%
Driveway/Alley Access	**2**	5.7%
Grand Total	**35**	**100.0%**

CRASH_MONTH_NBR	Number	%
1	**5**	14.3%
2	**4**	11.4%
3	**3**	8.6%
4	**1**	2.9%
6	**1**	2.9%
7	**3**	8.6%
8	**5**	14.3%
9	**1**	2.9%
10	**3**	8.6%
11	**7**	20.0%
12	**2**	5.7%
Grand Total	**35**	**100.0%**

ROAD_CONTOUR	Number	%
Straight Level	**29**	82.9%
Straight Grade	**5**	14.3%
Curve Grade	**1**	2.9%
Grand Total	**35**	**100.0%**

SPECIAL_AREA	Number	%
(blank)	**35**	100.0%
Grand Total	**35**	**100.0%**

ANIMAL_TYPE	Number	%
(blank)	**35**	100.0%
Grand Total	**35**	**100.0%**

SUM SR 303 SLM 12.64-13.19 CAMTool 2020

ACTION1	Number	%
Straight Ahead	19	54.3%
Changing Lanes	4	11.4%
Making Left Turn	4	11.4%
Slowing or Stopped In Traffic	4	11.4%
Making Right Turn	3	8.6%
Entering Traffic Lane	1	2.9%
Grand Total	**35**	**100.0%**

CONTRIBUTING_FACTOR1	Number	%
Following too Close / ACDA	19	54.3%
Failure to Yield	3	8.6%
Other Improper Action	3	8.6%
Improper Lane Change	3	8.6%
Improper Turn	2	5.7%
Ran Red Light	2	5.7%
None	1	2.9%
Not Discernible	1	2.9%
Drove off Road	1	2.9%
Grand Total	**35**	**100.0%**

	Number	%
Total	**35**	**100.0%**

TRAFFIC_CONTROL1	Number	%
Signal	19	54.3%
No Control	16	45.7%
Grand Total	**35**	**100.0%**

DRIVER_ALCOHOL1	Number	%
No	35	100.0%
Grand Total	**35**	**100.0%**

DRIVER_DRUGS1	Number	%
No	35	100.0%
Grand Total	**35**	**100.0%**

SUM SR 303 SLM 12.64-13.19 CAMTool 2020

DIRECTION_FROM1	Number	%
West	**14**	40.0%
East	**11**	31.4%
North	**6**	17.1%
South	**3**	8.6%
Unknown	**1**	2.9%
Grand Total	**35**	**100.0%**

DIRECTION_TO1	Number	%
East	**12**	34.3%
West	**11**	31.4%
North	**5**	14.3%
South	**3**	8.6%
Northwest	**2**	5.7%
Southwest	**1**	2.9%
Unknown	**1**	2.9%
Grand Total	**35**	**100.0%**

POSTED_SPEED1	Number	%
25	**33**	94.3%
35	**2**	5.7%
Grand Total	**35**	**100.0%**

ESTIMATED_SPEED1	Number	%
5	**14**	40.0%
10	**5**	14.3%
25	**4**	11.4%
15	**4**	11.4%
8	**2**	5.7%
2	**2**	5.7%
1	**1**	2.9%
27	**1**	2.9%
0	**1**	2.9%
20	**1**	2.9%
Grand Total	**35**	**100.0%**

VEHICLE_TYPE1	Number	%
Sport Utility Vehicle	**16**	45.7%
Passenger Car	**14**	40.0%
Pick up	**2**	5.7%
Motorcycle 2 Wheeled	**1**	2.9%
Bus (16+ Passengers)	**1**	2.9%
Cargo Van	**1**	2.9%
Grand Total	**35**	**100.0%**

VEHICLE_TYPE2	Number	%
Sport Utility Vehicle	**18**	51.4%
Passenger Car	**7**	20.0%
Pick up	**3**	8.6%
Bicycle	**2**	5.7%
	2	5.7%
Passenger Van (minivan)	**1**	2.9%
Cargo Van	**1**	2.9%
Single Unit Truck	**1**	2.9%
Grand Total	**35**	**100.0%**

SUM SR 303 SLM 12.64-13.19 CAMTool 2020

ACTION2	Number	%
Slowing or Stopped In Traffic	**19**	54.3%
Straight Ahead	**11**	31.4%
	2	5.7%
Making Right Turn	**1**	2.9%
Changing Lanes	**1**	2.9%
Making Left Turn	**1**	2.9%
Grand Total	**35**	**100.0%**

CONTRIBUTING_FACTOR2	Number	%
None	**30**	85.7%
	2	5.7%
Not Discernible	**2**	5.7%
Following too Close / ACDA	**1**	2.9%
Grand Total	**35**	**100.0%**

DIRECTION_FROM2	Number	%
West	**14**	40.0%
East	**13**	37.1%
North	**3**	8.6%
South	**3**	8.6%
	2	5.7%
Grand Total	**35**	**100.0%**

DIRECTION_TO2	Number	%
West	**15**	42.9%
East	**14**	40.0%
	2	5.7%
North	**2**	5.7%
Northwest	**1**	2.9%
South	**1**	2.9%
Grand Total	**35**	**100.0%**

DRIVER_ALCOHOL2	Number	%
(blank)	**35**	100.0%
Grand Total	**35**	**100.0%**

DRIVER_DRUGS2	Number	%
(blank)	**35**	100.0%
Grand Total	**35**	**100.0%**

SUM SR 303 SLM 12.64-13.19 CAMTool 2020

SEVERITY	CRASH_SEVERITY		
TRAFFIC_CRASH_YEAR	Property Damage Crash	Injury Crash	Fatal Crash
2020	28	6	1
Grand Total	**28**	**6**	**1**

TRAFFIC_CRASH_YEAR	Fatalities	Incapacitating Injuries
2020	1	0
Grand Total	**1**	**0**

TRAFFIC_CRASH_YEAR	INJ_TYPE2_SERIOUS_VISIBLE	INJ_TYPE3_MINOR_VISIBLE	INJ_TYPE4_NO_VISIBLE
2020	0	5	3
Grand Total	**0**	**5**	**3**

APPENDIX C


113191
Hudson Safety Study
Option 1, Dedicated Right Turn
12/1/2021
Boston Mills Rd
Lennox Rd
Atterbury Blvd
W Streetsboro St
W Streetsboro St
E Case Dr
Commercial Plaza
(West Entrance)
Commercial Plaza
(East Entrance)
Milford Rd


113191
Hudson Safety Study
Option 2, Dedicated Left Turn
12/1/2021
Boston Mills Rd
W Streetsboro St
Lennox Rd
Atterbury Blvd
W Streetsboro


113191
Hudson Safety Study
Option 2b, Dedicated Left and Right Turn
12/1/2021
Boston Mills Rd
Lennox Rd
Atterbury Blvd
W Streetsboro St
W Streetsboro
E Case Dr
ommercial Plaza
/est Entrance)
mmercial Plaza
ast Entrance)


113191
Hudson Safety Study
Option 3, Dedicated Left and Right Turn
Losing West Bound
12/1/2021
Boston Mills Rd
Lennox Rd
Atterbury Blvd
W Streetsboro St
W Streetsboro St
E Case Dr
Commercial Plaza
(West Entrance)
Commercial Plaza
(East Entrance)
Milford Rd


Milford Rd
Library St
First St

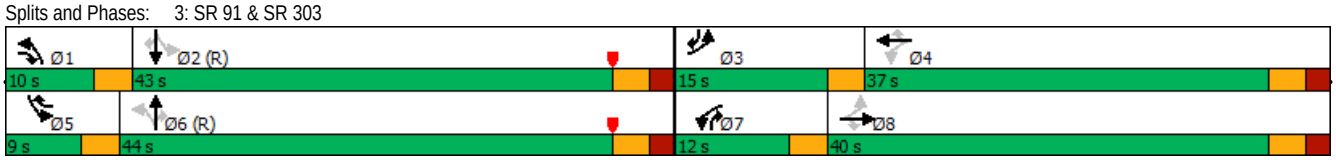
APPENDIX D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	186	96	122	233	38	206	459	127	29	325	174
Future Volume (vph)	129	186	96	122	233	38	206	459	127	29	325	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		225	100		100	250		125	200		275
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.97	1.00			1.00		0.98	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	1810	1553	1736	1743	1568	1752	1759	1553	1583	1776	1482
Flt Permitted	0.326			0.494			0.413			0.380		
Satd. Flow (perm)	553	1810	1512	898	1743	1568	761	1759	1518	633	1776	1448
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			52			109			189
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		714			2095			1388			876	
Travel Time (s)		19.5			57.1			37.9			23.9	
Confl. Peds. (#/hr)			3	3			1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	12%	5%	4%	4%	9%	3%	3%	8%	4%	14%	7%	9%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	202	104	133	253	41	224	499	138	32	353	189
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	1	7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	15.0	5.0	5.0	15.0	5.0
Minimum Split (s)	9.0	31.0	9.0	9.0	31.0	9.0	9.0	27.0	9.0	9.0	27.0	9.0
Total Split (s)	15.0	40.0	10.0	12.0	37.0	9.0	10.0	44.0	12.0	9.0	43.0	15.0
Total Split (%)	14.3%	38.1%	9.5%	11.4%	35.2%	8.6%	9.5%	41.9%	11.4%	8.6%	41.0%	14.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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	0.0	0.0
Total Lost Time (s)	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
v/c Ratio	0.48	0.54	0.18	0.37	0.74	0.08	0.40	0.57	0.14	0.08	0.45	0.21
Control Delay	23.5	35.7	7.6	25.7	52.6	4.8	7.0	16.3	2.6	12.7	21.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	35.7	7.6	25.7	52.7	4.8	7.0	16.3	2.6	12.7	21.2	0.6
Queue Length 50th (ft)	34	122	24	62	161	0	28	180	0	9	118	0
Queue Length 95th (ft)	121	168	34	95	229	17	70	437	30	m13	m246	m2
Internal Link Dist (ft)		634			2015			1308			796	
Turn Bay Length (ft)	225		225	100		100	250		125	200		275
Base Capacity (vph)	310	603	571	361	531	516	556	882	983	392	786	921
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	10	0	0	0	0	0	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.33	0.18	0.37	0.49	0.08	0.40	0.57	0.14	0.08	0.45	0.21

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: SR 91 & SR 303



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	186	96	122	233	38	206	459	127	29	325	174
Future Volume (vph)	129	186	96	122	233	38	206	459	127	29	325	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0
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
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1612	1810	1526	1732	1743	1568	1752	1759	1524	1583	1776	1455
Flt Permitted	0.33	1.00	1.00	0.49	1.00	1.00	0.41	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	553	1810	1526	901	1743	1568	762	1759	1524	634	1776	1455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	202	104	133	253	41	224	499	138	32	353	189
RTOR Reduction (vph)	0	0	72	0	0	31	0	0	45	0	0	86
Lane Group Flow (vph)	140	202	32	133	253	10	224	499	93	32	353	104
Confl. Peds. (#/hr)			3	3			1		1	1		1
Heavy Vehicles (%)	12%	5%	4%	4%	9%	3%	3%	8%	4%	14%	7%	9%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3
Permitted Phases	8		8	4		4	6		6	2		2
Actuated Green, G (s)	32.6	21.6	32.6	30.4	20.5	25.9	60.5	52.1	62.0	51.9	46.5	57.5
Effective Green, g (s)	32.6	21.6	32.6	30.4	20.5	25.9	60.5	52.1	62.0	51.9	46.5	57.5
Actuated g/C Ratio	0.31	0.21	0.31	0.29	0.20	0.25	0.58	0.50	0.59	0.49	0.44	0.55
Clearance Time (s)	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	282	372	473	339	340	386	542	872	899	362	786	796
v/s Ratio Prot	c0.05	0.11	0.01	0.04	c0.15	0.00	c0.04	c0.28	0.01	0.00	0.20	0.01
v/s Ratio Perm	0.10		0.01	0.08		0.01	0.19		0.05	0.04		0.06
v/c Ratio	0.50	0.54	0.07	0.39	0.74	0.03	0.41	0.57	0.10	0.09	0.45	0.13
Uniform Delay, d1	27.9	37.3	25.5	28.8	39.8	30.0	11.7	18.6	9.4	14.2	20.3	11.6
Progression Factor	0.81	0.85	1.94	1.00	1.00	1.00	0.45	0.65	0.71	1.08	0.86	0.09
Incremental Delay, d2	1.2	1.4	0.1	0.8	8.5	0.0	0.5	2.4	0.0	0.1	1.4	0.1
Delay (s)	23.7	33.2	49.5	29.6	48.3	30.0	5.7	14.6	6.7	15.4	18.9	1.1
Level of Service	C	C	D	C	D	C	A	B	A	B	B	A
Approach Delay (s)		34.0			40.7			11.0			12.9	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	379	72	39	458	51	47
Future Volume (vph)	379	72	39	458	51	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor					1.00	
Frt	0.976					0.850
Flt Protected				0.996	0.950	
Satd. Flow (prot)	3296	0	0	3424	1805	1524
Flt Permitted				0.881	0.950	
Satd. Flow (perm)	3296	0	0	3029	1802	1524
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	29					51
Link Speed (mph)	25			25	25	
Link Distance (ft)	675			390	1516	
Travel Time (s)	18.4			10.6	41.3	
Confl. Peds. (#/hr)					1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	8%	1%	5%	5%	0%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	490	0	0	540	55	51
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	2	4	
Permitted Phases			2			4
Detector Phase	2		1	2	4	4
Switch Phase						
Minimum Initial (s)	25.0		9.0	25.0	11.0	11.0
Minimum Split (s)	31.6		15.6	31.6	27.3	27.3
Total Split (s)	57.4		15.6	57.4	32.0	32.0
Total Split (%)	54.7%		14.9%	54.7%	30.5%	30.5%
Yellow Time (s)	3.6		3.6	3.6	3.3	3.3
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.6			5.6	5.3	5.3
Lead/Lag	Lag		Lead	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	C-Min		None	C-Min	None	None
v/c Ratio	0.18			0.21	0.29	0.25
Control Delay	3.8			4.0	47.5	15.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.8			4.0	47.5	15.4
Queue Length 50th (ft)	82			3	35	0
Queue Length 95th (ft)	23			162	73	36
Internal Link Dist (ft)	595			310	1436	
Turn Bay Length (ft)						
Base Capacity (vph)	2745			2519	458	425
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	0.18			0.21	0.12	0.12

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 21 (20%), Referenced to phase 2:EBWB and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	

Splits and Phases: 12: Shopping Center & SR 303

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	379	72	39	458	51	47
Future Volume (vph)	379	72	39	458	51	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6			5.6	5.3	5.3
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	1.00			1.00	1.00	1.00
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3297			3425	1805	1524
Flt Permitted	1.00			0.88	0.95	1.00
Satd. Flow (perm)	3297			3030	1805	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	412	78	42	498	55	51
RTOR Reduction (vph)	5	0	0	0	0	47
Lane Group Flow (vph)	485	0	0	540	55	4
Confl. Peds. (#/hr)					1	
Heavy Vehicles (%)	8%	1%	5%	5%	0%	6%
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	2	4	
Permitted Phases			2			4
Actuated Green, G (s)	85.1			85.1	9.0	9.0
Effective Green, g (s)	85.1			85.1	9.0	9.0
Actuated g/C Ratio	0.81			0.81	0.09	0.09
Clearance Time (s)	5.6			5.6	5.3	5.3
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2672			2455	154	130
v/s Ratio Prot	0.15				c0.03	
v/s Ratio Perm				c0.18		0.00
v/c Ratio	0.18			0.22	0.36	0.03
Uniform Delay, d1	2.2			2.3	45.3	44.0
Progression Factor	1.63			1.49	1.00	1.00
Incremental Delay, d2	0.1			0.0	1.4	0.1
Delay (s)	3.7			3.5	46.7	44.1
Level of Service	A			A	D	D
Approach Delay (s)	3.7			3.5	45.5	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

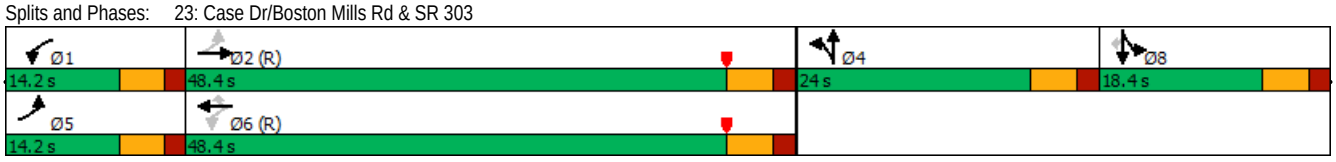
c Critical Lane Group

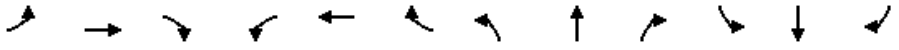
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	419	12	3	372	139	10	19	5	105	26	4
Future Volume (vph)	12	419	12	3	372	139	10	19	5	105	26	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	75		0	0		0	0		200
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.996				0.850		0.981				0.850
Flt Protected	0.950			0.950				0.985			0.962	
Satd. Flow (prot)	1641	1782	0	1770	1792	1568	0	1794	0	0	1781	1417
Flt Permitted	0.476			0.429				0.985			0.962	
Satd. Flow (perm)	822	1782	0	797	1792	1568	0	1794	0	0	1781	1417
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				148		5				136
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		2106			675			1474			1238	
Travel Time (s)		57.4			18.4			40.2			33.8	
Confl. Peds. (#/hr)			3	3								
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	10%	6%	10%	2%	6%	3%	4%	1%	4%	3%	1%	14%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	459	0	3	396	148	0	36	0	0	140	4
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						8
Detector Phase	5	2		1	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	8.0	30.0		8.0	30.0	30.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	14.2	36.5		14.2	36.5	36.5	23.4	23.4		18.4	18.4	18.4
Total Split (s)	14.2	48.4		14.2	48.4	48.4	24.0	24.0		18.4	18.4	18.4
Total Split (%)	13.5%	46.1%		13.5%	46.1%	46.1%	22.9%	22.9%		17.5%	17.5%	17.5%
Yellow Time (s)	3.6	3.6		3.6	3.6	3.6	3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	1.6	1.9		1.6	1.9	1.9	1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
v/c Ratio	0.02	0.39		0.00	0.33	0.14		0.24			0.61	0.01
Control Delay	8.5	12.6		3.7	7.2	3.1		44.4			54.1	0.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	8.5	12.6		3.7	7.2	3.1		44.4			54.1	0.0
Queue Length 50th (ft)	3	136		1	122	8		20			90	0
Queue Length 95th (ft)	12	323		m1	18	0		52			147	0
Internal Link Dist (ft)		2026			595			1394			1158	
Turn Bay Length (ft)	150			75								200
Base Capacity (vph)	630	1179		626	1185	1087		321			249	315
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	0.02	0.39		0.00	0.33	0.14		0.11			0.56	0.01

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 57 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 95
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Case Dr/Boston Mills Rd & SR 303





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	419	12	3	372	139	10	19	5	105	26	4
Future Volume (vph)	12	419	12	3	372	139	10	19	5	105	26	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1641	1782		1768	1792	1568		1794			1781	1417
Flt Permitted	0.48	1.00		0.43	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	822	1782		799	1792	1568		1794			1781	1417
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	13	446	13	3	396	148	11	20	5	112	28	4
RTOR Reduction (vph)	0	1	0	0	0	59	0	5	0	0	0	3
Lane Group Flow (vph)	13	458	0	3	396	89	0	31	0	0	140	1
Confl. Peds. (#/hr)			3	3								
Heavy Vehicles (%)	10%	6%	10%	2%	6%	3%	4%	1%	4%	3%	1%	14%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						8
Actuated Green, G (s)	64.8	63.2		64.8	63.2	63.2		5.2			13.5	13.5
Effective Green, g (s)	64.8	63.2		64.8	63.2	63.2		5.2			13.5	13.5
Actuated g/C Ratio	0.62	0.60		0.62	0.60	0.60		0.05			0.13	0.13
Clearance Time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	519	1072		507	1078	943		88			228	182
v/s Ratio Prot	c0.00	c0.26		0.00	0.22			c0.02			c0.08	
v/s Ratio Perm	0.02			0.00		0.06						0.00
v/c Ratio	0.03	0.43		0.01	0.37	0.09		0.36			0.61	0.00
Uniform Delay, d1	7.9	11.2		8.1	10.7	8.8		48.3			43.3	39.9
Progression Factor	1.00	1.00		0.44	0.58	1.13		1.00			1.00	1.00
Incremental Delay, d2	0.0	1.2		0.0	1.0	0.2		2.5			4.8	0.0
Delay (s)	8.0	12.4		3.5	7.1	10.2		50.7			48.1	39.9
Level of Service	A	B		A	A	B		D			D	D
Approach Delay (s)		12.3			7.9			50.7			47.9	
Approach LOS		B			A			D			D	

Intersection Summary				
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.44			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	21.5	
Intersection Capacity Utilization	51.9%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (vph)	5	611	26	48	546	20	16	3	35	16	8	3
Future Volume (vph)	5	611	26	48	546	20	16	3	35	16	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	50		0		200	0	50	50	
Storage Lanes	1		0	1		0		1	0	1	1	
Taper Length (ft)	25			25				25		25		
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00					1.00	0.98		1.00		0.99
Frt		0.994			0.995			0.867			0.850	0.850
Flt Protected	0.950			0.950			0.950	0.994		0.950		
Satd. Flow (prot)	1770	1798	0	1787	3424	0	1618	1491	0	1752	1583	1583
Flt Permitted	0.411			0.301			0.752	0.988		0.727		
Satd. Flow (perm)	766	1798	0	566	3424	0	1279	1482	0	1338	1583	1563
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			6			73				73
Link Speed (mph)		25			25			25		30		
Link Distance (ft)		550			210			1600		1918		
Travel Time (s)		15.0			5.7			43.6		43.6		
Confl. Peds. (#/hr)			2	2			1		1	1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	5%	3%	1%	5%	2%	6%	3%	2%	3%	2%	2%
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	6	716	0	54	635	0	16	44	0	18	9	3
Turn Type	pm+pt	NA		pm+pt	NA		Perm	Prot		Perm	Prot	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		6
Detector Phase	5	2		1	6		8	8		4	4	6
Switch Phase												
Minimum Initial (s)	7.0	25.0		7.0	25.0		8.0	8.0		8.0	8.0	25.0
Minimum Split (s)	13.0	39.0		13.0	39.0		26.0	26.0		26.0	26.0	39.0
Total Split (s)	13.0	66.0		13.0	66.0		26.0	26.0		26.0	26.0	66.0
Total Split (%)	12.4%	62.9%		12.4%	62.9%		24.8%	24.8%		24.8%	24.8%	62.9%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	C-Min
v/c Ratio	0.01	0.53		0.10	0.23		0.13	0.21		0.14	0.06	0.00
Control Delay	3.0	11.6		3.7	6.4		42.8	5.4		43.0	40.4	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.2		0.1	0.0	0.0
Total Delay	3.0	11.6		3.7	6.4		42.8	5.6		43.1	40.4	0.0
Queue Length 50th (ft)	1	136		11	73		10	0		12	6	0
Queue Length 95th (ft)	4	536		m17	213		29	13		30	19	0
Internal Link Dist (ft)		470			130			1520		1838		
Turn Bay Length (ft)	75			50			200	200		50	50	50
Base Capacity (vph)	689	1345		559	2799		255	354		267	316	1290
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	23		0	0		0	78		69	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.01	0.54		0.10	0.23		0.06	0.16		0.09	0.03	0.00

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 28 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 32: Milford Drive & SR 303

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (vph)	5	611	26	48	546	20	16	3	35	16	8	3
Future Volume (vph)	5	611	26	48	546	20	16	3	35	16	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	0.95		0.95	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.87		1.00	0.85	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.99		0.95	1.00	1.00
Satd. Flow (prot)	1770	1798		1787	3424		1615	1491		1748	1583	1563
Flt Permitted	0.41	1.00		0.30	1.00		0.75	0.99		0.73	1.00	1.00
Satd. Flow (perm)	765	1798		565	3424		1278	1481		1337	1583	1563
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	6	687	29	54	613	22	18	3	39	18	9	3
RTOR Reduction (vph)	0	1	0	0	1	0	0	40	0	0	0	1
Lane Group Flow (vph)	6	715	0	54	634	0	16	4	0	18	9	2
Confl. Peds. (#/hr)			2	2			1		1	1		1
Heavy Vehicles (%)	2%	5%	3%	1%	5%	2%	6%	3%	2%	3%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	Prot		Perm	Prot	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		6
Actuated Green, G (s)	76.9	75.5		85.5	79.8		8.8	8.8		8.8	8.8	79.8
Effective Green, g (s)	76.9	75.5		85.5	79.8		8.8	8.8		8.8	8.8	79.8
Actuated g/C Ratio	0.73	0.72		0.81	0.76		0.08	0.08		0.08	0.08	0.76
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	573	1292		526	2602		107	124		112	132	1187
v/s Ratio Prot	0.00	c0.40		c0.01	c0.19						0.01	
v/s Ratio Perm	0.01			0.08			0.01	0.00		c0.01		0.00
v/c Ratio	0.01	0.55		0.10	0.24		0.15	0.03		0.16	0.07	0.00
Uniform Delay, d1	3.8	6.9		3.7	3.7		44.6	44.2		44.7	44.3	3.0
Progression Factor	0.94	1.16		1.19	1.58		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.0	1.7		0.1	0.2		0.6	0.1		0.7	0.2	0.0
Delay (s)	3.6	9.7		4.5	6.1		45.3	44.3		45.3	44.5	3.0
Level of Service	A	A		A	A		D	D		D	D	A
Approach Delay (s)		9.6			5.9			44.5		40.9		
Approach LOS		A			A			D		D		

Intersection Summary			
HCM 2000 Control Delay	9.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

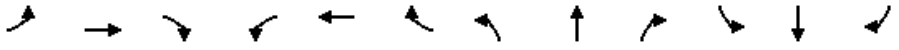
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	607	1	1	595	13	0	0	2	24	0	45
Future Volume (vph)	67	607	1	1	595	13	0	0	2	24	0	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	50		0	0		0	0		75
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00							0.98
Frt					0.997				0.850			0.850
Flt Protected	0.950			0.950							0.950	
Satd. Flow (prot)	1719	1776	0	1805	1777	0	0	1900	1077	0	1805	1553
Flt Permitted	0.298			0.354							0.757	
Satd. Flow (perm)	539	1776	0	673	1777	0	0	1900	1077	0	1438	1518
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)					2							
Link Speed (mph)		25			25			30			25	
Link Distance (ft)		490			714			1574			1803	
Travel Time (s)		13.4			19.5			35.8			49.2	
Confl. Peds. (#/hr)	1					1	1					1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	5%	7%	0%	0%	6%	31%	0%	0%	50%	0%	0%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	699	0	1	699	0	0	0	2	0	28	52
Turn Type	pm+pt	NA		pm+pt	NA				custom	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4		2	8		8
Detector Phase	5	2		1	6		4	4	2	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		8.0	8.0	20.0	8.0	8.0	8.0
Minimum Split (s)	12.0	35.0		12.0	35.0		29.0	29.0	35.0	29.0	29.0	29.0
Total Split (s)	12.0	64.0		12.0	64.0		29.0	29.0	64.0	29.0	29.0	29.0
Total Split (%)	11.4%	61.0%		11.4%	61.0%		27.6%	27.6%	61.0%	27.6%	27.6%	27.6%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag				Lag			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	C-Min		None	C-Min		None	None	C-Min	None	None	None
v/c Ratio	0.15	0.50		0.00	0.55				0.00		0.18	0.31
Control Delay	6.1	17.3		7.0	12.3				7.0		42.4	46.0
Queue Delay	0.0	0.6		0.0	0.1				0.0		0.0	0.0
Total Delay	6.1	17.8		7.0	12.4				7.0		42.4	46.0
Queue Length 50th (ft)	17	388		0	182				0		18	34
Queue Length 95th (ft)	38	596		m1	341				4		39	60
Internal Link Dist (ft)		410			634			1494			1723	
Turn Bay Length (ft)	150			50								75
Base Capacity (vph)	500	1406		571	1277				853		314	332
Starvation Cap Reductn	0	335		0	63				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	0.15	0.65		0.00	0.58				0.00		0.09	0.16

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 74 (70%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: SR 303 & Library Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	607	1	1	595	13	0	0	2	24	0	45
Future Volume (vph)	67	607	1	1	595	13	0	0	2	24	0	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0				6.0		6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00				1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00				0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00		0.95	1.00
Satd. Flow (prot)	1719	1775		1805	1777				1077		1805	1518
Flt Permitted	0.30	1.00		0.35	1.00				1.00		0.76	1.00
Satd. Flow (perm)	539	1775		672	1777				1077		1439	1518
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	77	698	1	1	684	15	0	0	2	28	0	52
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	77	699	0	1	698	0	0	0	2	0	28	52
Confl. Peds. (#/hr)	1					1	1					1
Heavy Vehicles (%)	5%	7%	0%	0%	6%	31%	0%	0%	50%	0%	0%	4%
Turn Type	pm+pt	NA		pm+pt	NA				custom	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4		2	8		8
Actuated Green, G (s)	81.3	76.0		72.9	71.8				76.0		9.9	9.9
Effective Green, g (s)	81.3	76.0		72.9	71.8				76.0		9.9	9.9
Actuated g/C Ratio	0.77	0.72		0.69	0.68				0.72		0.09	0.09
Clearance Time (s)	6.0	6.0		6.0	6.0				6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0		3.0	3.0
Lane Grp Cap (vph)	476	1284		478	1215				779		135	143
v/s Ratio Prot	c0.01	c0.39		0.00	c0.39							
v/s Ratio Perm	0.12			0.00					0.00		0.02	c0.03
v/c Ratio	0.16	0.54		0.00	0.57				0.00		0.21	0.36
Uniform Delay, d1	4.8	6.6		5.2	8.6				4.0		43.9	44.6
Progression Factor	1.52	2.21		1.43	0.98				1.00		1.00	1.00
Incremental Delay, d2	0.1	1.5		0.0	1.9				0.0		0.8	1.6
Delay (s)	7.4	16.1		7.5	10.4				4.0		44.7	46.2
Level of Service	A	B		A	B				A		D	D
Approach Delay (s)		15.2			10.4			4.0			45.7	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

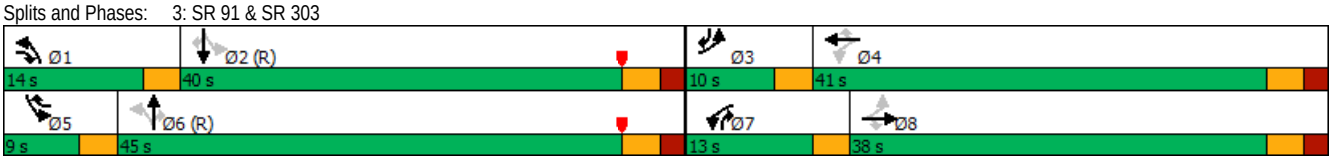
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	369	238	151	345	29	241	407	220	47	475	168
Future Volume (vph)	190	369	238	151	345	29	241	407	220	47	475	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		225	100		100	250		125	200		275
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		714			1807			1388			876	
Travel Time (s)		19.5			49.3			37.9			23.9	
Confl. Peds. (#/hr)	7					7	5					5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	3%	1%	2%	0%	2%	2%	2%	0%	2%	9%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	380	245	156	356	30	248	420	227	48	490	173
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	1	7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	15.0	5.0	5.0	15.0	5.0
Minimum Split (s)	9.0	31.0	9.0	9.0	31.0	9.0	9.0	27.0	9.0	9.0	27.0	9.0
Total Split (s)	10.0	38.0	14.0	13.0	41.0	9.0	14.0	45.0	13.0	9.0	40.0	10.0
Total Split (%)	9.5%	36.2%	13.3%	12.4%	39.0%	8.6%	13.3%	42.9%	12.4%	8.6%	38.1%	9.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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	0.0	0.0
Total Lost Time (s)	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
v/c Ratio	0.67	0.81	0.32	0.56	0.74	0.05	0.63	0.50	0.22	0.11	0.68	0.22
Control Delay	31.1	46.2	3.8	27.9	44.0	0.2	23.0	22.3	3.4	17.0	40.5	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.1	46.2	3.8	27.9	44.0	0.2	23.0	22.3	3.4	17.0	40.5	7.8
Queue Length 50th (ft)	63	225	11	66	219	0	102	224	24	21	324	31
Queue Length 95th (ft)	#122	268	26	102	286	0	#170	229	11	m27	m387	m44
Internal Link Dist (ft)		634			1727			1308			796	
Turn Bay Length (ft)	225		225	100		100	250		125	200		275
Base Capacity (vph)	292	585	763	285	638	589	398	847	1042	450	716	796
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.65	0.32	0.55	0.56	0.05	0.62	0.50	0.22	0.11	0.68	0.22

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated
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: SR 91 & SR 303



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	369	238	151	345	29	241	407	220	47	475	168
Future Volume (vph)	190	369	238	151	345	29	241	407	220	47	475	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0
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
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1767	1863	1568	1787	1863	1568	1770	1863	1583	1805	1863	1443
Flt Permitted	0.27	1.00	1.00	0.21	1.00	1.00	0.24	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	509	1863	1568	391	1863	1568	440	1863	1583	840	1863	1443
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	196	380	245	156	356	30	248	420	227	48	490	173
RTOR Reduction (vph)	0	0	116	0	0	21	0	0	104	0	0	91
Lane Group Flow (vph)	196	380	129	156	356	9	248	420	123	48	490	82
Confl. Peds. (#/hr)	7					7	5					5
Heavy Vehicles (%)	2%	2%	3%	1%	2%	0%	2%	2%	2%	0%	2%	9%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3
Permitted Phases	8		8	4		4	6		6	2		2
Actuated Green, G (s)	35.8	26.6	38.7	37.4	27.4	32.7	55.4	47.1	57.1	45.6	40.3	49.5
Effective Green, g (s)	35.8	26.6	38.7	37.4	27.4	32.7	55.4	47.1	57.1	45.6	40.3	49.5
Actuated g/C Ratio	0.34	0.25	0.37	0.36	0.26	0.31	0.53	0.45	0.54	0.43	0.38	0.47
Clearance Time (s)	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	283	471	577	272	486	488	385	835	860	413	715	680
v/s Ratio Prot	c0.06	c0.20	0.03	c0.05	0.19	0.00	c0.07	0.23	0.01	0.01	c0.26	0.01
v/s Ratio Perm	0.18		0.06	0.15		0.00	0.27		0.06	0.04		0.05
v/c Ratio	0.69	0.81	0.22	0.57	0.73	0.02	0.64	0.50	0.14	0.12	0.69	0.12
Uniform Delay, d1	26.7	36.8	22.8	25.4	35.5	25.0	16.9	20.6	11.9	17.4	27.0	15.5
Progression Factor	0.91	0.95	0.56	1.00	1.00	1.00	1.11	0.90	1.70	1.23	1.27	2.71
Incremental Delay, d2	5.9	8.2	0.2	2.9	5.6	0.0	3.2	1.9	0.1	0.1	3.3	0.0
Delay (s)	30.3	43.3	13.0	28.3	41.1	25.1	22.0	20.4	20.2	21.6	37.5	42.1
Level of Service	C	D	B	C	D	C	C	C	C	C	D	D
Approach Delay (s)		31.1			36.5			20.8			37.5	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	607	98	53	499	115	75
Future Volume (vph)	607	98	53	499	115	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	25			25	25	
Link Distance (ft)	675			390	1212	
Travel Time (s)	18.4			10.6	33.1	
Confl. Peds. (#/hr)					3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	0%	5%	2%	0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	734	0	0	575	120	78
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	2	4	
Permitted Phases			2			4
Detector Phase	2		1	2	4	4
Switch Phase						
Minimum Initial (s)	25.0		9.0	25.0	11.0	11.0
Minimum Split (s)	31.6		15.6	31.6	27.3	27.3
Total Split (s)	54.4		15.6	54.4	35.0	35.0
Total Split (%)	51.8%		14.9%	51.8%	33.3%	33.3%
Yellow Time (s)	3.6		3.6	3.6	3.3	3.3
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.6			5.6	5.3	5.3
Lead/Lag	Lag		Lead	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	C-Min		None	C-Min	None	None
v/c Ratio	0.27			0.26	0.54	0.29
Control Delay	3.0			4.8	51.7	11.9
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	3.0			4.8	51.7	11.9
Queue Length 50th (ft)	21			3	77	0
Queue Length 95th (ft)	2			104	130	41
Internal Link Dist (ft)	595			310	1132	
Turn Bay Length (ft)						
Base Capacity (vph)	2677			2172	500	512
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	0.27			0.26	0.24	0.15

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 25 (24%), Referenced to phase 2:EBWB and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	

Splits and Phases: 12: Shopping Center & SR 303

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	607	98	53	499	115	75
Future Volume (vph)	607	98	53	499	115	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6			5.6	5.3	5.3
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	1.00			1.00	1.00	1.00
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3470			3437	1770	1615
Flt Permitted	1.00			0.82	0.95	1.00
Satd. Flow (perm)	3470			2821	1770	1615
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	632	102	55	520	120	78
RTOR Reduction (vph)	5	0	0	0	0	68
Lane Group Flow (vph)	729	0	0	575	120	10
Confl. Peds. (#/hr)					3	
Heavy Vehicles (%)	2%	1%	0%	5%	2%	0%
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	2	4	
Permitted Phases			2			4
Actuated Green, G (s)	80.8			80.8	13.3	13.3
Effective Green, g (s)	80.8			80.8	13.3	13.3
Actuated g/C Ratio	0.77			0.77	0.13	0.13
Clearance Time (s)	5.6			5.6	5.3	5.3
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2670			2170	224	204
v/s Ratio Prot	c0.21				c0.07	
v/s Ratio Perm				0.20		0.01
v/c Ratio	0.27			0.26	0.54	0.05
Uniform Delay, d1	3.5			3.5	43.0	40.3
Progression Factor	0.77			1.21	1.00	1.00
Incremental Delay, d2	0.2			0.1	2.5	0.1
Delay (s)	2.9			4.3	45.4	40.4
Level of Service	A			A	D	D
Approach Delay (s)	2.9			4.3	43.4	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

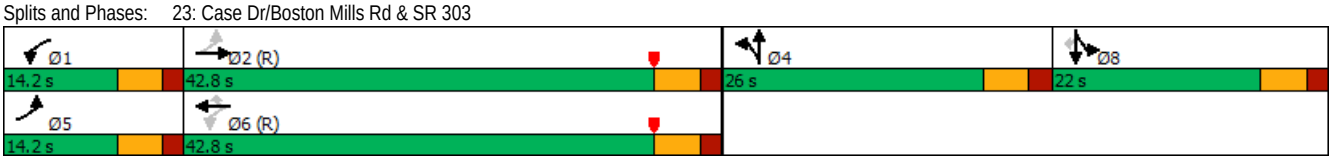
c Critical Lane Group

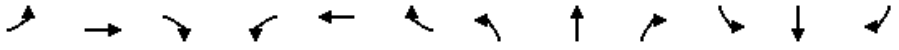
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	532	15	22	552	98	16	32	10	217	65	18
Future Volume (vph)	5	532	15	22	552	98	16	32	10	217	65	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	75		0	0		0	0		200
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1731			675			1227			1050	
Travel Time (s)		47.2			18.4			33.5			28.6	
Confl. Peds. (#/hr)			3	3			2		1	1		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	6%	10%	2%	6%	3%	4%	1%	4%	3%	1%	14%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	594	0	24	600	107	0	63	0	0	307	20
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						8
Detector Phase	5	2		1	6	6	4	4		8	8	8
Switch Phase												
Minimum Initial (s)	8.0	30.0		8.0	30.0	30.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	14.2	36.5		14.2	36.5	36.5	23.4	23.4		18.4	18.4	18.4
Total Split (s)	14.2	42.8		14.2	42.8	42.8	26.0	26.0		22.0	22.0	22.0
Total Split (%)	13.5%	40.8%		13.5%	40.8%	40.8%	24.8%	24.8%		21.0%	21.0%	21.0%
Yellow Time (s)	3.6	3.6		3.6	3.6	3.6	3.6	3.6		3.6	3.6	3.6
All-Red Time (s)	1.6	1.9		1.6	1.9	1.9	1.8	1.8		1.8	1.8	1.8
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
v/c Ratio	0.02	0.71		0.08	0.67	0.13		0.38			0.66	0.04
Control Delay	13.8	30.8		10.3	26.4	2.5		45.7			43.3	0.2
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Delay	13.8	30.8		10.3	26.4	2.5		45.7			43.3	0.2
Queue Length 50th (ft)	2	286		9	409	7		35			185	0
Queue Length 95th (ft)	8	#593		14	#599	6		75			289	0
Internal Link Dist (ft)		1651			595			1147			970	
Turn Bay Length (ft)	150			75								200
Base Capacity (vph)	306	841		313	890	847		357			462	457
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	0.02	0.71		0.08	0.67	0.13		0.18			0.66	0.04

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 104 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 95
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 23: Case Dr/Boston Mills Rd & SR 303





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	532	15	22	552	98	16	32	10	217	65	18
Future Volume (vph)	5	532	15	22	552	98	16	32	10	217	65	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.96	1.00
Satd. Flow (prot)	1641	1782		1770	1792	1568		1784			1784	1377
Flt Permitted	0.23	1.00		0.20	1.00	1.00		0.99			0.96	1.00
Satd. Flow (perm)	391	1782		376	1792	1568		1784			1784	1377
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	578	16	24	600	107	17	35	11	236	71	20
RTOR Reduction (vph)	0	1	0	0	0	59	0	8	0	0	0	15
Lane Group Flow (vph)	5	593	0	24	600	48	0	55	0	0	307	5
Confl. Peds. (#/hr)			3	3			2		1	1		2
Heavy Vehicles (%)	10%	6%	10%	2%	6%	3%	4%	1%	4%	3%	1%	14%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						8
Actuated Green, G (s)	47.0	45.4		50.2	47.0	47.0		7.7			27.2	27.2
Effective Green, g (s)	47.0	45.4		50.2	47.0	47.0		7.7			27.2	27.2
Actuated g/C Ratio	0.45	0.43		0.48	0.45	0.45		0.07			0.26	0.26
Clearance Time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	194	770		222	802	701		130			462	356
v/s Ratio Prot	0.00	0.33		c0.00	c0.33			c0.03			c0.17	
v/s Ratio Perm	0.01			0.05		0.03						0.00
v/c Ratio	0.03	0.77		0.11	0.75	0.07		0.42			0.66	0.01
Uniform Delay, d1	18.4	25.4		17.7	24.1	16.5		46.5			34.8	28.9
Progression Factor	1.00	1.00		0.71	0.96	1.03		1.00			1.00	1.00
Incremental Delay, d2	0.1	7.3		0.2	6.2	0.2		2.2			3.6	0.0
Delay (s)	18.4	32.7		12.8	29.3	17.1		48.7			38.4	28.9
Level of Service	B	C		B	C	B		D			D	C
Approach Delay (s)		32.6			27.0			48.7			37.8	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	21.5	
Intersection Capacity Utilization	60.2%	ICU Level of Service	B	
Analysis Period (min)	15			

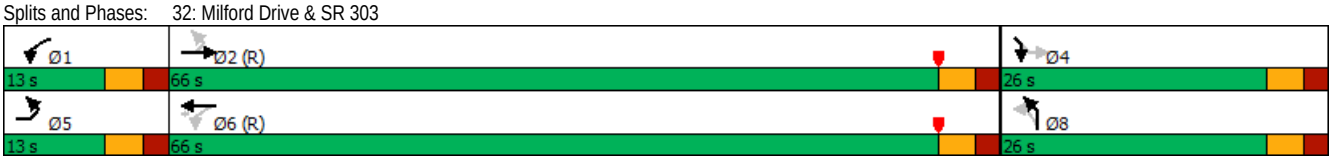
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (vph)	36	723	20	52	606	72	13	33	44	43	34	25
Future Volume (vph)	36	723	20	52	606	72	13	33	44	43	34	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	50		0		200	0	50	50	
Storage Lanes	1		0	1		0		1	0	1	1	
Taper Length (ft)	25			25				25		25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25		30		
Link Distance (ft)		550			210			1169		1106		
Travel Time (s)		15.0			5.7			31.9		25.1		
Confl. Peds. (#/hr)			12	12			4		9	9		4
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	3%	1%	5%	2%	6%	3%	2%	3%	2%	2%
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	38	790	0	55	722	0	13	83	0	46	36	27
Turn Type	pm+pt	NA		pm+pt	NA		Perm	Prot		Perm	Prot	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		6
Detector Phase	5	2		1	6		8	8		4	4	6
Switch Phase												
Minimum Initial (s)	7.0	25.0		7.0	25.0		8.0	8.0		8.0	8.0	25.0
Minimum Split (s)	13.0	39.0		13.0	39.0		26.0	26.0		26.0	26.0	39.0
Total Split (s)	13.0	66.0		13.0	66.0		26.0	26.0		26.0	26.0	66.0
Total Split (%)	12.4%	62.9%		12.4%	62.9%		24.8%	24.8%		24.8%	24.8%	62.9%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	C-Min
v/c Ratio	0.06	0.59		0.11	0.28		0.10	0.36		0.34	0.21	0.02
Control Delay	4.4	13.7		3.5	5.8		40.9	16.1		48.6	43.7	0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	4.4	13.7		3.5	5.8		40.9	16.1		48.6	43.7	0.0
Queue Length 50th (ft)	3	226		1	67		8	6		30	23	0
Queue Length 95th (ft)	21	671		m17	130		25	49		60	49	0
Internal Link Dist (ft)		470			130			1089		1026		
Turn Bay Length (ft)	75			50			200	200		50	50	50
Base Capacity (vph)	629	1333		503	2596		248	371		252	316	1207
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	5		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.06	0.59		0.11	0.28		0.05	0.22		0.18	0.11	0.02

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 67 (64%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 32: Milford Drive & SR 303



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (vph)	36	723	20	52	606	72	13	33	44	43	34	25
Future Volume (vph)	36	723	20	52	606	72	13	33	44	43	34	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	0.95		0.95	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.99	1.00		0.98	1.00	1.00
Frt	1.00	1.00		1.00	0.98		1.00	0.92		1.00	0.85	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (prot)	1770	1801		1787	3393		1608	1535		1716	1583	1558
Flt Permitted	0.37	1.00		0.27	1.00		0.73	1.00		0.70	1.00	1.00
Satd. Flow (perm)	691	1801		507	3393		1242	1563		1265	1583	1558
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	38	769	21	55	645	77	14	35	47	46	36	27
RTOR Reduction (vph)	0	1	0	0	6	0	0	66	0	0	0	7
Lane Group Flow (vph)	38	789	0	55	716	0	13	17	0	46	36	20
Confl. Peds. (#/hr)			12	12			4		9	9		4
Heavy Vehicles (%)	2%	5%	3%	1%	5%	2%	6%	3%	2%	3%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	Prot		Perm	Prot	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6			8			4		6
Actuated Green, G (s)	78.9	74.7		81.9	76.2		9.6	9.6		9.6	9.6	76.2
Effective Green, g (s)	78.9	74.7		81.9	76.2		9.6	9.6		9.6	9.6	76.2
Actuated g/C Ratio	0.75	0.71		0.78	0.73		0.09	0.09		0.09	0.09	0.73
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	562	1281		464	2462		113	142		115	144	1130
v/s Ratio Prot	0.00	c0.44		c0.01	0.21						0.02	
v/s Ratio Perm	0.05			0.09			0.01	0.01		c0.04		0.01
v/c Ratio	0.07	0.62		0.12	0.29		0.12	0.12		0.40	0.25	0.02
Uniform Delay, d1	3.3	7.8		4.7	5.0		43.8	43.8		45.0	44.4	4.0
Progression Factor	1.34	1.18		1.00	0.96		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	2.2		0.1	0.2		0.5	0.4		2.3	0.9	0.0
Delay (s)	4.5	11.4		4.8	5.1		44.3	44.2		47.3	45.3	4.0
Level of Service	A	B		A	A		D	D		D	D	A
Approach Delay (s)		11.1			5.0			44.2		35.9		
Approach LOS		B			A			D		D		

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

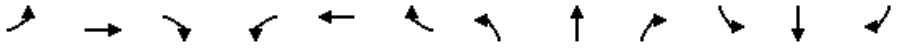
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	736	8	10	597	40	10	0	11	94	3	163
Future Volume (vph)	119	736	8	10	597	40	10	0	11	94	3	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	50		0	0		0	0		75
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			No			No
Link Speed (mph)		25			25			30			25	
Link Distance (ft)		490			714			1207			1137	
Travel Time (s)		13.4			19.5			27.4			31.0	
Confl. Peds. (#/hr)	1					1	1		8	8		1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	0%	2%	3%	0%	0%	0%	2%	0%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	800	0	11	685	0	0	11	12	0	104	175
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	custom	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4		2	8		8
Detector Phase	5	2		1	6		4	4	2	8	8	8
Switch Phase												
Minimum Initial (s)	5.0	20.0		5.0	20.0		8.0	8.0	20.0	8.0	8.0	8.0
Minimum Split (s)	12.0	35.0		12.0	35.0		29.0	29.0	35.0	29.0	29.0	29.0
Total Split (s)	18.0	64.0		12.0	58.0		29.0	29.0	64.0	29.0	29.0	29.0
Total Split (%)	17.1%	61.0%		11.4%	55.2%		27.6%	27.6%	61.0%	27.6%	27.6%	27.6%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag				Lag			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	C-Min		None	C-Min		None	None	C-Min	None	None	None
v/c Ratio	0.29	0.61		0.03	0.63			0.05	0.01		0.49	0.70
Control Delay	5.9	8.6		6.2	20.5			34.9	7.7		46.9	55.9
Queue Delay	0.0	0.1		0.0	0.2			0.0	0.0		0.0	0.0
Total Delay	5.9	8.7		6.2	20.8			34.9	7.7		46.9	55.9
Queue Length 50th (ft)	9	81		3	371			6	2		64	112
Queue Length 95th (ft)	57	304		m5	325			21	12		111	174
Internal Link Dist (ft)		410			634			1127			1057	
Turn Bay Length (ft)	150			50								75
Base Capacity (vph)	495	1305		406	1094			286	1094		290	342
Starvation Cap Reductn	0	59		0	68			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	0.26	0.64		0.03	0.67			0.04	0.01		0.36	0.51

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 61 (58%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: SR 303 & Library Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	736	8	10	597	40	10	0	11	94	3	163
Future Volume (vph)	119	736	8	10	597	40	10	0	11	94	3	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.97		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		0.98	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1805	1860		1805	1842			1801	1559		1745	1563
Flt Permitted	0.25	1.00		0.27	1.00			0.69	1.00		0.72	1.00
Satd. Flow (perm)	472	1860		511	1842			1308	1559		1326	1563
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	128	791	9	11	642	43	11	0	12	101	3	175
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	128	800	0	11	683	0	0	11	12	0	104	175
Confl. Peds. (#/hr)	1					1	1		8	8		1
Heavy Vehicles (%)	0%	2%	0%	0%	2%	3%	0%	0%	0%	2%	0%	1%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	custom	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4		2	8		8
Actuated Green, G (s)	76.1	68.9		63.4	62.2			16.9	68.9		16.9	16.9
Effective Green, g (s)	76.1	68.9		63.4	62.2			16.9	68.9		16.9	16.9
Actuated g/C Ratio	0.72	0.66		0.60	0.59			0.16	0.66		0.16	0.16
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	442	1220		323	1091			210	1023		213	251
v/s Ratio Prot	c0.02	c0.43		0.00	0.37							
v/s Ratio Perm	0.19			0.02				0.01	0.01		0.08	c0.11
v/c Ratio	0.29	0.66		0.03	0.63			0.05	0.01		0.49	0.70
Uniform Delay, d1	8.2	10.9		9.6	13.9			37.3	6.3		40.1	41.6
Progression Factor	0.87	0.63		1.07	1.16			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	2.4		0.0	2.4			0.1	0.0		1.8	8.2
Delay (s)	7.5	9.2		10.2	18.5			37.4	6.3		41.9	49.8
Level of Service	A	A		B	B			D	A		D	D
Approach Delay (s)		9.0			18.4			21.2			46.8	
Approach LOS		A			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

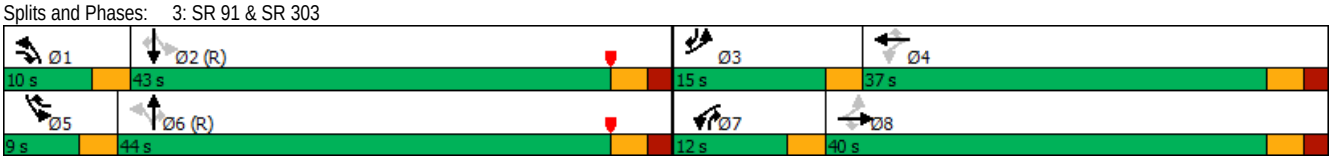
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	186	96	122	233	38	206	459	127	29	325	174
Future Volume (vph)	129	186	96	122	233	38	206	459	127	29	325	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		225	100		100	250		125	200		275
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		714			738			1388			876	
Travel Time (s)		19.5			20.1			37.9			23.9	
Confl. Peds. (#/hr)			3	3			1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	12%	5%	4%	4%	9%	3%	3%	8%	4%	14%	7%	9%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	202	104	133	253	41	224	499	138	32	353	189
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	1	7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	15.0	5.0	5.0	15.0	5.0
Minimum Split (s)	9.0	31.0	9.0	9.0	31.0	9.0	9.0	27.0	9.0	9.0	27.0	9.0
Total Split (s)	15.0	40.0	10.0	12.0	37.0	9.0	10.0	44.0	12.0	9.0	43.0	15.0
Total Split (%)	14.3%	38.1%	9.5%	11.4%	35.2%	8.6%	9.5%	41.9%	11.4%	8.6%	41.0%	14.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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	0.0	0.0
Total Lost Time (s)	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
v/c Ratio	0.48	0.54	0.18	0.37	0.74	0.08	0.40	0.57	0.14	0.08	0.45	0.21
Control Delay	23.3	35.8	7.6	25.7	52.6	4.8	7.0	16.3	2.6	12.7	21.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.3	35.8	7.6	25.7	52.7	4.8	7.0	16.3	2.6	12.7	21.2	0.6
Queue Length 50th (ft)	34	122	24	62	161	0	28	180	0	9	118	0
Queue Length 95th (ft)	120	168	33	95	229	17	70	437	30	m13	m246	m2
Internal Link Dist (ft)		634			658			1308			796	
Turn Bay Length (ft)	225		225	100		100	250		125	200		275
Base Capacity (vph)	310	603	571	361	531	516	556	882	983	392	786	921
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	10	0	0	0	0	0	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.33	0.18	0.37	0.49	0.08	0.40	0.57	0.14	0.08	0.45	0.21

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: SR 91 & SR 303



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	186	96	122	233	38	206	459	127	29	325	174
Future Volume (vph)	129	186	96	122	233	38	206	459	127	29	325	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0
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
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1612	1810	1526	1732	1743	1568	1752	1759	1524	1583	1776	1455
Flt Permitted	0.33	1.00	1.00	0.49	1.00	1.00	0.41	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	553	1810	1526	901	1743	1568	762	1759	1524	634	1776	1455
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	202	104	133	253	41	224	499	138	32	353	189
RTOR Reduction (vph)	0	0	72	0	0	31	0	0	45	0	0	86
Lane Group Flow (vph)	140	202	32	133	253	10	224	499	93	32	353	104
Confl. Peds. (#/hr)			3	3			1		1	1		1
Heavy Vehicles (%)	12%	5%	4%	4%	9%	3%	3%	8%	4%	14%	7%	9%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3
Permitted Phases	8		8	4		4	6		6	2		2
Actuated Green, G (s)	32.6	21.6	32.6	30.4	20.5	25.9	60.5	52.1	62.0	51.9	46.5	57.5
Effective Green, g (s)	32.6	21.6	32.6	30.4	20.5	25.9	60.5	52.1	62.0	51.9	46.5	57.5
Actuated g/C Ratio	0.31	0.21	0.31	0.29	0.20	0.25	0.58	0.50	0.59	0.49	0.44	0.55
Clearance Time (s)	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	282	372	473	339	340	386	542	872	899	362	786	796
v/s Ratio Prot	c0.05	0.11	0.01	0.04	c0.15	0.00	c0.04	c0.28	0.01	0.00	0.20	0.01
v/s Ratio Perm	0.10		0.01	0.08		0.01	0.19		0.05	0.04		0.06
v/c Ratio	0.50	0.54	0.07	0.39	0.74	0.03	0.41	0.57	0.10	0.09	0.45	0.13
Uniform Delay, d1	27.9	37.3	25.5	28.8	39.8	30.0	11.7	18.6	9.4	14.2	20.3	11.6
Progression Factor	0.80	0.85	1.92	1.00	1.00	1.00	0.45	0.65	0.71	1.08	0.86	0.09
Incremental Delay, d2	1.2	1.4	0.1	0.8	8.5	0.0	0.5	2.4	0.0	0.1	1.4	0.1
Delay (s)	23.5	33.3	49.1	29.6	48.3	30.0	5.7	14.6	6.7	15.4	18.9	1.1
Level of Service	C	C	D	C	D	C	A	B	A	B	B	A
Approach Delay (s)		33.9			40.7			11.0			12.9	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9
Lane Configurations							
Traffic Volume (vph)	379	72	39	458	51	47	
Future Volume (vph)	379	72	39	458	51	47	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Right Turn on Red		Yes				Yes	
Link Speed (mph)	25			25	25		
Link Distance (ft)	675			390	240		
Travel Time (s)	18.4			10.6	6.5		
Confl. Peds. (#/hr)					1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	8%	1%	5%	5%	0%	6%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	490	0	0	540	55	51	
Turn Type	NA		pm+pt	NA	Prot	Perm	
Protected Phases	2		1	2	4		9
Permitted Phases			2			4	
Detector Phase	2		1	2	4	4	
Switch Phase							
Minimum Initial (s)	25.0		9.0	25.0	11.0	11.0	2.0
Minimum Split (s)	31.6		15.6	31.6	23.3	23.3	4.0
Total Split (s)	57.4		15.6	57.4	28.0	28.0	4.0
Total Split (%)	54.7%		14.9%	54.7%	26.7%	26.7%	4%
Yellow Time (s)	3.6		3.6	3.6	3.3	3.3	2.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0	
Total Lost Time (s)	5.6			5.6	5.3	5.3	
Lead/Lag	Lag		Lead	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	C-Min		None	C-Min	None	None	None
v/c Ratio	0.18			0.22	0.29	0.25	
Control Delay	3.7			3.1	47.5	15.4	
Queue Delay	0.0			0.0	0.0	0.0	
Total Delay	3.7			3.1	47.5	15.4	
Queue Length 50th (ft)	82			4	35	0	
Queue Length 95th (ft)	16			97	73	36	
Internal Link Dist (ft)	595			310	160		
Turn Bay Length (ft)							
Base Capacity (vph)	2699			2475	390	369	
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	0.18			0.22	0.14	0.14	

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 21 (20%), Referenced to phase 2:EBWB and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	

Splits and Phases: 12: Shopping Center & SR 303

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	379	72	39	458	51	47
Future Volume (vph)	379	72	39	458	51	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6			5.6	5.3	5.3
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	1.00			1.00	1.00	1.00
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3297			3425	1805	1524
Flt Permitted	1.00			0.88	0.95	1.00
Satd. Flow (perm)	3297			3029	1805	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	412	78	42	498	55	51
RTOR Reduction (vph)	6	0	0	0	0	47
Lane Group Flow (vph)	484	0	0	540	55	4
Confl. Peds. (#/hr)					1	
Heavy Vehicles (%)	8%	1%	5%	5%	0%	6%
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	2	4	
Permitted Phases			2			4
Actuated Green, G (s)	82.0			82.0	9.0	9.0
Effective Green, g (s)	82.0			82.0	9.0	9.0
Actuated g/C Ratio	0.78			0.78	0.09	0.09
Clearance Time (s)	5.6			5.6	5.3	5.3
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2574			2365	154	130
v/s Ratio Prot	0.15				c0.03	
v/s Ratio Perm				c0.18		0.00
v/c Ratio	0.19			0.23	0.36	0.03
Uniform Delay, d1	3.0			3.1	45.3	44.0
Progression Factor	1.25			0.91	1.00	1.00
Incremental Delay, d2	0.1			0.0	1.4	0.1
Delay (s)	3.8			2.8	46.7	44.1
Level of Service	A			A	D	D
Approach Delay (s)	3.8			2.8	45.5	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

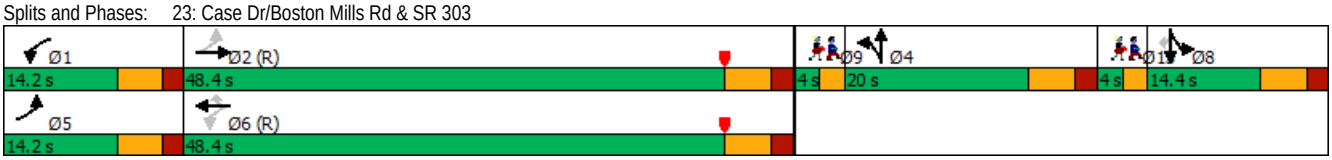
c Critical Lane Group

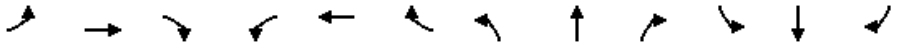
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9	Ø13
Lane Configurations														
Traffic Volume (vph)	12	419	12	3	372	139	10	19	5	105	26	4		
Future Volume (vph)	12	419	12	3	372	139	10	19	5	105	26	4		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	150		0	75		0	0		0	0		200		
Storage Lanes	1		0	1		1	0		0	0		1		
Taper Length (ft)	25			25			25			25				
Right Turn on Red			Yes			Yes			Yes			Yes		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		738			675			259			356			
Travel Time (s)		20.1			18.4			7.1			9.7			
Confl. Peds. (#/hr)			3	3										
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94		
Heavy Vehicles (%)	10%	6%	10%	2%	6%	3%	4%	1%	4%	3%	1%	14%		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	13	459	0	3	396	148	0	36	0	0	140	4		
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	Perm		
Protected Phases	5	2		1	6		4	4		8	8		9	13
Permitted Phases	2			6		6						8		
Detector Phase	5	2		1	6	6	4	4		8	8	8		
Switch Phase														
Minimum Initial (s)	8.0	30.0		8.0	30.0	30.0	5.0	5.0		5.0	5.0	5.0	2.0	2.0
Minimum Split (s)	14.2	36.5		14.2	36.5	36.5	19.4	19.4		14.4	14.4	14.4	4.0	4.0
Total Split (s)	14.2	48.4		14.2	48.4	48.4	20.0	20.0		14.4	14.4	14.4	4.0	4.0
Total Split (%)	13.5%	46.1%		13.5%	46.1%	46.1%	19.0%	19.0%		13.7%	13.7%	13.7%	4%	4%
Yellow Time (s)	3.6	3.6		3.6	3.6	3.6	3.6	3.6		3.6	3.6	3.6	2.0	2.0
All-Red Time (s)	1.6	1.9		1.6	1.9	1.9	1.8	1.8		1.8	1.8	1.8	0.0	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)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4		
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag		Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None	None	None
v/c Ratio	0.02	0.40		0.01	0.34	0.14		0.28			0.55	0.01		
Control Delay	8.7	13.1		2.3	7.9	1.9		46.1			49.7	0.0		
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0		
Total Delay	8.7	13.1		2.3	7.9	1.9		46.1			49.7	0.0		
Queue Length 50th (ft)	3	141		1	119	12		20			88	0		
Queue Length 95th (ft)	12	323		m0	232	14		52			147	0		
Internal Link Dist (ft)		658			595			179			276			
Turn Bay Length (ft)	150			75								200		
Base Capacity (vph)	615	1156		610	1162	1079		253			255	355		
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	0.02	0.40		0.00	0.34	0.14		0.14			0.55	0.01		

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 57 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 95
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Case Dr/Boston Mills Rd & SR 303





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	419	12	3	372	139	10	19	5	105	26	4
Future Volume (vph)	12	419	12	3	372	139	10	19	5	105	26	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1641	1782		1768	1792	1568		1794			1781	1417
Flt Permitted	0.47	1.00		0.42	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	814	1782		788	1792	1568		1794			1781	1417
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	13	446	13	3	396	148	11	20	5	112	28	4
RTOR Reduction (vph)	0	1	0	0	0	61	0	5	0	0	0	3
Lane Group Flow (vph)	13	458	0	3	396	87	0	31	0	0	140	1
Confl. Peds. (#/hr)			3	3								
Heavy Vehicles (%)	10%	6%	10%	2%	6%	3%	4%	1%	4%	3%	1%	14%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						8
Actuated Green, G (s)	63.4	61.8		63.4	61.8	61.8		5.0			15.1	15.1
Effective Green, g (s)	63.4	61.8		63.4	61.8	61.8		5.0			15.1	15.1
Actuated g/C Ratio	0.60	0.59		0.60	0.59	0.59		0.05			0.14	0.14
Clearance Time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	504	1048		490	1054	922		85			256	203
v/s Ratio Prot	c0.00	c0.26		0.00	0.22			c0.02			c0.08	
v/s Ratio Perm	0.02			0.00		0.06						0.00
v/c Ratio	0.03	0.44		0.01	0.38	0.09		0.37			0.55	0.00
Uniform Delay, d1	8.5	12.0		8.7	11.4	9.4		48.5			41.8	38.5
Progression Factor	1.00	1.00		0.25	0.61	1.14		1.00			1.00	1.00
Incremental Delay, d2	0.0	1.3		0.0	1.0	0.2		2.7			2.4	0.0
Delay (s)	8.5	13.3		2.1	8.0	11.0		51.1			44.2	38.5
Level of Service	A	B		A	A	B		D			D	D
Approach Delay (s)		13.2			8.8			51.1			44.0	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2	Ø9
Lane Configurations													
Traffic Volume (vph)	5	611	26	48	546	20	16	3	35	16	8	3	
Future Volume (vph)	5	611	26	48	546	20	16	3	35	16	8	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	50		0		200	0	50	50		
Storage Lanes	1		0	1		0		1	0	1	1		
Taper Length (ft)	25			25				25		25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		25			25			25		30			
Link Distance (ft)		550			210			184		257			
Travel Time (s)		15.0			5.7			5.0		5.8			
Confl. Peds. (#/hr)			2	2			1		1	1		1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Heavy Vehicles (%)	2%	5%	3%	1%	5%	2%	6%	3%	2%	3%	2%	2%	
Shared Lane Traffic (%)							10%						
Lane Group Flow (vph)	6	716	0	54	635	0	16	44	0	18	9	3	
Turn Type	pm+pt	NA		pm+pt	NA		Prot	Prot		Prot	Prot	Prot	
Protected Phases	5	2		1	6		8	8		4	4	4	9
Permitted Phases	2			6									
Detector Phase	5	2		1	6		8	8		4	4	4	
Switch Phase													
Minimum Initial (s)	7.0	25.0		7.0	25.0		8.0	8.0		8.0	8.0	8.0	2.0
Minimum Split (s)	13.0	39.0		13.0	39.0		22.0	22.0		13.0	13.0	13.0	4.0
Total Split (s)	13.0	53.0		13.0	53.0		22.0	22.0		13.0	13.0	13.0	4.0
Total Split (%)	12.4%	50.5%		12.4%	50.5%		21.0%	21.0%		12.4%	12.4%	12.4%	4%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag					Lead
Lead-Lag Optimize?													
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	None	None
v/c Ratio	0.01	0.59		0.13	0.25		0.11	0.16		0.13	0.07	0.01	
Control Delay	6.2	18.7		5.9	7.9		43.7	1.3		47.6	46.5	0.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.2		0.9	0.0	0.0	
Total Delay	6.2	18.7		5.9	7.9		43.7	1.5		48.6	46.5	0.0	
Queue Length 50th (ft)	1	393		14	96		10	0		12	6	0	
Queue Length 95th (ft)	5	#650		m11	177		30	0		34	22	0	
Internal Link Dist (ft)		470			130			104		177			
Turn Bay Length (ft)	75			50			200	200		50	50	50	
Base Capacity (vph)	630	1207		439	2542		261	362		134	121	255	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0	
Spillback Cap Reductn	0	4		0	0		0	90		46	0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	0	
Reduced v/c Ratio	0.01	0.60		0.12	0.25		0.06	0.16		0.20	0.07	0.01	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 5 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 95
Control Type: Actuated-Coordinated
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: 32: Milford Drive & SR 303

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (vph)	5	611	26	48	546	20	16	3	35	16	8	3
Future Volume (vph)	5	611	26	48	546	20	16	3	35	16	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	0.95		0.95	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.87		1.00	0.85	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.99		0.95	1.00	1.00
Satd. Flow (prot)	1770	1798		1787	3424		1618	1491		1752	1583	1583
Flt Permitted	0.41	1.00		0.24	1.00		0.95	0.99		0.95	1.00	1.00
Satd. Flow (perm)	765	1798		450	3424		1618	1491		1752	1583	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	6	687	29	54	613	22	18	3	39	18	9	3
RTOR Reduction (vph)	0	1	0	0	1	0	0	41	0	0	0	3
Lane Group Flow (vph)	6	715	0	54	634	0	16	3	0	18	9	0
Confl. Peds. (#/hr)			2	2			1		1	1		1
Heavy Vehicles (%)	2%	5%	3%	1%	5%	2%	6%	3%	2%	3%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Prot	Prot		Prot	Prot	Prot
Protected Phases	5	2		1	6		8	8		4	4	4
Permitted Phases	2			6								
Actuated Green, G (s)	65.2	63.8		74.2	68.3		8.0	8.0		4.9	4.9	4.9
Effective Green, g (s)	65.2	63.8		74.2	68.3		8.0	8.0		4.9	4.9	4.9
Actuated g/C Ratio	0.62	0.61		0.71	0.65		0.08	0.08		0.05	0.05	0.05
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	488	1092		393	2227		123	113		81	73	73
v/s Ratio Prot	0.00	c0.40		c0.01	c0.19		c0.01	0.00		c0.01	0.01	0.00
v/s Ratio Perm	0.01			0.09								
v/c Ratio	0.01	0.65		0.14	0.28		0.13	0.03		0.22	0.12	0.00
Uniform Delay, d1	7.6	13.4		8.3	7.9		45.3	44.9		48.2	48.0	47.7
Progression Factor	0.87	1.07		0.85	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.0	3.1		0.1	0.3		0.5	0.1		1.4	0.8	0.0
Delay (s)	6.6	17.4		7.2	8.2		45.7	45.0		49.6	48.8	47.7
Level of Service	A	B		A	A		D	D		D	D	D
Approach Delay (s)		17.3			8.1			45.2		49.2		
Approach LOS		B			A			D		D		

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

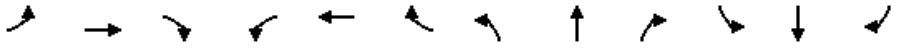
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	67	607	1	1	595	13	0	0	2	24	0	45	
Future Volume (vph)	67	607	1	1	595	13	0	0	2	24	0	45	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	150		0	50		0	0		0	0		75	
Storage Lanes	1		0	1		0	0		1	0		1	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			No			No	
Link Speed (mph)		25			25			30			25		
Link Distance (ft)		490			714			162			245		
Travel Time (s)		13.4			19.5			3.7			6.7		
Confl. Peds. (#/hr)	1					1	1					1	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Heavy Vehicles (%)	5%	7%	0%	0%	6%	31%	0%	0%	50%	0%	0%	4%	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	77	699	0	1	699	0	0	0	2	0	28	52	
Turn Type	pm+pt	NA		pm+pt	NA				custom	Perm	NA	Perm	
Protected Phases	5	2		1	6			4			8		9
Permitted Phases	2			6			4		2	8		8	
Detector Phase	5	2		1	6		4	4	2	8	8	8	
Switch Phase													
Minimum Initial (s)	5.0	20.0		5.0	20.0		8.0	8.0	20.0	8.0	8.0	8.0	2.0
Minimum Split (s)	12.0	35.0		12.0	35.0		25.0	25.0	35.0	25.0	25.0	25.0	4.0
Total Split (s)	12.0	64.0		12.0	64.0		25.0	25.0	64.0	25.0	25.0	25.0	4.0
Total Split (%)	11.4%	61.0%		11.4%	61.0%		23.8%	23.8%	61.0%	23.8%	23.8%	23.8%	4%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	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)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lag				
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes				
Recall Mode	None	C-Min		None	C-Min		None	None	C-Min	None	None	None	None
v/c Ratio	0.16	0.50		0.00	0.55				0.00		0.19	0.34	
Control Delay	5.0	14.4		7.0	12.2				7.0		44.3	48.4	
Queue Delay	0.0	0.6		0.0	0.1				0.0		0.0	0.0	
Total Delay	5.0	15.0		7.0	12.3				7.0		44.3	48.4	
Queue Length 50th (ft)	2	221		0	183				0		18	34	
Queue Length 95th (ft)	m46	596		m1	341				4		41	64	
Internal Link Dist (ft)		410			634			82			165		
Turn Bay Length (ft)	150			50								75	
Base Capacity (vph)	490	1406		561	1277				853		260	274	
Starvation Cap Reductn	0	338		0	62				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	0.16	0.65		0.00	0.58				0.00		0.11	0.19	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 74 (70%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: SR 303 & Library Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	607	1	1	595	13	0	0	2	24	0	45
Future Volume (vph)	67	607	1	1	595	13	0	0	2	24	0	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0				6.0		6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00				1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				1.00		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00				0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00		0.95	1.00
Satd. Flow (prot)	1719	1775		1805	1777				1077		1805	1517
Flt Permitted	0.29	1.00		0.35	1.00				1.00		0.76	1.00
Satd. Flow (perm)	525	1775		659	1777				1077		1439	1517
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	77	698	1	1	684	15	0	0	2	28	0	52
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	77	699	0	1	698	0	0	0	2	0	28	52
Confl. Peds. (#/hr)	1					1	1					1
Heavy Vehicles (%)	5%	7%	0%	0%	6%	31%	0%	0%	50%	0%	0%	4%
Turn Type	pm+pt	NA		pm+pt	NA				custom	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4		2	8		8
Actuated Green, G (s)	79.7	74.4		71.3	70.2				74.4		9.1	9.1
Effective Green, g (s)	79.7	74.4		71.3	70.2				74.4		9.1	9.1
Actuated g/C Ratio	0.76	0.71		0.68	0.67				0.71		0.09	0.09
Clearance Time (s)	6.0	6.0		6.0	6.0				6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0		3.0	3.0
Lane Grp Cap (vph)	458	1257		459	1188				763		124	131
v/s Ratio Prot	c0.01	c0.39		0.00	c0.39							
v/s Ratio Perm	0.12			0.00					0.00		0.02	c0.03
v/c Ratio	0.17	0.56		0.00	0.59				0.00		0.23	0.40
Uniform Delay, d1	5.4	7.4		5.8	9.5				4.5		44.7	45.4
Progression Factor	1.20	1.83		1.43	0.98				1.00		1.00	1.00
Incremental Delay, d2	0.1	1.5		0.0	2.0				0.0		0.9	2.0
Delay (s)	6.6	15.0		8.3	11.3				4.5		45.6	47.3
Level of Service	A	B		A	B				A		D	D
Approach Delay (s)		14.1			11.3			4.5			46.7	
Approach LOS		B			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

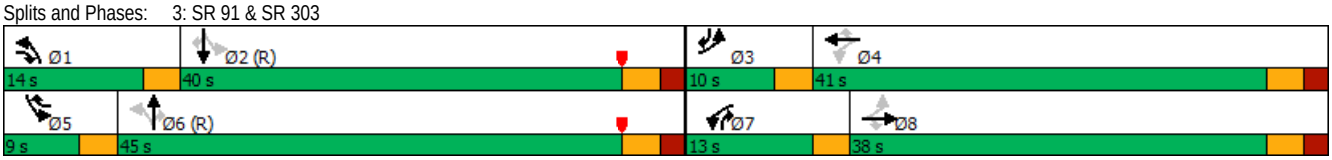
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	369	238	151	345	29	241	407	220	47	475	168
Future Volume (vph)	190	369	238	151	345	29	241	407	220	47	475	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		225	100		100	250		125	200		275
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		714			738			1388			876	
Travel Time (s)		19.5			20.1			37.9			23.9	
Confl. Peds. (#/hr)	7					7	5					5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	2%	3%	1%	2%	0%	2%	2%	2%	0%	2%	9%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	196	380	245	156	356	30	248	420	227	48	490	173
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	1	7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	5.0	15.0	5.0	5.0	15.0	5.0
Minimum Split (s)	9.0	31.0	9.0	9.0	31.0	9.0	9.0	27.0	9.0	9.0	27.0	9.0
Total Split (s)	10.0	38.0	14.0	13.0	41.0	9.0	14.0	45.0	13.0	9.0	40.0	10.0
Total Split (%)	9.5%	36.2%	13.3%	12.4%	39.0%	8.6%	13.3%	42.9%	12.4%	8.6%	38.1%	9.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	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	0.0	0.0
Total Lost Time (s)	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
v/c Ratio	0.67	0.81	0.32	0.56	0.74	0.05	0.63	0.50	0.22	0.11	0.68	0.22
Control Delay	32.1	46.5	3.3	27.9	44.0	0.2	23.0	22.3	3.4	17.0	40.5	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.1	46.5	3.3	27.9	44.0	0.2	23.0	22.3	3.4	17.0	40.5	7.8
Queue Length 50th (ft)	64	195	2	66	219	0	102	224	24	21	324	31
Queue Length 95th (ft)	#122	268	24	102	286	0	#170	229	11	m27	m387	m44
Internal Link Dist (ft)		634			658			1308			796	
Turn Bay Length (ft)	225		225	100		100	250		125	200		275
Base Capacity (vph)	292	585	763	285	638	589	398	847	1042	450	716	796
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.65	0.32	0.55	0.56	0.05	0.62	0.50	0.22	0.11	0.68	0.22

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated
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: SR 91 & SR 303



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	369	238	151	345	29	241	407	220	47	475	168
Future Volume (vph)	190	369	238	151	345	29	241	407	220	47	475	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0
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
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1767	1863	1568	1787	1863	1568	1770	1863	1583	1805	1863	1443
Flt Permitted	0.27	1.00	1.00	0.21	1.00	1.00	0.24	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	509	1863	1568	391	1863	1568	440	1863	1583	840	1863	1443
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	196	380	245	156	356	30	248	420	227	48	490	173
RTOR Reduction (vph)	0	0	116	0	0	21	0	0	104	0	0	91
Lane Group Flow (vph)	196	380	129	156	356	9	248	420	123	48	490	82
Confl. Peds. (#/hr)	7					7	5					5
Heavy Vehicles (%)	2%	2%	3%	1%	2%	0%	2%	2%	2%	0%	2%	9%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3
Permitted Phases	8		8	4		4	6		6	2		2
Actuated Green, G (s)	35.8	26.6	38.7	37.4	27.4	32.7	55.4	47.1	57.1	45.6	40.3	49.5
Effective Green, g (s)	35.8	26.6	38.7	37.4	27.4	32.7	55.4	47.1	57.1	45.6	40.3	49.5
Actuated g/C Ratio	0.34	0.25	0.37	0.36	0.26	0.31	0.53	0.45	0.54	0.43	0.38	0.47
Clearance Time (s)	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	5.0	3.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	283	471	577	272	486	488	385	835	860	413	715	680
v/s Ratio Prot	c0.06	c0.20	0.03	c0.05	0.19	0.00	c0.07	0.23	0.01	0.01	c0.26	0.01
v/s Ratio Perm	0.18		0.06	0.15		0.00	0.27		0.06	0.04		0.05
v/c Ratio	0.69	0.81	0.22	0.57	0.73	0.02	0.64	0.50	0.14	0.12	0.69	0.12
Uniform Delay, d1	26.7	36.8	22.8	25.4	35.5	25.0	16.9	20.6	11.9	17.4	27.0	15.5
Progression Factor	0.96	0.96	0.47	1.00	1.00	1.00	1.11	0.90	1.70	1.23	1.27	2.71
Incremental Delay, d2	5.9	8.1	0.2	2.9	5.6	0.0	3.2	1.9	0.1	0.1	3.3	0.0
Delay (s)	31.4	43.6	11.0	28.3	41.1	25.1	22.0	20.4	20.2	21.6	37.5	42.1
Level of Service	C	D	B	C	D	C	C	C	C	C	D	D
Approach Delay (s)		31.0			36.5			20.8			37.5	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9
Lane Configurations							
Traffic Volume (vph)	607	98	53	499	115	75	
Future Volume (vph)	607	98	53	499	115	75	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Right Turn on Red		Yes				Yes	
Link Speed (mph)	25			25	25		
Link Distance (ft)	675			390	240		
Travel Time (s)	18.4			10.6	6.5		
Confl. Peds. (#/hr)					3		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	
Heavy Vehicles (%)	2%	1%	0%	5%	2%	0%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	734	0	0	575	120	78	
Turn Type	NA		pm+pt	NA	Prot	Perm	
Protected Phases	2		1	2	4		9
Permitted Phases			2			4	
Detector Phase	2		1	2	4	4	
Switch Phase							
Minimum Initial (s)	25.0		9.0	25.0	11.0	11.0	2.0
Minimum Split (s)	31.6		15.6	31.6	23.3	23.3	4.0
Total Split (s)	54.4		15.6	54.4	31.0	31.0	4.0
Total Split (%)	51.8%		14.9%	51.8%	29.5%	29.5%	4%
Yellow Time (s)	3.6		3.6	3.6	3.3	3.3	2.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0	
Total Lost Time (s)	5.6			5.6	5.3	5.3	
Lead/Lag	Lag		Lead	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	C-Min		None	C-Min	None	None	None
v/c Ratio	0.28			0.27	0.54	0.29	
Control Delay	2.7			12.8	51.9	11.9	
Queue Delay	0.0			0.0	0.0	0.0	
Total Delay	2.7			12.8	51.9	11.9	
Queue Length 50th (ft)	21			78	77	0	
Queue Length 95th (ft)	1			248	130	41	
Internal Link Dist (ft)	595			310	160		
Turn Bay Length (ft)							
Base Capacity (vph)	2629			2130	433	454	
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	0.28			0.27	0.28	0.17	

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 25 (24%), Referenced to phase 2:EBWB and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	

Splits and Phases: 12: Shopping Center & SR 303

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	607	98	53	499	115	75
Future Volume (vph)	607	98	53	499	115	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6			5.6	5.3	5.3
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	1.00			1.00	1.00	1.00
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3470			3437	1770	1615
Flt Permitted	1.00			0.82	0.95	1.00
Satd. Flow (perm)	3470			2819	1770	1615
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	632	102	55	520	120	78
RTOR Reduction (vph)	6	0	0	0	0	68
Lane Group Flow (vph)	728	0	0	575	120	10
Confl. Peds. (#/hr)					3	
Heavy Vehicles (%)	2%	1%	0%	5%	2%	0%
Turn Type	NA		pm+pt	NA	Prot	Perm
Protected Phases	2		1	2	4	
Permitted Phases			2			4
Actuated Green, G (s)	77.8			77.8	13.2	13.2
Effective Green, g (s)	77.8			77.8	13.2	13.2
Actuated g/C Ratio	0.74			0.74	0.13	0.13
Clearance Time (s)	5.6			5.6	5.3	5.3
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2571			2088	222	203
v/s Ratio Prot	c0.21				c0.07	
v/s Ratio Perm				0.20		0.01
v/c Ratio	0.28			0.28	0.54	0.05
Uniform Delay, d1	4.5			4.4	43.1	40.4
Progression Factor	0.58			2.75	1.00	1.00
Incremental Delay, d2	0.2			0.1	2.7	0.1
Delay (s)	2.8			12.2	45.7	40.5
Level of Service	A			B	D	D
Approach Delay (s)	2.8			12.2	43.7	
Approach LOS	A			B	D	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	18.5
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

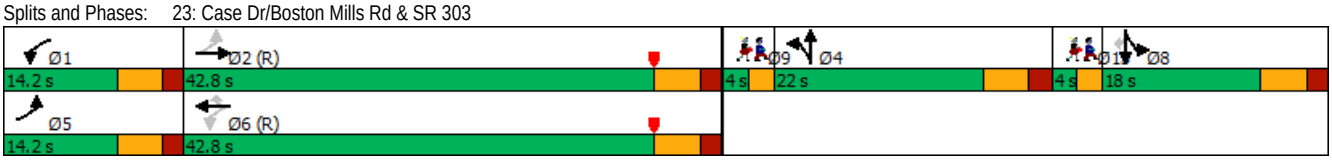
c Critical Lane Group

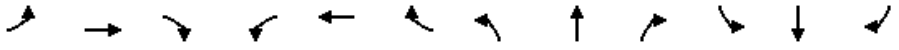
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9	Ø13
Lane Configurations														
Traffic Volume (vph)	5	532	15	22	552	98	16	32	10	217	65	18		
Future Volume (vph)	5	532	15	22	552	98	16	32	10	217	65	18		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	150		0	75		0	0		0	0		200		
Storage Lanes	1		0	1		1	0		0	0		1		
Taper Length (ft)	25			25			25			25				
Right Turn on Red			Yes			Yes			Yes			Yes		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		738			675			259			356			
Travel Time (s)		20.1			18.4			7.1			9.7			
Confl. Peds. (#/hr)			3	3			2		1	1		2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	10%	6%	10%	2%	6%	3%	4%	1%	4%	3%	1%	14%		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	5	594	0	24	600	107	0	63	0	0	307	20		
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	Perm		
Protected Phases	5	2		1	6		4	4		8	8		9	13
Permitted Phases	2			6		6						8		
Detector Phase	5	2		1	6	6	4	4		8	8	8		
Switch Phase														
Minimum Initial (s)	8.0	30.0		8.0	30.0	30.0	5.0	5.0		5.0	5.0	5.0	2.0	2.0
Minimum Split (s)	14.2	36.5		14.2	36.5	36.5	19.4	19.4		14.4	14.4	14.4	4.0	4.0
Total Split (s)	14.2	42.8		14.2	42.8	42.8	22.0	22.0		18.0	18.0	18.0	4.0	4.0
Total Split (%)	13.5%	40.8%		13.5%	40.8%	40.8%	21.0%	21.0%		17.1%	17.1%	17.1%	4%	4%
Yellow Time (s)	3.6	3.6		3.6	3.6	3.6	3.6	3.6		3.6	3.6	3.6	2.0	2.0
All-Red Time (s)	1.6	1.9		1.6	1.9	1.9	1.8	1.8		1.8	1.8	1.8	0.0	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)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4		
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag		Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None	None	None
v/c Ratio	0.02	0.77		0.11	0.73	0.13		0.41			0.62	0.04		
Control Delay	14.0	34.8		8.0	28.8	1.3		47.1			43.3	0.2		
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0		
Total Delay	14.0	34.8		8.0	28.8	1.3		47.1			43.3	0.2		
Queue Length 50th (ft)	2	294		7	415	6		35			181	0		
Queue Length 95th (ft)	8	#593		6	#618	5		75			#437	0		
Internal Link Dist (ft)		658			595			179			276			
Turn Bay Length (ft)	150			75								200		
Base Capacity (vph)	239	775		240	824	816		289			492	507		
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	0.02	0.77		0.10	0.73	0.13		0.22			0.62	0.04		

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 104 (99%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 105
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 23: Case Dr/Boston Mills Rd & SR 303





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	532	15	22	552	98	16	32	10	217	65	18
Future Volume (vph)	5	532	15	22	552	98	16	32	10	217	65	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.96	1.00
Satd. Flow (prot)	1641	1782		1770	1792	1568		1784			1784	1372
Flt Permitted	0.15	1.00		0.12	1.00	1.00		0.99			0.96	1.00
Satd. Flow (perm)	254	1782		225	1792	1568		1784			1784	1372
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	578	16	24	600	107	17	35	11	236	71	20
RTOR Reduction (vph)	0	1	0	0	0	66	0	8	0	0	0	14
Lane Group Flow (vph)	5	593	0	24	600	41	0	55	0	0	307	6
Confl. Peds. (#/hr)			3	3			2		1	1		2
Heavy Vehicles (%)	10%	6%	10%	2%	6%	3%	4%	1%	4%	3%	1%	14%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						8
Actuated Green, G (s)	39.9	38.3		43.1	39.9	39.9		7.5			29.0	29.0
Effective Green, g (s)	39.9	38.3		43.1	39.9	39.9		7.5			29.0	29.0
Actuated g/C Ratio	0.38	0.36		0.41	0.38	0.38		0.07			0.28	0.28
Clearance Time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	117	650		139	680	595		127			492	378
v/s Ratio Prot	0.00	0.33		c0.01	c0.33			c0.03			c0.17	
v/s Ratio Perm	0.02			0.07		0.03						0.00
v/c Ratio	0.04	0.91		0.17	0.88	0.07		0.43			0.62	0.01
Uniform Delay, d1	23.3	31.8		22.6	30.4	20.7		46.7			33.2	27.6
Progression Factor	1.00	1.00		0.51	0.92	3.16		1.00			1.00	1.00
Incremental Delay, d2	0.2	19.4		0.6	15.2	0.2		2.3			2.5	0.0
Delay (s)	23.5	51.2		12.1	43.2	65.8		49.0			35.7	27.6
Level of Service	C	D		B	D	E		D			D	C
Approach Delay (s)		50.9			45.5			49.0			35.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2	Ø9
Lane Configurations													
Traffic Volume (vph)	36	723	20	52	606	72	13	33	44	43	34	25	
Future Volume (vph)	36	723	20	52	606	72	13	33	44	43	34	25	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	50		0		200	0	50	50		
Storage Lanes	1		0	1		0		1	0	1	1		
Taper Length (ft)	25			25				25		25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		25			25			25		30			
Link Distance (ft)		550			210			184		257			
Travel Time (s)		15.0			5.7			5.0		5.8			
Confl. Peds. (#/hr)			12	12			4		9	9		4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Heavy Vehicles (%)	2%	5%	3%	1%	5%	2%	6%	3%	2%	3%	2%	2%	
Shared Lane Traffic (%)							10%						
Lane Group Flow (vph)	38	790	0	55	722	0	13	83	0	46	36	27	
Turn Type	pm+pt	NA		pm+pt	NA		Prot	Prot		Prot	Prot	Prot	
Protected Phases	5	2		1	6		8	8		4	4	4	9
Permitted Phases	2			6									
Detector Phase	5	2		1	6		8	8		4	4	4	
Switch Phase													
Minimum Initial (s)	7.0	25.0		7.0	25.0		8.0	8.0		8.0	8.0	8.0	2.0
Minimum Split (s)	13.0	39.0		13.0	39.0		22.0	22.0		13.0	13.0	13.0	4.0
Total Split (s)	13.0	53.0		13.0	53.0		22.0	22.0		13.0	13.0	13.0	4.0
Total Split (%)	12.4%	50.5%		12.4%	50.5%		21.0%	21.0%		12.4%	12.4%	12.4%	4%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag					Lead
Lead-Lag Optimize?													
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	None	None
v/c Ratio	0.07	0.68		0.16	0.32		0.09	0.31		0.33	0.28	0.10	
Control Delay	4.9	17.2		9.1	12.8		43.1	3.4		51.9	51.1	0.8	
Queue Delay	0.0	0.1		0.0	0.0		0.0	0.0		0.0	0.0	0.0	
Total Delay	4.9	17.3		9.1	12.8		43.1	3.4		51.9	51.1	0.8	
Queue Length 50th (ft)	4	252		7	110		8	0		30	23	0	
Queue Length 95th (ft)	12	#749		m39	217		26	5		66	56	0	
Internal Link Dist (ft)		470			130			104		177			
Turn Bay Length (ft)	75			50			200	200		50	50	50	
Base Capacity (vph)	536	1158		362	2266		261	369		141	128	261	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0	
Spillback Cap Reductn	0	24		0	0		0	1		0	0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	0	
Reduced v/c Ratio	0.07	0.70		0.15	0.32		0.05	0.23		0.33	0.28	0.10	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 36 (34%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 95
Control Type: Actuated-Coordinated
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: 32: Milford Drive & SR 303

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (vph)	36	723	20	52	606	72	13	33	44	43	34	25
Future Volume (vph)	36	723	20	52	606	72	13	33	44	43	34	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	0.95		0.95	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.97		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	0.98		1.00	0.92		1.00	0.85	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (prot)	1770	1801		1787	3393		1618	1534		1752	1583	1583
Flt Permitted	0.35	1.00		0.19	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (perm)	650	1801		361	3393		1618	1534		1752	1583	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	38	769	21	55	645	77	14	35	47	46	36	27
RTOR Reduction (vph)	0	1	0	0	6	0	0	77	0	0	0	25
Lane Group Flow (vph)	38	789	0	55	716	0	13	6	0	46	36	2
Confl. Peds. (#/hr)			12	12			4		9	9		4
Heavy Vehicles (%)	2%	5%	3%	1%	5%	2%	6%	3%	2%	3%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		Prot	Prot		Prot	Prot	Prot
Protected Phases	5	2		1	6		8	8		4	4	4
Permitted Phases	2			6								
Actuated Green, G (s)	66.2	61.9		69.2	63.4		8.0	8.0		6.9	6.9	6.9
Effective Green, g (s)	66.2	61.9		69.2	63.4		8.0	8.0		6.9	6.9	6.9
Actuated g/C Ratio	0.63	0.59		0.66	0.60		0.08	0.08		0.07	0.07	0.07
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	455	1061		316	2048		123	116		115	104	104
v/s Ratio Prot	0.00	c0.44		c0.01	0.21		c0.01	0.00		c0.03	0.02	0.00
v/s Ratio Perm	0.05			0.10								
v/c Ratio	0.08	0.74		0.17	0.35		0.11	0.05		0.40	0.35	0.02
Uniform Delay, d1	7.4	15.8		11.0	10.4		45.2	45.0		47.1	46.9	45.9
Progression Factor	0.66	0.72		1.19	1.13		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	4.7		0.2	0.4		0.4	0.2		2.3	2.0	0.1
Delay (s)	5.0	16.0		13.3	12.1		45.5	45.2		49.3	48.9	45.9
Level of Service	A	B		B	B		D	D		D	D	D
Approach Delay (s)		15.5			12.2			45.2		48.4		
Approach LOS		B			B			D		D		

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

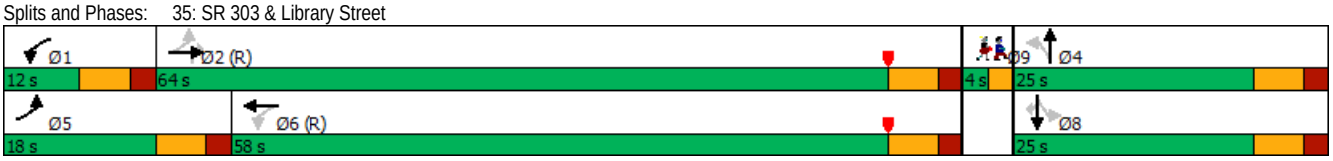
c Critical Lane Group

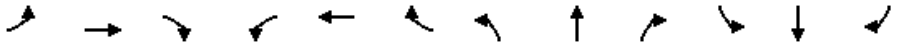
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	119	736	8	10	597	40	10	0	11	94	3	163	
Future Volume (vph)	119	736	8	10	597	40	10	0	11	94	3	163	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	150		0	50		0	0		0	0		75	
Storage Lanes	1		0	1		0	0		1	0		1	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			No			No	
Link Speed (mph)		25			25			30			25		
Link Distance (ft)		490			714			162			245		
Travel Time (s)		13.4			19.5			3.7			6.7		
Confl. Peds. (#/hr)	1					1	1		8	8		1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Heavy Vehicles (%)	0%	2%	0%	0%	2%	3%	0%	0%	0%	2%	0%	1%	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	128	800	0	11	685	0	0	11	12	0	104	175	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	custom	Perm	NA	Perm	
Protected Phases	5	2		1	6			4			8		9
Permitted Phases	2			6			4		2	8		8	
Detector Phase	5	2		1	6		4	4	2	8	8	8	
Switch Phase													
Minimum Initial (s)	5.0	20.0		5.0	20.0		8.0	8.0	20.0	8.0	8.0	8.0	2.0
Minimum Split (s)	12.0	35.0		12.0	35.0		25.0	25.0	35.0	25.0	25.0	25.0	4.0
Total Split (s)	18.0	64.0		12.0	58.0		25.0	25.0	64.0	25.0	25.0	25.0	4.0
Total Split (%)	17.1%	61.0%		11.4%	55.2%		23.8%	23.8%	61.0%	23.8%	23.8%	23.8%	4%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	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)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lag				
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes				
Recall Mode	None	C-Min		None	C-Min		None	None	C-Min	None	None	None	None
v/c Ratio	0.30	0.61		0.03	0.63			0.06	0.01		0.52	0.74	
Control Delay	3.0	4.7		6.1	20.3			36.7	7.7		49.6	60.5	
Queue Delay	0.0	0.2		0.0	0.2			0.0	0.0		0.0	0.0	
Total Delay	3.0	4.8		6.1	20.5			36.7	7.7		49.6	60.5	
Queue Length 50th (ft)	6	42		3	368			6	2		64	112	
Queue Length 95th (ft)	m12	75		m5	325			22	12		117	183	
Internal Link Dist (ft)		410			634			82			165		
Turn Bay Length (ft)	150			50								75	
Base Capacity (vph)	484	1306		395	1095			237	1095		240	284	
Starvation Cap Reductn	0	83		0	66			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	0.26	0.65		0.03	0.67			0.05	0.01		0.43	0.62	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 61 (58%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: SR 303 & Library Street





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	736	8	10	597	40	10	0	11	94	3	163
Future Volume (vph)	119	736	8	10	597	40	10	0	11	94	3	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.97		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		0.98	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1805	1860		1805	1842			1800	1559		1738	1562
Flt Permitted	0.24	1.00		0.26	1.00			0.69	1.00		0.72	1.00
Satd. Flow (perm)	455	1860		493	1842			1307	1559		1320	1562
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	128	791	9	11	642	43	11	0	12	101	3	175
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	128	800	0	11	683	0	0	11	12	0	104	175
Confl. Peds. (#/hr)	1					1	1		8	8		1
Heavy Vehicles (%)	0%	2%	0%	0%	2%	3%	0%	0%	0%	2%	0%	1%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	custom	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4		2	8		8
Actuated Green, G (s)	74.6	67.4		61.9	60.7			16.0	67.4		16.0	16.0
Effective Green, g (s)	74.6	67.4		61.9	60.7			16.0	67.4		16.0	16.0
Actuated g/C Ratio	0.71	0.64		0.59	0.58			0.15	0.64		0.15	0.15
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	424	1193		305	1064			199	1000		201	238
v/s Ratio Prot	c0.02	c0.43		0.00	0.37							
v/s Ratio Perm	0.19			0.02				0.01	0.01		0.08	c0.11
v/c Ratio	0.30	0.67		0.04	0.64			0.06	0.01		0.52	0.74
Uniform Delay, d1	9.0	11.8		10.4	14.9			38.0	6.8		40.9	42.5
Progression Factor	0.30	0.27		1.06	1.15			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	2.4		0.0	2.6			0.1	0.0		2.2	11.2
Delay (s)	3.0	5.7		11.0	19.7			38.2	6.8		43.2	53.7
Level of Service	A	A		B	B			D	A		D	D
Approach Delay (s)		5.3			19.5			21.8			49.8	
Approach LOS		A			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

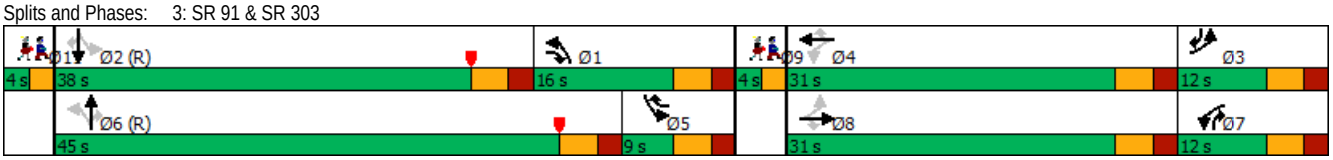
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9	Ø11
Lane Configurations														
Traffic Volume (vph)	129	186	96	122	233	38	206	459	127	29	325	174		
Future Volume (vph)	129	186	96	122	233	38	206	459	127	29	325	174		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	225		225	100		100	250		125	200		275		
Storage Lanes	1		1	1		1	1		1	1		1		
Taper Length (ft)	25			25			25			25				
Right Turn on Red			No			No			No			No		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		714			738			1388			876			
Travel Time (s)		19.5			20.1			37.9			23.9			
Confl. Peds. (#/hr)			3	3			1		1	1		1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	12%	5%	4%	4%	9%	3%	3%	8%	4%	14%	7%	9%		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	140	202	104	133	253	41	224	499	138	32	353	189		
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov		
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3	9	11
Permitted Phases	8		8	4		4	6		6	2		2		
Detector Phase	3	8	1	7	4	5	1	6	7	5	2	3		
Switch Phase														
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	4.0	5.0	15.0	5.0	4.0	15.0	5.0	2.0	2.0
Minimum Split (s)	10.0	31.0	10.0	10.0	31.0	9.0	10.0	27.0	10.0	9.0	27.0	10.0	4.0	4.0
Total Split (s)	12.0	31.0	16.0	12.0	31.0	9.0	16.0	45.0	12.0	9.0	38.0	12.0	4.0	4.0
Total Split (%)	11.4%	29.5%	15.2%	11.4%	29.5%	8.6%	15.2%	42.9%	11.4%	8.6%	36.2%	11.4%	4%	4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	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	0.0	0.0		
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		
Lead-Lag Optimize?														
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None	None	None
v/c Ratio	0.58	0.68	0.24	0.36	0.76	0.09	0.43	0.61	0.15	0.13	0.51	0.27		
Control Delay	31.8	43.4	21.7	30.0	54.4	24.5	22.4	22.5	4.6	9.1	25.8	15.7		
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	31.8	43.4	21.7	30.0	54.7	24.5	22.4	22.5	4.6	9.1	25.8	15.7		
Queue Length 50th (ft)	40	103	24	61	162	19	87	304	14	3	168	59		
Queue Length 95th (ft)	#68	144	77	107	234	41	162	441	44	m9	m246	m74		
Internal Link Dist (ft)		634			658			1308			796			
Turn Bay Length (ft)	225		225	100		100	250		125	200		275		
Base Capacity (vph)	240	448	440	368	431	434	534	822	902	248	694	709		
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	18	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.58	0.45	0.24	0.36	0.61	0.09	0.42	0.61	0.15	0.13	0.51	0.27		

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
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: SR 91 & SR 303



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	186	96	122	233	38	206	459	127	29	325	174
Future Volume (vph)	129	186	96	122	233	38	206	459	127	29	325	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
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
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1612	1810	1530	1733	1743	1568	1752	1759	1526	1583	1776	1456
Flt Permitted	0.29	1.00	1.00	0.44	1.00	1.00	0.40	1.00	1.00	0.24	1.00	1.00
Satd. Flow (perm)	500	1810	1530	803	1743	1568	730	1759	1526	407	1776	1456
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	202	104	133	253	41	224	499	138	32	353	189
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	140	202	104	133	253	41	224	499	138	32	353	189
Confl. Peds. (#/hr)			3	3			1		1	1		1
Heavy Vehicles (%)	12%	5%	4%	4%	9%	3%	3%	8%	4%	14%	7%	9%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3
Permitted Phases	8		8	4		4	6		6	2		2
Actuated Green, G (s)	27.7	17.4	30.5	33.1	20.1	25.0	54.8	44.9	57.9	41.6	36.7	47.0
Effective Green, g (s)	27.7	17.4	30.5	33.1	20.1	25.0	54.8	44.9	57.9	41.6	36.7	47.0
Actuated g/C Ratio	0.26	0.17	0.29	0.32	0.19	0.24	0.52	0.43	0.55	0.40	0.35	0.45
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	240	299	444	368	333	373	508	752	841	216	620	651
v/s Ratio Prot	c0.06	0.11	0.03	c0.04	c0.15	0.01	c0.05	c0.28	0.02	0.01	0.20	0.03
v/s Ratio Perm	0.10		0.04	0.07		0.02	0.17		0.07	0.05		0.10
v/c Ratio	0.58	0.68	0.23	0.36	0.76	0.11	0.44	0.66	0.16	0.15	0.57	0.29
Uniform Delay, d1	39.4	41.1	28.4	32.7	40.2	31.3	23.4	24.0	11.6	32.9	27.7	18.4
Progression Factor	0.68	0.82	0.90	1.00	1.00	1.00	1.06	0.81	0.45	0.52	0.86	0.94
Incremental Delay, d2	3.2	5.3	0.2	0.6	9.6	0.1	0.5	4.1	0.1	0.2	2.9	0.2
Delay (s)	29.9	39.0	25.7	33.3	49.7	31.4	25.5	23.5	5.3	17.2	26.7	17.5
Level of Service	C	D	C	C	D	C	C	C	A	B	C	B
Approach Delay (s)		33.0			42.9			21.1			23.2	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

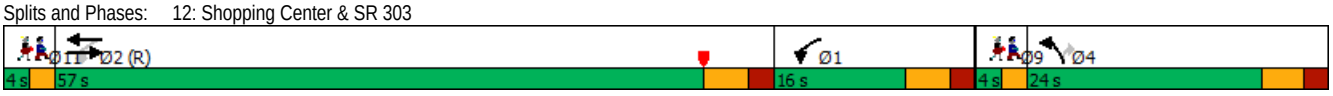
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9	Ø11
Lane Configurations								
Traffic Volume (vph)	379	72	39	458	51	47		
Future Volume (vph)	379	72	39	458	51	47		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Storage Length (ft)		200	350		0	0		
Storage Lanes		1	1		1	1		
Taper Length (ft)			25		25			
Right Turn on Red		No				No		
Link Speed (mph)	25			25	25			
Link Distance (ft)	675			390	240			
Travel Time (s)	18.4			10.6	6.5			
Confl. Peds. (#/hr)					1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	8%	1%	5%	5%	0%	6%		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	412	78	42	498	55	51		
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm		
Protected Phases	2		1	2	4		9	11
Permitted Phases		2	2			4		
Detector Phase	2	2	1	2	4	4		
Switch Phase								
Minimum Initial (s)	25.0	25.0	9.0	25.0	11.0	11.0	2.0	2.0
Minimum Split (s)	31.6	31.6	15.6	31.6	23.3	23.3	4.0	4.0
Total Split (s)	57.0	57.0	16.0	57.0	24.0	24.0	4.0	4.0
Total Split (%)	54.3%	54.3%	15.2%	54.3%	22.9%	22.9%	4%	4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.3	3.3	2.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.6	5.6	5.6	5.6	5.3	5.3		
Lead/Lag	Lag	Lag		Lag				Lead
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	None	C-Min	None	None	None	None
v/c Ratio	0.32	0.07	0.06	0.38	0.26	0.29		
Control Delay	3.6	2.8	5.9	15.2	44.8	46.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	3.6	2.8	5.9	15.2	44.8	46.1		
Queue Length 50th (ft)	41	8	3	265	35	32		
Queue Length 95th (ft)	83	m17	m26	335	69	66		
Internal Link Dist (ft)	595			310	160			
Turn Bay Length (ft)		200	350					
Base Capacity (vph)	1273	1157	779	1310	321	271		
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	0.32	0.07	0.05	0.38	0.17	0.19		

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 21 (20%), Referenced to phase 2:EBWB, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	

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

Splits and Phases: 12: Shopping Center & SR 303



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	379	72	39	458	51	47
Future Volume (vph)	379	72	39	458	51	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6	5.6	5.6	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1759	1599	1719	1810	1805	1524
Flt Permitted	1.00	1.00	0.49	1.00	0.95	1.00
Satd. Flow (perm)	1759	1599	878	1810	1805	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	412	78	42	498	55	51
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	412	78	42	498	55	51
Confl. Peds. (#/hr)					1	
Heavy Vehicles (%)	8%	1%	5%	5%	0%	6%
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	2	4	
Permitted Phases		2	2			4
Actuated Green, G (s)	70.0	70.0	75.4	70.0	10.0	10.0
Effective Green, g (s)	70.0	70.0	75.4	70.0	10.0	10.0
Actuated g/C Ratio	0.67	0.67	0.72	0.67	0.10	0.10
Clearance Time (s)	5.6	5.6	5.6	5.6	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1172	1066	673	1206	171	145
v/s Ratio Prot	0.23		c0.00	c0.28	0.03	
v/s Ratio Perm		0.05	0.04			c0.03
v/c Ratio	0.35	0.07	0.06	0.41	0.32	0.35
Uniform Delay, d1	7.6	6.1	5.9	8.0	44.3	44.5
Progression Factor	0.33	0.33	1.40	1.54	1.00	1.00
Incremental Delay, d2	0.8	0.1	0.0	1.0	1.1	1.5
Delay (s)	3.3	2.2	8.3	13.3	45.4	45.9
Level of Service	A	A	A	B	D	D
Approach Delay (s)	3.1			13.0	45.7	
Approach LOS	A			B	D	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

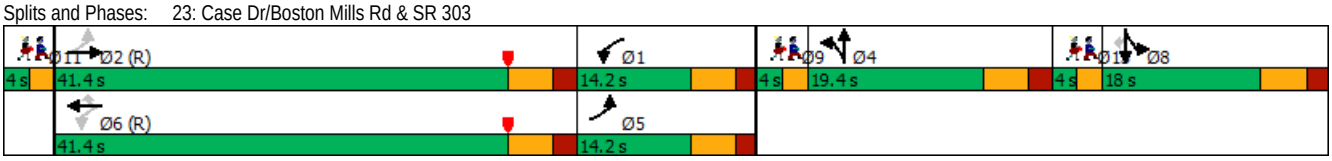
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9	Ø11
Lane Configurations														
Traffic Volume (vph)	12	419	12	3	372	139	10	19	5	105	26	4		
Future Volume (vph)	12	419	12	3	372	139	10	19	5	105	26	4		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	150		0	75		150	0		0	0		200		
Storage Lanes	1		0	1		1	0		0	0		1		
Taper Length (ft)	25			25			25			25				
Right Turn on Red			No			No			No			No		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		738			675			259			356			
Travel Time (s)		20.1			18.4			7.1			9.7			
Confl. Peds. (#/hr)			3	3										
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94		
Heavy Vehicles (%)	10%	6%	10%	2%	6%	3%	4%	1%	4%	3%	1%	14%		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	13	459	0	3	396	148	0	36	0	0	140	4		
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	Perm		
Protected Phases	5	2		1	6		4	4		8	8		9	11
Permitted Phases	2			6		6						8		
Detector Phase	5	2		1	6	6	4	4		8	8	8		
Switch Phase														
Minimum Initial (s)	8.0	30.0		8.0	30.0	30.0	5.0	5.0		5.0	5.0	5.0	2.0	2.0
Minimum Split (s)	14.2	36.5		14.2	36.5	36.5	19.4	19.4		14.4	14.4	14.4	4.0	4.0
Total Split (s)	14.2	41.4		14.2	41.4	41.4	19.4	19.4		18.0	18.0	18.0	4.0	4.0
Total Split (%)	13.5%	39.4%		13.5%	39.4%	39.4%	18.5%	18.5%		17.1%	17.1%	17.1%	4%	4%
Yellow Time (s)	3.6	3.6		3.6	3.6	3.6	3.6	3.6		3.6	3.6	3.6	2.0	2.0
All-Red Time (s)	1.6	1.9		1.6	1.9	1.9	1.8	1.8		1.8	1.8	1.8	0.0	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)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4		
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lag	Lag		Lag	Lag	Lag	Lead	
Lead-Lag Optimize?														
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None	None	None
v/c Ratio	0.02	0.40		0.00	0.34	0.15		0.28			0.61	0.02		
Control Delay	8.6	14.6		7.7	9.8	9.5		50.8			53.9	37.5		
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0		
Total Delay	8.6	14.6		7.7	9.8	9.5		50.8			53.9	37.5		
Queue Length 50th (ft)	2	136		0	39	15		23			90	2		
Queue Length 95th (ft)	14	373		m2	209	90		55			147	12		
Internal Link Dist (ft)		658			595			179			276			
Turn Bay Length (ft)	150			75		150						200		
Base Capacity (vph)	662	1152		653	1159	1014		239			247	197		
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	0.02	0.40		0.00	0.34	0.15		0.15			0.57	0.02		

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

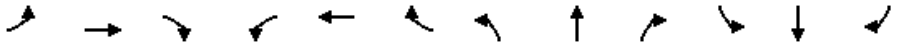
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Case Dr/Boston Mills Rd & SR 303



Lane Group	Ø13
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	13
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	2.0
Minimum Split (s)	4.0
Total Split (s)	4.0
Total Split (%)	4%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Recall Mode	None
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	419	12	3	372	139	10	19	5	105	26	4
Future Volume (vph)	12	419	12	3	372	139	10	19	5	105	26	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98			0.96	1.00
Satd. Flow (prot)	1641	1782		1768	1792	1568		1794			1781	1417
Flt Permitted	0.47	1.00		0.42	1.00	1.00		0.98			0.96	1.00
Satd. Flow (perm)	803	1782		775	1792	1568		1794			1781	1417
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	13	446	13	3	396	148	11	20	5	112	28	4
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	13	459	0	3	396	148	0	36	0	0	140	4
Confl. Peds. (#/hr)			3	3								
Heavy Vehicles (%)	10%	6%	10%	2%	6%	3%	4%	1%	4%	3%	1%	14%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						8
Actuated Green, G (s)	61.6	60.0		61.6	60.0	60.0		5.2			13.6	13.6
Effective Green, g (s)	61.6	60.0		61.6	60.0	60.0		5.2			13.6	13.6
Actuated g/C Ratio	0.59	0.57		0.59	0.57	0.57		0.05			0.13	0.13
Clearance Time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	483	1018		469	1024	896		88			230	183
v/s Ratio Prot	c0.00	c0.26		0.00	0.22			c0.02			c0.08	
v/s Ratio Perm	0.02			0.00		0.09						0.00
v/c Ratio	0.03	0.45		0.01	0.39	0.17		0.41			0.61	0.02
Uniform Delay, d1	12.4	13.0		13.6	12.4	10.6		48.4			43.2	39.9
Progression Factor	1.00	1.00		0.82	0.69	0.77		1.00			1.00	1.00
Incremental Delay, d2	0.0	1.4		0.0	1.0	0.4		3.1			4.5	0.0
Delay (s)	12.4	14.4		11.1	9.6	8.6		51.5			47.7	39.9
Level of Service	B	B		B	A	A		D			D	D
Approach Delay (s)		14.4			9.4			51.5			47.5	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	27.5
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

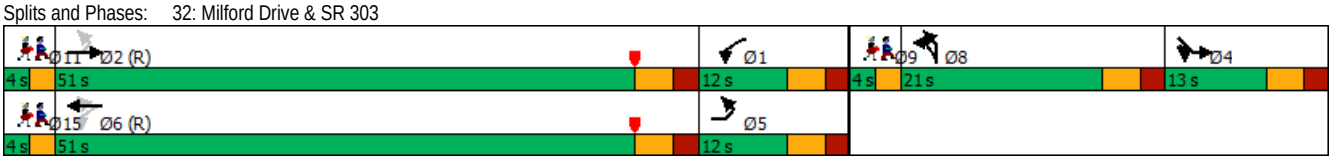
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2	Ø9	Ø11
Lane Configurations														
Traffic Volume (vph)	5	611	26	48	546	20	16	3	35	16	8	3		
Future Volume (vph)	5	611	26	48	546	20	16	3	35	16	8	3		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	75		0	50		0		200	0	50	50			
Storage Lanes	1		0	1		1		1	0	1	1			
Taper Length (ft)	25			25				25		25				
Right Turn on Red			No			No			No			No		
Link Speed (mph)		25			25			25		30				
Link Distance (ft)		550			210			184		257				
Travel Time (s)		15.0			5.7			5.0		5.8				
Confl. Peds. (#/hr)			2	2			1		1	1		1		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89		
Heavy Vehicles (%)	2%	5%	3%	1%	5%	2%	6%	3%	2%	3%	2%	2%		
Shared Lane Traffic (%)							10%							
Lane Group Flow (vph)	6	716	0	54	613	22	16	44	0	18	9	3		
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	Prot		Prot	Prot	Prot		
Protected Phases	5	2		1	6		8	8		4	4	4	9	11
Permitted Phases	2			6		6								
Detector Phase	5	2		1	6	6	8	8		4	4	4		
Switch Phase														
Minimum Initial (s)	7.0	25.0		7.0	25.0	25.0	8.0	8.0		8.0	8.0	8.0	2.0	2.0
Minimum Split (s)	12.0	39.0		12.0	39.0	39.0	21.0	21.0		13.0	13.0	13.0	4.0	4.0
Total Split (s)	12.0	51.0		12.0	51.0	51.0	21.0	21.0		13.0	13.0	13.0	4.0	4.0
Total Split (%)	11.4%	48.6%		11.4%	48.6%	48.6%	20.0%	20.0%		12.4%	12.4%	12.4%	4%	4%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	0.0	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)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		
Lead/Lag		Lag			Lag	Lag	Lag	Lag					Lead	Lead
Lead-Lag Optimize?							Yes	Yes					Yes	
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None	None	None
v/c Ratio	0.01	0.60		0.13	0.46	0.02	0.10	0.31		0.14	0.07	0.03		
Control Delay	6.2	16.6		12.6	13.3	10.8	42.9	48.8		47.9	46.8	45.7		
Queue Delay	0.0	0.0		0.0	0.1	0.0	0.0	0.0		0.0	0.0	0.0		
Total Delay	6.2	16.7		12.6	13.4	10.8	42.9	48.8		47.9	46.8	45.7		
Queue Length 50th (ft)	1	385		10	152	4	10	29		12	6	2		
Queue Length 95th (ft)	m4	#652		m53	539	m22	30	62		35	22	12		
Internal Link Dist (ft)		470			130			104		177				
Turn Bay Length (ft)	75			50			200	200		50	50	50		
Base Capacity (vph)	514	1190		416	1336	1169	246	227		133	120	120		
Starvation Cap Reductn	0	0		0	72	0	0	0		0	0	0		
Spillback Cap Reductn	0	10		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	0.01	0.61		0.13	0.48	0.02	0.07	0.19		0.14	0.07	0.03		

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 28 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 95
Control Type: Actuated-Coordinated
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: 32: Milford Drive & SR 303



Lane Group	Ø15
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	15
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	2.0
Minimum Split (s)	4.0
Total Split (s)	4.0
Total Split (%)	4%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Recall Mode	None
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (vph)	5	611	26	48	546	20	16	3	35	16	8	3
Future Volume (vph)	5	611	26	48	546	20	16	3	35	16	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	0.95	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	0.98		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.87		1.00	0.85	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.99		0.95	1.00	1.00
Satd. Flow (prot)	1770	1798		1787	1810	1583	1618	1491		1752	1583	1583
Flt Permitted	0.35	1.00		0.23	1.00	1.00	0.95	0.99		0.95	1.00	1.00
Satd. Flow (perm)	647	1798		441	1810	1583	1618	1491		1752	1583	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	6	687	29	54	613	22	18	3	39	18	9	3
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	6	716	0	54	613	22	16	44	0	18	9	3
Confl. Peds. (#/hr)			2	2			1		1	1		1
Heavy Vehicles (%)	2%	5%	3%	1%	5%	2%	6%	3%	2%	3%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	Prot		Prot	Prot	Prot
Protected Phases	5	2		1	6		8	8		4	4	4
Permitted Phases	2			6		6						
Actuated Green, G (s)	61.3	59.9		74.3	67.9	67.9	8.5	8.5		4.8	4.8	4.8
Effective Green, g (s)	61.3	59.9		74.3	67.9	67.9	8.5	8.5		4.8	4.8	4.8
Actuated g/C Ratio	0.58	0.57		0.71	0.65	0.65	0.08	0.08		0.05	0.05	0.05
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	392	1025		401	1170	1023	130	120		80	72	72
v/s Ratio Prot	0.00	c0.40		c0.01	c0.34		0.01	c0.03		c0.01	0.01	0.00
v/s Ratio Perm	0.01			0.09		0.01						
v/c Ratio	0.02	0.70		0.13	0.52	0.02	0.12	0.37		0.23	0.12	0.04
Uniform Delay, d1	14.8	16.1		17.2	9.9	6.6	44.8	45.7		48.3	48.1	47.9
Progression Factor	0.60	0.84		1.54	1.19	1.15	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.0	3.9		0.1	1.5	0.0	0.4	1.9		1.4	0.8	0.2
Delay (s)	8.8	17.5		26.7	13.2	7.7	45.2	47.6		49.7	48.9	48.1
Level of Service	A	B		C	B	A	D	D		D	D	D
Approach Delay (s)		17.4			14.1			47.0		49.3		
Approach LOS		B			B			D		D		

Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

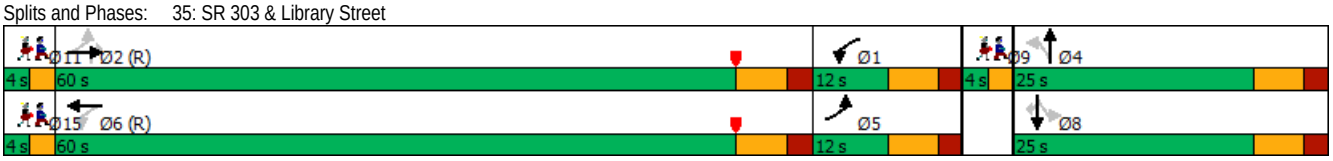
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9	Ø11
Lane Configurations														
Traffic Volume (vph)	67	607	1	1	595	13	0	0	2	24	0	45		
Future Volume (vph)	67	607	1	1	595	13	0	0	2	24	0	45		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	150		0	50		0	0		0	0		75		
Storage Lanes	1		0	1		0	0		1	0		1		
Taper Length (ft)	25			25			25			25				
Right Turn on Red			No			No			No			No		
Link Speed (mph)		25			25			30			25			
Link Distance (ft)		490			714			162			245			
Travel Time (s)		13.4			19.5			3.7			6.7			
Confl. Peds. (#/hr)	1					1	1					1		
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87		
Heavy Vehicles (%)	5%	7%	0%	0%	6%	31%	0%	0%	50%	0%	0%	4%		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	77	699	0	1	699	0	0	0	2	0	28	52		
Turn Type	pm+pt	NA		pm+pt	NA				custom	Perm	NA	Perm		
Protected Phases	5	2		1	6			4			8		9	11
Permitted Phases	2			6			4		2	8		8		
Detector Phase	5	2		1	6		4	4	2	8	8	8		
Switch Phase														
Minimum Initial (s)	5.0	20.0		5.0	20.0		8.0	8.0	20.0	8.0	8.0	8.0	2.0	2.0
Minimum Split (s)	12.0	35.0		12.0	35.0		25.0	25.0	35.0	25.0	25.0	25.0	4.0	4.0
Total Split (s)	12.0	60.0		12.0	60.0		25.0	25.0	60.0	25.0	25.0	25.0	4.0	4.0
Total Split (%)	11.4%	57.1%		11.4%	57.1%		23.8%	23.8%	57.1%	23.8%	23.8%	23.8%	4%	4%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	2.0	2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	0.0	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)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0		
Lead/Lag		Lag			Lag				Lag					Lead
Lead-Lag Optimize?														
Recall Mode	None	C-Min		None	C-Min		None	None	C-Min	None	None	None	None	None
v/c Ratio	0.16	0.49		0.00	0.55				0.00		0.21	0.38		
Control Delay	2.7	6.4		7.0	11.5				6.0		47.3	52.2		
Queue Delay	0.0	0.4		0.0	0.1				0.0		0.0	0.0		
Total Delay	2.7	6.8		7.0	11.6				6.0		47.3	52.2		
Queue Length 50th (ft)	4	37		0	210				0		18	34		
Queue Length 95th (ft)	m9	578		m1	378				4		43	68		
Internal Link Dist (ft)		410			634			82			165			
Turn Bay Length (ft)	150			50								75		
Base Capacity (vph)	482	1420		550	1276				861		260	274		
Starvation Cap Reductn	0	290		0	77				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	0.16	0.62		0.00	0.58				0.00		0.11	0.19		

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 74 (70%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

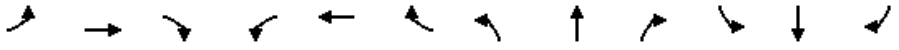
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: SR 303 & Library Street



Lane Group	Ø15
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	15
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	2.0
Minimum Split (s)	4.0
Total Split (s)	4.0
Total Split (%)	4%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Recall Mode	None
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	607	1	1	595	13	0	0	2	24	0	45
Future Volume (vph)	67	607	1	1	595	13	0	0	2	24	0	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0				6.0		6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00				1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00				1.00		1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00				1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00				0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00				1.00		0.95	1.00
Satd. Flow (prot)	1719	1775		1805	1777				1077		1805	1512
Flt Permitted	0.29	1.00		0.34	1.00				1.00		0.76	1.00
Satd. Flow (perm)	516	1775		647	1777				1077		1439	1512
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	77	698	1	1	684	15	0	0	2	28	0	52
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	77	699	0	1	699	0	0	0	2	0	28	52
Confl. Peds. (#/hr)	1					1	1					1
Heavy Vehicles (%)	5%	7%	0%	0%	6%	31%	0%	0%	50%	0%	0%	4%
Turn Type	pm+pt	NA		pm+pt	NA				custom	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4		2	8		8
Actuated Green, G (s)	82.1	75.2		68.0	66.6				75.2		8.0	8.0
Effective Green, g (s)	82.1	75.2		68.0	66.6				75.2		8.0	8.0
Actuated g/C Ratio	0.78	0.72		0.65	0.63				0.72		0.08	0.08
Clearance Time (s)	6.0	6.0		6.0	6.0				6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0		3.0	3.0
Lane Grp Cap (vph)	482	1271		434	1127				771		109	115
v/s Ratio Prot	c0.01	c0.39		0.00	c0.39							
v/s Ratio Perm	0.11			0.00					0.00		0.02	c0.03
v/c Ratio	0.16	0.55		0.00	0.62				0.00		0.26	0.45
Uniform Delay, d1	10.5	7.0		10.5	11.6				4.2		45.7	46.4
Progression Factor	0.56	0.83		1.12	0.90				1.00		1.00	1.00
Incremental Delay, d2	0.1	1.5		0.0	2.4				0.0		1.3	2.8
Delay (s)	6.0	7.3		11.7	12.8				4.2		47.0	49.2
Level of Service	A	A		B	B				A		D	D
Approach Delay (s)		7.1			12.8			4.2			48.4	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9	Ø11
Lane Configurations														
Traffic Volume (vph)	190	369	238	151	345	29	241	407	220	47	475	168		
Future Volume (vph)	190	369	238	151	345	29	241	407	220	47	475	168		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	225		225	100		100	250		125	200		275		
Storage Lanes	1		1	1		1	1		1	1		1		
Taper Length (ft)	25			25			25			25				
Right Turn on Red			No			No			No			No		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		714			738			1388			876			
Travel Time (s)		19.5			20.1			37.9			23.9			
Confl. Peds. (#/hr)	7					7	5					5		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	2%	2%	3%	1%	2%	0%	2%	2%	2%	0%	2%	9%		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	196	380	245	156	356	30	248	420	227	48	490	173		
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov		
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3	9	11
Permitted Phases	8		8	4		4	6		6	2		2		
Detector Phase	3	8	1	7	4	5	1	6	7	5	2	3		
Switch Phase														
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	4.0	5.0	15.0	5.0	4.0	15.0	5.0	2.0	2.0
Minimum Split (s)	10.0	31.0	10.0	10.0	31.0	9.0	10.0	27.0	10.0	9.0	27.0	10.0	4.0	4.0
Total Split (s)	14.0	32.0	15.0	13.0	31.0	9.0	15.0	43.0	13.0	9.0	37.0	14.0	4.0	4.0
Total Split (%)	13.3%	30.5%	14.3%	12.4%	29.5%	8.6%	14.3%	41.0%	12.4%	8.6%	35.2%	13.3%	4%	4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	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	0.0	0.0		
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		
Lead-Lag Optimize?														
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None	None	None
v/c Ratio	0.67	0.84	0.40	0.65	0.84	0.06	0.80	0.59	0.28	0.14	0.75	0.26		
Control Delay	42.1	56.8	27.9	49.2	56.1	20.0	52.1	30.1	15.0	22.6	43.4	22.0		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	42.1	56.8	27.9	49.2	56.1	20.0	52.1	30.1	15.0	22.6	43.4	22.0		
Queue Length 50th (ft)	92	267	156	65	225	12	119	297	95	21	305	95		
Queue Length 95th (ft)	#152	#374	143	#142	#356	33	#208	257	107	m28	m#450	m121		
Internal Link Dist (ft)		634			658			1308			796			
Turn Bay Length (ft)	225		225	100		100	250		125	200		275		
Base Capacity (vph)	292	493	608	240	469	517	311	763	792	354	655	663		
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0		
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0		
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0		
Reduced v/c Ratio	0.67	0.77	0.40	0.65	0.76	0.06	0.80	0.55	0.29	0.14	0.75	0.26		

Intersection Summary

Area Type: Other

Cycle Length: 105

Actuated Cycle Length: 105

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

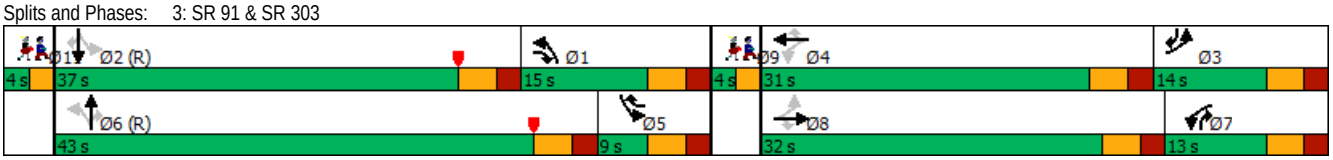
Natural Cycle: 90

Control Type: Actuated-Coordinated

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: SR 91 & SR 303



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	369	238	151	345	29	241	407	220	47	475	168
Future Volume (vph)	190	369	238	151	345	29	241	407	220	47	475	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
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
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1768	1863	1568	1787	1863	1575	1770	1863	1583	1805	1863	1446
Flt Permitted	0.23	1.00	1.00	0.17	1.00	1.00	0.18	1.00	1.00	0.26	1.00	1.00
Satd. Flow (perm)	424	1863	1568	326	1863	1575	344	1863	1583	498	1863	1446
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	196	380	245	156	356	30	248	420	227	48	490	173
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	196	380	245	156	356	30	248	420	227	48	490	173
Confl. Peds. (#/hr)	7					7	5					5
Heavy Vehicles (%)	2%	2%	3%	1%	2%	0%	2%	2%	2%	0%	2%	9%
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	3	8	1	7	4	5	1	6	7	5	2	3
Permitted Phases	8		8	4		4	6		6	2		2
Actuated Green, G (s)	36.9	25.6	37.8	33.7	24.0	33.3	47.8	35.6	45.3	42.0	32.7	44.0
Effective Green, g (s)	36.9	25.6	37.8	33.7	24.0	33.3	47.8	35.6	45.3	42.0	32.7	44.0
Actuated g/C Ratio	0.35	0.24	0.36	0.32	0.23	0.32	0.46	0.34	0.43	0.40	0.31	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	293	454	564	239	425	499	322	631	682	314	580	605
v/s Ratio Prot	c0.07	c0.20	0.05	0.06	0.19	0.01	c0.09	0.23	0.03	0.01	c0.26	0.03
v/s Ratio Perm	0.16		0.11	0.15		0.01	0.26		0.11	0.05		0.09
v/c Ratio	0.67	0.84	0.43	0.65	0.84	0.06	0.77	0.67	0.33	0.15	0.84	0.29
Uniform Delay, d1	38.0	37.7	25.5	40.7	38.6	25.0	36.5	29.6	19.8	31.3	33.8	20.1
Progression Factor	0.92	1.13	1.16	1.00	1.00	1.00	1.04	0.93	0.87	1.26	1.22	1.35
Incremental Delay, d2	4.7	10.6	0.4	6.3	13.4	0.1	9.6	4.8	0.3	0.1	9.1	0.2
Delay (s)	39.6	53.3	30.0	47.0	52.1	25.0	47.5	32.3	17.4	39.6	50.3	27.3
Level of Service	D	D	C	D	D	C	D	C	B	D	D	C
Approach Delay (s)		43.1			49.1			32.7			44.0	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	41.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

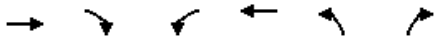
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9	Ø11
Lane Configurations								
Traffic Volume (vph)	607	98	53	499	115	75		
Future Volume (vph)	607	98	53	499	115	75		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Storage Length (ft)		200	350		0	0		
Storage Lanes		1	1		1	1		
Taper Length (ft)			25		25			
Right Turn on Red		No				No		
Link Speed (mph)	25			25	25			
Link Distance (ft)	675			390	240			
Travel Time (s)	18.4			10.6	6.5			
Confl. Peds. (#/hr)					3			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Heavy Vehicles (%)	2%	1%	0%	5%	2%	0%		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	632	102	55	520	120	78		
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm		
Protected Phases	2		1	2	4		9	11
Permitted Phases		2	2			4		
Detector Phase	2	2	1	2	4	4		
Switch Phase								
Minimum Initial (s)	25.0	25.0	9.0	25.0	11.0	11.0	2.0	2.0
Minimum Split (s)	31.6	31.6	15.6	31.6	23.3	23.3	4.0	4.0
Total Split (s)	58.1	58.1	15.6	58.1	23.3	23.3	4.0	4.0
Total Split (%)	55.3%	55.3%	14.9%	55.3%	22.2%	22.2%	4%	4%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.3	3.3	2.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.6	5.6	5.6	5.6	5.3	5.3		
Lead/Lag	Lag	Lag		Lag				Lead
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	None	C-Min	None	None	None	None
v/c Ratio	0.52	0.10	0.10	0.44	0.54	0.39		
Control Delay	4.1	2.0	8.3	15.0	51.9	47.2		
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0		
Total Delay	4.3	2.0	8.3	15.0	51.9	47.2		
Queue Length 50th (ft)	109	8	7	293	77	49		
Queue Length 95th (ft)	m100	m9	m37	477	130	92		
Internal Link Dist (ft)	595			310	160			
Turn Bay Length (ft)		200	350					
Base Capacity (vph)	1210	1039	570	1176	303	276		
Starvation Cap Reductn	126	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	0.58	0.10	0.10	0.44	0.40	0.28		

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 25 (24%), Referenced to phase 2:EBWB, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Shopping Center & SR 303



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	607	98	53	499	115	75
Future Volume (vph)	607	98	53	499	115	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6	5.6	5.6	5.3	5.3
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1599	1805	1810	1770	1615
Flt Permitted	1.00	1.00	0.32	1.00	0.95	1.00
Satd. Flow (perm)	1863	1599	613	1810	1770	1615
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	632	102	55	520	120	78
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	632	102	55	520	120	78
Confl. Peds. (#/hr)					3	
Heavy Vehicles (%)	2%	1%	0%	5%	2%	0%
Turn Type	NA	Perm	pm+pt	NA	Prot	Perm
Protected Phases	2		1	2	4	
Permitted Phases		2	2			4
Actuated Green, G (s)	65.5	65.5	72.7	65.5	13.2	13.2
Effective Green, g (s)	65.5	65.5	72.7	65.5	13.2	13.2
Actuated g/C Ratio	0.62	0.62	0.69	0.62	0.13	0.13
Clearance Time (s)	5.6	5.6	5.6	5.6	5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1162	997	506	1129	222	203
v/s Ratio Prot	c0.34		c0.01	0.29	c0.07	
v/s Ratio Perm		0.06	0.07			0.05
v/c Ratio	0.54	0.10	0.11	0.46	0.54	0.38
Uniform Delay, d1	11.2	7.9	11.8	10.4	43.1	42.2
Progression Factor	0.25	0.21	1.77	1.28	1.00	1.00
Incremental Delay, d2	1.3	0.1	0.1	1.2	2.7	1.2
Delay (s)	4.1	1.8	21.0	14.5	45.7	43.4
Level of Service	A	A	C	B	D	D
Approach Delay (s)	3.8			15.1	44.8	
Approach LOS	A			B	D	

Intersection Summary				
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

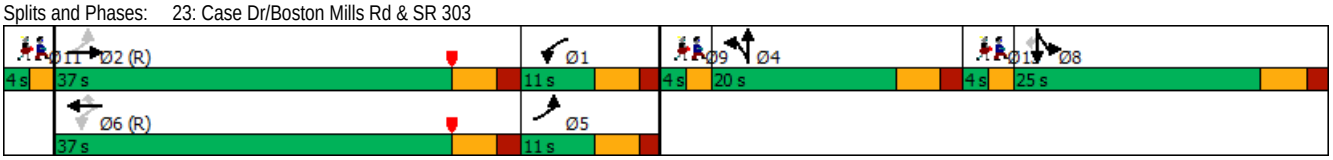
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9	Ø11
Lane Configurations														
Traffic Volume (vph)	5	532	15	22	552	98	16	32	10	217	65	18		
Future Volume (vph)	5	532	15	22	552	98	16	32	10	217	65	18		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	150		0	75		150	0		0	0		200		
Storage Lanes	1		0	1		1	0		0	0		1		
Taper Length (ft)	25			25			25			25				
Right Turn on Red			No			No			No			No		
Link Speed (mph)		25			25			25			25			
Link Distance (ft)		738			675			259			356			
Travel Time (s)		20.1			18.4			7.1			9.7			
Confl. Peds. (#/hr)			3	3			2		1	1		2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Heavy Vehicles (%)	10%	6%	10%	2%	6%	3%	4%	1%	4%	3%	1%	14%		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	5	594	0	24	600	107	0	63	0	0	307	20		
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	Perm		
Protected Phases	5	2		1	6		4	4		8	8		9	11
Permitted Phases	2			6		6						8		
Detector Phase	5	2		1	6	6	4	4		8	8	8		
Switch Phase														
Minimum Initial (s)	5.0	30.0		5.0	30.0	30.0	5.0	5.0		5.0	5.0	5.0	2.0	2.0
Minimum Split (s)	10.2	36.5		10.2	36.5	36.5	19.4	19.4		14.4	14.4	14.4	4.0	4.0
Total Split (s)	11.0	37.0		11.0	37.0	37.0	20.0	20.0		25.0	25.0	25.0	4.0	4.0
Total Split (%)	10.5%	35.2%		10.5%	35.2%	35.2%	19.0%	19.0%		23.8%	23.8%	23.8%	4%	4%
Yellow Time (s)	3.6	3.6		3.6	3.6	3.6	3.6	3.6		3.6	3.6	3.6	2.0	2.0
All-Red Time (s)	1.6	1.9		1.6	1.9	1.9	1.8	1.8		1.8	1.8	1.8	0.0	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)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4		
Lead/Lag	Lag	Lead		Lag	Lead	Lead	Lag	Lag		Lag	Lag	Lag	Lead	
Lead-Lag Optimize?														
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None	None	None
v/c Ratio	0.02	0.63		0.08	0.61	0.12		0.40			0.93	0.08		
Control Delay	15.2	26.2		10.4	17.9	14.0		51.5			78.0	36.3		
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0		
Total Delay	15.2	26.2		10.4	17.9	14.0		51.5			78.0	36.3		
Queue Length 50th (ft)	1	242		1	27	5		41			205	11		
Queue Length 95th (ft)	10	#672		m14	#665	88		79			#367	33		
Internal Link Dist (ft)		658			595			179			276			
Turn Bay Length (ft)	150			75		150						200		
Base Capacity (vph)	286	937		317	979	857		247			333	256		
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	0.02	0.63		0.08	0.61	0.12		0.26			0.92	0.08		

Intersection Summary

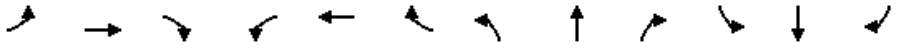
Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 105
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Case Dr/Boston Mills Rd & SR 303



Lane Group	Ø13
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	13
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	2.0
Minimum Split (s)	4.0
Total Split (s)	4.0
Total Split (%)	4%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Recall Mode	None
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	532	15	22	552	98	16	32	10	217	65	18
Future Volume (vph)	5	532	15	22	552	98	16	32	10	217	65	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.96	1.00
Satd. Flow (prot)	1641	1782		1770	1792	1568		1781			1784	1372
Flt Permitted	0.21	1.00		0.22	1.00	1.00		0.99			0.96	1.00
Satd. Flow (perm)	369	1782		408	1792	1568		1781			1784	1372
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	578	16	24	600	107	17	35	11	236	71	20
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	5	594	0	24	600	107	0	63	0	0	307	20
Confl. Peds. (#/hr)			3	3			2		1	1		2
Heavy Vehicles (%)	10%	6%	10%	2%	6%	3%	4%	1%	4%	3%	1%	14%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		4	4		8	8	
Permitted Phases	2			6		6						8
Actuated Green, G (s)	46.5	45.4		50.7	47.5	47.5		8.2			19.4	19.4
Effective Green, g (s)	46.5	45.4		50.7	47.5	47.5		8.2			19.4	19.4
Actuated g/C Ratio	0.44	0.43		0.48	0.45	0.45		0.08			0.18	0.18
Clearance Time (s)	5.2	5.5		5.2	5.5	5.5		5.4			5.4	5.4
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	3.0
Lane Grp Cap (vph)	176	770		238	810	709		139			329	253
v/s Ratio Prot	0.00	0.33		c0.00	c0.33			c0.04			c0.17	
v/s Ratio Perm	0.01			0.05		0.07						0.01
v/c Ratio	0.03	0.77		0.10	0.74	0.15		0.45			0.93	0.08
Uniform Delay, d1	32.0	25.4		30.0	23.7	16.9		46.3			42.2	35.4
Progression Factor	1.00	1.00		0.67	0.63	0.83		1.00			1.00	1.00
Incremental Delay, d2	0.1	7.4		0.2	5.7	0.4		2.3			32.6	0.1
Delay (s)	32.1	32.7		20.4	20.7	14.4		48.6			74.7	35.5
Level of Service	C	C		C	C	B		D			E	D
Approach Delay (s)		32.7			19.8			48.6			72.3	
Approach LOS		C			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	27.5
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

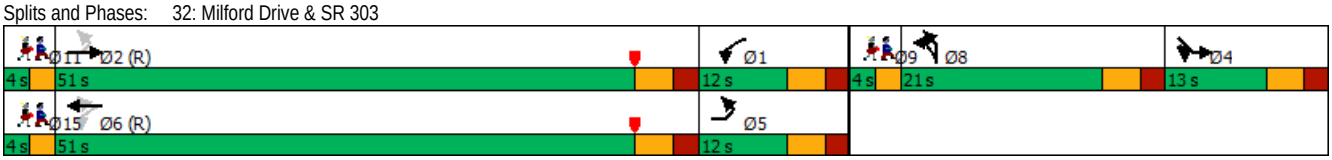
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2	Ø9	Ø11
Lane Configurations														
Traffic Volume (vph)	36	723	20	52	606	72	13	33	44	43	34	25		
Future Volume (vph)	36	723	20	52	606	72	13	33	44	43	34	25		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	75		0	50		0		200	0	50	50			
Storage Lanes	1		0	1		1		1	0	1	1			
Taper Length (ft)	25			25				25		25				
Right Turn on Red			No			No			No			No		
Link Speed (mph)		25			25			25		30				
Link Distance (ft)		550			210			184		257				
Travel Time (s)		15.0			5.7			5.0		5.8				
Confl. Peds. (#/hr)			12	12			4		9	9		4		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94		
Heavy Vehicles (%)	2%	5%	3%	1%	5%	2%	6%	3%	2%	3%	2%	2%		
Shared Lane Traffic (%)							10%							
Lane Group Flow (vph)	38	790	0	55	645	77	13	83	0	46	36	27		
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	Prot		Prot	Prot	Prot		
Protected Phases	5	2		1	6		8	8		4	4	4	9	11
Permitted Phases	2			6		6								
Detector Phase	5	2		1	6	6	8	8		4	4	4		
Switch Phase														
Minimum Initial (s)	7.0	25.0		7.0	25.0	25.0	8.0	8.0		8.0	8.0	8.0	2.0	2.0
Minimum Split (s)	12.0	39.0		12.0	39.0	39.0	21.0	21.0		13.0	13.0	13.0	4.0	4.0
Total Split (s)	12.0	51.0		12.0	51.0	51.0	21.0	21.0		13.0	13.0	13.0	4.0	4.0
Total Split (%)	11.4%	48.6%		11.4%	48.6%	48.6%	20.0%	20.0%		12.4%	12.4%	12.4%	4%	4%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	2.0	2.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	0.0	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)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0		
Lead/Lag		Lag			Lag	Lag	Lag	Lag					Lead	Lead
Lead-Lag Optimize?		Yes			Yes	Yes	Yes	Yes					Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None	None	None
v/c Ratio	0.08	0.71		0.19	0.56	0.08	0.07	0.50		0.33	0.29	0.22		
Control Delay	12.1	29.3		8.3	15.1	9.2	40.9	53.8		52.7	51.9	49.7		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		
Total Delay	12.1	29.3		8.3	15.2	9.2	40.9	53.8		52.7	51.9	49.7		
Queue Length 50th (ft)	12	503		14	397	24	8	56		30	23	17		
Queue Length 95th (ft)	m23	#815		m13	357	m36	26	104		67	57	46		
Internal Link Dist (ft)		470			130			104		177				
Turn Bay Length (ft)	75			50			200	200		50	50	50		
Base Capacity (vph)	466	1120		294	1147	1003	246	233		138	125	125		
Starvation Cap Reductn	0	0		0	12	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	0.08	0.71		0.19	0.57	0.08	0.05	0.36		0.33	0.29	0.22		

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 67 (64%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 95
Control Type: Actuated-Coordinated
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: 32: Milford Drive & SR 303



Lane Group	Ø15
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	15
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	2.0
Minimum Split (s)	4.0
Total Split (s)	4.0
Total Split (%)	4%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Recall Mode	None
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL2	NBL	NBR	SEL	SER	SER2
Lane Configurations												
Traffic Volume (vph)	36	723	20	52	606	72	13	33	44	43	34	25
Future Volume (vph)	36	723	20	52	606	72	13	33	44	43	34	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	0.95	0.95		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	0.97		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.92		1.00	0.85	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00
Satd. Flow (prot)	1770	1801		1787	1810	1583	1618	1534		1752	1583	1583
Flt Permitted	0.29	1.00		0.16	1.00	1.00	0.95	0.98		0.95	1.00	1.00
Satd. Flow (perm)	539	1801		294	1810	1583	1618	1534		1752	1583	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	38	769	21	55	645	77	14	35	47	46	36	27
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	38	790	0	55	645	77	13	83	0	46	36	27
Confl. Peds. (#/hr)			12	12			4		9	9		4
Heavy Vehicles (%)	2%	5%	3%	1%	5%	2%	6%	3%	2%	3%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	Prot		Prot	Prot	Prot
Protected Phases	5	2		1	6		8	8		4	4	4
Permitted Phases	2			6		6						
Actuated Green, G (s)	64.8	58.1		65.0	59.4	59.4	9.8	9.8		6.7	6.7	6.7
Effective Green, g (s)	64.8	58.1		65.0	59.4	59.4	9.8	9.8		6.7	6.7	6.7
Actuated g/C Ratio	0.62	0.55		0.62	0.57	0.57	0.09	0.09		0.06	0.06	0.06
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	411	996		261	1023	895	151	143		111	101	101
v/s Ratio Prot	0.01	c0.44		c0.01	0.36		0.01	c0.05		c0.03	0.02	0.02
v/s Ratio Perm	0.05			0.12		0.05						
v/c Ratio	0.09	0.79		0.21	0.63	0.09	0.09	0.58		0.41	0.36	0.27
Uniform Delay, d1	17.0	18.7		28.4	15.4	10.4	43.5	45.6		47.3	47.1	46.8
Progression Factor	1.24	1.31		0.68	0.79	0.70	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.1	6.0		0.3	2.4	0.2	0.2	5.9		2.5	2.2	1.4
Delay (s)	21.1	30.5		19.7	14.5	7.4	43.8	51.5		49.8	49.2	48.2
Level of Service	C	C		B	B	A	D	D		D	D	D
Approach Delay (s)		30.1			14.2			50.5		49.2		
Approach LOS		C			B			D		D		

Intersection Summary				
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.69			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	24.0	
Intersection Capacity Utilization	70.8%	ICU Level of Service	C	
Analysis Period (min)	15			

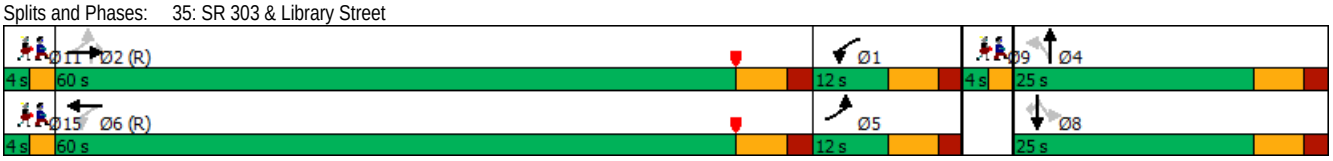
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9	Ø11
Lane Configurations														
Traffic Volume (vph)	119	736	8	10	597	40	10	0	11	94	3	163		
Future Volume (vph)	119	736	8	10	597	40	10	0	11	94	3	163		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Storage Length (ft)	150		0	50		0	0		0	0		75		
Storage Lanes	1		0	1		0	0		1	0		1		
Taper Length (ft)	25			25			25			25				
Right Turn on Red			No			No			No			No		
Link Speed (mph)		25			25			30			25			
Link Distance (ft)		490			714			162			245			
Travel Time (s)		13.4			19.5			3.7			6.7			
Confl. Peds. (#/hr)	1					1	1		8	8		1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93		
Heavy Vehicles (%)	0%	2%	0%	0%	2%	3%	0%	0%	0%	2%	0%	1%		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	128	800	0	11	685	0	0	11	12	0	104	175		
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	custom	Perm	NA	Perm		
Protected Phases	5	2		1	6			4			8		9	11
Permitted Phases	2			6			4		2	8		8		
Detector Phase	5	2		1	6		4	4	2	8	8	8		
Switch Phase														
Minimum Initial (s)	5.0	20.0		5.0	20.0		8.0	8.0	20.0	8.0	8.0	8.0	2.0	2.0
Minimum Split (s)	12.0	35.0		12.0	35.0		25.0	25.0	35.0	25.0	25.0	25.0	4.0	4.0
Total Split (s)	12.0	60.0		12.0	60.0		25.0	25.0	60.0	25.0	25.0	25.0	4.0	4.0
Total Split (%)	11.4%	57.1%		11.4%	57.1%		23.8%	23.8%	57.1%	23.8%	23.8%	23.8%	4%	4%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	2.0	2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	0.0	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)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0		
Lead/Lag		Lag			Lag				Lag					Lead
Lead-Lag Optimize?														
Recall Mode	None	C-Min		None	C-Min		None	None	C-Min	None	None	None	None	None
v/c Ratio	0.31	0.61		0.03	0.61			0.06	0.01		0.52	0.74		
Control Delay	10.3	15.1		5.6	21.7			36.7	7.7		49.6	60.5		
Queue Delay	0.0	0.3		0.0	0.3			0.0	0.0		0.0	0.0		
Total Delay	10.3	15.3		5.6	22.0			36.7	7.7		49.6	60.5		
Queue Length 50th (ft)	37	244		2	350			6	2		64	112		
Queue Length 95th (ft)	m35	430		m4	402			22	12		117	183		
Internal Link Dist (ft)		410			634			82			165			
Turn Bay Length (ft)	150			50								75		
Base Capacity (vph)	410	1306		362	1115			237	1103		240	284		
Starvation Cap Reductn	0	113		0	83			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	0.31	0.67		0.03	0.66			0.05	0.01		0.43	0.62		

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 61 (58%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

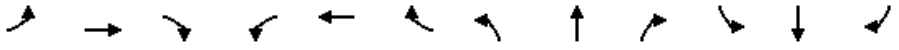
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 35: SR 303 & Library Street



Lane Group	Ø15
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	15
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	2.0
Minimum Split (s)	4.0
Total Split (s)	4.0
Total Split (%)	4%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Recall Mode	None
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	736	8	10	597	40	10	0	11	94	3	163
Future Volume (vph)	119	736	8	10	597	40	10	0	11	94	3	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.97		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		0.98	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.95	1.00
Satd. Flow (prot)	1805	1860		1805	1842			1800	1573		1738	1562
Flt Permitted	0.25	1.00		0.23	1.00			0.69	1.00		0.72	1.00
Satd. Flow (perm)	467	1860		429	1842			1307	1573		1320	1562
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	128	791	9	11	642	43	11	0	12	101	3	175
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	128	800	0	11	685	0	0	11	12	0	104	175
Confl. Peds. (#/hr)	1					1	1		8	8		1
Heavy Vehicles (%)	0%	2%	0%	0%	2%	3%	0%	0%	0%	2%	0%	1%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA	custom	Perm	NA	Perm
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2			6			4		2	8		8
Actuated Green, G (s)	74.6	67.4		58.4	57.2			16.0	67.4		16.0	16.0
Effective Green, g (s)	74.6	67.4		58.4	57.2			16.0	67.4		16.0	16.0
Actuated g/C Ratio	0.71	0.64		0.56	0.54			0.15	0.64		0.15	0.15
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	446	1193		254	1003			199	1009		201	238
v/s Ratio Prot	c0.02	c0.43		0.00	0.37							
v/s Ratio Perm	0.18			0.02				0.01	0.01		0.08	c0.11
v/c Ratio	0.29	0.67		0.04	0.68			0.06	0.01		0.52	0.74
Uniform Delay, d1	18.0	11.8		22.6	17.3			38.0	6.8		40.9	42.5
Progression Factor	1.19	1.25		0.86	1.33			1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	2.4		0.1	2.8			0.1	0.0		2.2	11.2
Delay (s)	21.7	17.1		19.4	25.9			38.2	6.8		43.2	53.7
Level of Service	C	B		B	C			D	A		D	D
Approach Delay (s)		17.8			25.8			21.8			49.8	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX E

Unit	Description	Unit Price	Option 1: Dedicated Right Turn		Option 2: Dedicated Left Turn		Option 2b: Dedicated Left and Right Turn		Option 3: Dedicated Left and Right Turn Losing West Bound	
			Quantity	Extension	Quantity	Extension	Quantity	Extension	Quantity	Extension
SY	PAVEMENT REMOVED	$ 12	900	$ 10,800	570	$ 6,840	640	$ 7,680	1510	$ 18,120
FT	CURB REMOVED	$ 8	390	$ 3,120	855	$ 6,840	340	$ 2,720	560	$ 4,480
CY	CLASS QC2 CONCRETE, SIDEWALK	$ 471	10	$ 4,710	0	$ -	15	$ 7,070	60	$ 28,260
SF	CURB RAMP	$ 34	55	$ 1,870	0	$ -	55	$ 1,870	200	$ 6,800
FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 31	1200	$ 37,200	900	$ 27,900	1200	$ 37,200	1930	$ 59,830
MILE	CENTER LINE, TYPE 1	$ 823	0.3	$ 250	0.2	$ 170	0	$ -	0.2	$ 170
FT	CHANNELIZING LINE, 8", TYPE 1	$ 1	220	$ 220	340	$ 340	480	$ 480	600	$ 600
FT	STOP LINE, TYPE 1	$ 6	0	$ -	15	$ 90	55	$ 330	80	$ 480
FT	CROSSWALK LINE, TYPE 1	$ 3	310	$ 930	310	$ 930	400	$ 1,200	650	$ 1,950
FT	TRANSVERSE/DIAGONAL LINE, TYPE 1	$ 3	60	$ 180	10	$ 30	10	$ 30	30	$ 90
EACH	LANE ARROW, TYPE 1	$ 58	2	$ 120	3	$ 180	5	$ 290	6	$ 350
EACH	WORD ON PAVEMENT, 72", TYPE 1	$ 120	1	$ 120	2	$ 240	3	$ 360	4	$ 480
CY	EMBANKMENT	$ 23	310	$ 7,130	190	$ 4,370	250	$ 5,750	560	$ 12,880
SY	PAVEMENT WIDENING	$ 65	0	$ -	0	$ -	185	$ 12,030	0	$ -
EACH	MAST ARM SIGNAL REPLACEMENT	$ 90,000.00	0	$ -	1	$ 90,000	1	$ 90,000	0	$ -
EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE	$ 900.00	1	$ 900	1	$ 900	2	$ 1,800	2	$ 1,800
EACH	SPECIAL - REMOVAL AND REPLACEMENT OF SIGNAL LAMP	$ 750.00	1	$ 750	1	$ 750	2	$ 1,500	2	$ 1,500
EACH	CATCH BASIN REMOVED	$ 351.00	1	$ 360	0	$ -	1	$ 360	1	$ 360
EACH	CATCH BASIN	$ 3,000.00	1	$ 3,000	0	$ -	1	$ 3,000	1	$ 3,000
LS	LANDSCAPING (LOCAL FUNDING)	$ -	1	$ 16,000	1	$ 20,000	1	$ 20,000	1	$ 36,000
	Subtotal (Less Incidental & Contingency Costs)		$	88,000	$	160,000	$	194,000	$	178,000
LS	PREMIUM FOR CONTRACT PERFORMANCE BOND & PAYMENT BOND	$ -	$	900	$	1,600	$	2,000	$	1,800
LS	MAINTAINING TRAFFIC	$ -	$	8,800	$	16,000	$	19,400	$	17,800
LS	CONSTRUCTION LAYOUT STAKES AND SURVEYING	$ -	$	900	$	1,600	$	2,000	$	1,800
LS	MOBILIZATION	$ -	$	2,000	$	2,000	$	2,000	$	4,000
LS	ROW	$ -	$	-	$	-	$	11,000	$	-
LS	UTILITY MODIFICATIONS	$ -	$	1,800	$	3,200	$	7,800	$	3,600
	Contingency 30%		$	30,800	$	55,400	$	71,500	$	62,100
	Engineering Design Fee 20%		$	26,700	$	48,000	$	62,000	$	53,900
	Design Alternative Total w/ Contingency		**$**	**160,000**	**$**	**288,000**	**$**	**372,000**	**$**	**323,000**