

Traffic Impact Study

Avon Village Center Master Plan Carpionato Group LLC

Avon, Connecticut

May 2018

Town of Avon Land Use Applications
Office of the State Traffic Administration (OSTA)
Major Traffic Generator Certificate Application



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Summary Sheet

As an aid to reviewers, this Summary Sheet has been included to outline the various study parameters utilized in this report. Although a full explanation of the study methodologies is included in the text of the report, this summary can serve as a useful reference for reviewers.

Applicant:

Carpionato Group, LLC

Site Acreage:

76.98 acres

Development Size/Type:

1,019,047 SF Mixed Use Development

Parking:

1,830 parking spaces

Applications:

Town of Avon Land Use Applications

CTDOT Major Traffic Generator Certificate Application

Design Year:

2020

Background Traffic Growth Factor:

2015 Counts = 6.25%

2016 & 2018 Counts = 1.0% per year

Traffic Counts:

Avon Park North Traffic Feasibility Study- June 2015

Additional turning movement counts in September 2015, July 2016, and March 2018

Peak Hours Analyzed:

Morning Peak Hour – 7:30 am to 8:30 am

Afternoon Peak Hour – 5:00 pm to 6:00 pm

Saturday Peak Hour - 11:30 am to 12:30 pm

Expected New Trip Generation:

Morning Peak Hour – 505 Trips (286 entering, 219 exiting)

Afternoon Peak Hour – 1578 Trips (759 entering, 819 exiting)

Saturday Peak Hour – 1796 (926 entering, 870 exiting)

Capacity Analysis:

Technique – 2010 Highway Capacity Manual

Execution – Synchro Professional Software, Version 10.0

1 Introduction

Carpionato Group, LLC proposes to construct Avon Village Center, a 1,019,047 square foot mixed use development in Avon, Connecticut, consisting of 519,670 square feet of retail, 45,230 square feet of office, 434,181 square feet (372 units) of residential, and 19,966 square feet of cultural arts. A site location map is shown on *Figure No.1 of Appendix B*. A total of 1,830 new parking spaces will be provided throughout the site.

Fuss & O'Neill has been retained to study the impact of the proposed mixed use development on traffic conditions on the adjacent roadway network. This report has been prepared to document the findings of the study and is being submitted to the Town of Avon in support of the local approval process. This report is also being submitted to the Office of the State Traffic Administration (OSTA) in support of a major traffic generator certificate application.

2 Existing Condition

2.1 Site of Development

The existing Avon Village Center parcel is a 76.98 acre site which is bounded by U.S. Route 44 (West Main Street) to the south, Fisher Drive to the north, Route 10/202 (Simsbury Road) to the east, and Climax Road to the west. Primary access to Avon Village Center will be provided on U.S. Route 44 and Route 10.

2.2 Adjacent Roadway Network

The adjacent roadway network consists of the following roadways:

- U.S. Route 44 (West Main Street)
- Route 10/202 (Simsbury Road)

Route 44 generally provides two lanes of travel in each direction in the vicinity of the site but widens to provide additional turn lanes at signalized intersections. Route 44 provides regional access to the Avon Village Center site from the Towns of Canton and New Hartford to the west and the greater Hartford area to the east. The posted speed limit on Route 44 adjacent to the site is 35 miles per hour.

Route 10/202 generally provides one lane of travel in each direction but widens to provide additional turn lanes at key signalized intersections. Route 10/202 provides access from the Towns of Simsbury and Granby to the north and the Towns of Farmington and Plainville to the south. The posted speed limit on Route 10/202 in the vicinity of Fisher Drive is 40 miles per hour in the northbound direction and 35 miles per hour in the southbound direction.

2.3 Internal Roadway Network

The existing internal roadway network of the Avon Village Center site is comprised of the following collector roadways:

- Ensign Drive
- Fisher Drive
- Bickford Drive
- Climax Road

Each roadway provides one travel lane in each direction and has a posted speed limit of 30 miles per hour.

Ensign Drive is aligned in a generally north/south direction through the Avon Village Center site and provides access to the site and various town offices from Route 44. Ensign Drive begins on Route 44 at the southern boundary of the site at a signalized intersection. Ensign Drive then winds its way to the northern portion of the site and terminates on Fisher Drive at a three-way unsignalized intersection.

Fisher Drive is oriented in an east/west direction in the northern portion of the site and provides the primary access to Avon Village Center from Route 10/202. Fisher Drive begins at a signalized intersection with Route 10 to the east and terminates at a cul-de-sac within Avon Village Center to the west.

Climax Road runs in a north-south direction along the westerly portion of the Avon Village Center site. Climax Road begins at a signalized intersection with Route 44 to the south, continues northerly into adjacent residential areas, and eventually terminates at Route 167 in Simsbury.

Bickford Drive runs in an east-west direction through the center of the Avon Village Center site, terminating on Ensign Drive to the east at an unsignalized intersection. To the west, Bickford Drive intersects with Climax Road at a two-way stop controlled intersection. West of this intersection, Bickford Drive provides access to the Forest Mews adult housing complex and an assisted living facility.

Avon Village Center also has bicycle and transit accessibility within walking distance. The Farmington Canal Heritage Trail runs fifty four miles through eleven towns from New Haven to Suffield and connects with many more biking and walking trails. A portion of the trail traverses the Avon Village Center site. The trail passes over Route 10/202 at the signalized intersection with Fisher Drive, which is equipped with an exclusive pedestrian phase, travels along Fisher Drive and Ensign Drive before passing under Route 44 near the Darling Drive intersection. Express transit service from Avon to Hartford is provided by the Route 1 line of the CT Transit Hartford Express Bus Service. The service runs on weekdays and stops on the corner of the western leg of the Route 44, Route 10/202, and Old Farms Road intersection.

2.4 Study Area Intersections

The following fourteen study area intersections were reviewed:

- Route 44 (West Main Street) at Lawrence Ave. & Plaza Drive
- Route 44 (West Main Street) at Climax Road
- Route 44 (West Main Street) at Ensign Drive and Office Park Driveway
- Route 44 (West Main Street) at Woodford Avenue
- Route 44 (East/West Main Street) at Route 10/202 (Simsbury Road) and Old Farms Road
- Route 44 (East Main Street) at Avon Village Drive & Private Drive
- Route 44 (East Main Street) at River Park Drive & Plaza Drive
- Route 44 (East Main Street) at Route 10 (Waterville Road) and Nod Road
- Route 10/202 (Simsbury Road) at Woodford Avenue
- Route 10/202 (Simsbury Road) at Fisher Drive and Mountain View Avenue
- Ensign Drive at Fisher Drive
- Ensign Drive at Bickford Drive
- Climax Road at Bickford Drive
- Route 167 (Bushy Hill Road) at Climax Road

The signalized intersection of Route 44 (West Main Street), Lawrence Avenue and Plaza Driveway is a four-way intersection with Route 44 running east/west, Lawrence Avenue intersecting from the north, and the Plaza Driveway intersecting from the south. Both approaches of Route 44 provide a shared left-turn/through lane and a shared through/right-turn lane. The Lawrence Avenue approach consists of a single lane and the Plaza Driveway approach provides a shared left-turn/through lane and an exclusive right-turn lane.

The signalized intersection of Route 44 (West Main Street) and Climax Road is a T-intersection with Route 44 running east/west and Climax Road intersecting from the north. The Route 44 approach from the east provides a through lane and a combined through/right turn lane, while the Route 44 approach from the west provides a 150 foot exclusive left turn lane along with two through lanes. The Climax Road approach from the north provides an exclusive left turn lane and an exclusive right turn lane.

The signalized intersection of Route 44 (West Main Street) at Ensign Drive and Office Park Driveway is a four-way intersection with Route 44 running east/west, Ensign Drive intersecting from the north, and Office Park Driveway intersecting from the south. Both approaches of Route 44 provide a shared left-turn/through lane and a shared through/right-turn lane. The Ensign Drive approach provides an exclusive right-turn lane and a shared left-turn/through lane. The Office Park Driveway is a one lane approach.

The unsignalized intersection of Route 44 (West Main Street) and Woodford Avenue is located between the intersection with Ensign Drive and the intersection with Route 10/202 and Old Farms Road. The single lane approach of Woodford Ave is stop-controlled and the two lanes in each direction on Route 44 are not controlled.

The signalized intersection of Route 44 (East/West Main Street), Route 10/202 (Simsbury Road), and Old Farms Road is a four-way intersection with Route 44 running east/west, Route 10 intersecting from the north, and Old Farms Road intersecting from the south. Both approaches of Route 44 provide an exclusive left-turn lane, one through lane and one shared through/right-turn lane. The Route 10 approach provides two exclusive left-turn lanes and a shared through/right-turn lane. The Old Farms Road provides an exclusive right-turn lane and a shared left-turn/through lane.

The signalized intersection of Route 44 (East Main Street), Avon Village Drive and Private Drive is a four-way intersection with Route 44 running east/west, Avon Village Drive intersecting from the south, and a private shopping area driveway intersecting from the north. Both approaches of Route 44 provide a shared left-turn/through lane and a shared through/right-turn lane. The Avon Village Drive has a shared left-turn/through lane and a channelized exclusive right-turn lane. The private driveway is a single lane approach.

The signalized intersection of Route 44 (East Main Street), River Park Drive, and Plaza Drive is a four-way intersection with Route 44 running east/west, River Park Drive intersecting from the south, and a Plaza Drive intersecting from the north. Both approaches of Route 44 provide an exclusive left-turn lane, one through lane and one shared through/right-turn lane. Both side street approaches provide an exclusive left-turn lane and a shared through/right-turn lane.

The signalized intersection of Route 44 (West Main Street), Route 10 (Waterville Road), and Nod Road is a four-way intersection with Route 44 running east/west, Nod Road intersecting from the north, and Route 10 intersecting from the south. The Route 44 eastbound approach provides an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane. The Route 44 westbound approach provides an exclusive left-turn lane, a through lane and a shared through/right-turn lane. The Nod Road approach provides an exclusive left-turn lane, a through lane, and an exclusive right-turn lane. The Route 10 approach provides two exclusive left-turn lanes and a shared through/right-turn lane.

The unsignalized intersection of Route 10/202 (Simsbury Road) and Woodford Avenue is located between the intersection with Route 44 and the intersection with Fisher Drive and Mountain View Avenue. The single lane approach of Woodford Ave is stop-controlled and the single lane southbound and exclusive left-turn lane and through lane northbound on Route 10 are not controlled.

The signalized intersection of Route 10/202 (Simsbury Road), Fisher Drive, and Mountain View Avenue is a four-way intersection with Route 10/202 running north/south, Fisher Drive intersecting from the west, and Mountain View Avenue intersecting from the east. Both approaches of Route 10/202 provide an exclusive left-turn lane and a shared through/right-turn lane. Fisher Drive is a single lane approach and Mountain View Ave provides an exclusive left-turn lane and a shared through/right-turn lane.

The intersections of Ensign Drive at Fisher Drive and Ensign Drive at Bickford Drive are T-type intersections with single lane approaches on all legs and are located approximately 750 feet apart. The Ensign Drive approach to Fisher Drive and the Bickford Drive approach to Ensign Drive are stop controlled. All other approaches at both intersections are not controlled.

The intersection of Climax Road and Bickford Drive is a four leg intersection. The stop-controlled approaches of Bickford Drive run east/west, and the uncontrolled approaches of Climax Road run north/south.

The signalized intersection of Route 167 (Bushy Hill Road) and Climax Road is a T-intersection with Route 167 running north/south and Climax Road intersecting from the east. All approaches to the intersection are single lane.

2.5 Traffic Volumes, Speeds and Counts

The greatest potential for traffic impact on the roadway network by the proposed development will occur during the weekday morning, weekday afternoon and Saturday midday peak hours, the periods when commuter/residential and transit related trips are at their highest levels. In order to determine the traffic impact of the proposed development on adjacent street traffic, representatives of Fuss & O'Neill utilized CTDOT approved weekday morning and afternoon peak hour manual turning movement counts from the Avon Park North Traffic Feasibility Study conducted by Fuss & O'Neill in June 2015. Fuss & O'Neill also conducted additional weekday morning, weekday afternoon and Saturday midday peak hour manual turning movement counts in September 2015, July 2016 and March 2018 based on comments from the Connecticut Department of Transportation (CTDOT). Fuss & O'Neill has worked closely with the CTDOT Bureau of Planning to update the network to accurately reflect current conditions.

The traffic count data collected indicates that the weekday morning peak hour of traffic is approximately 7:30 a.m. to 8:30 a.m., the weekday afternoon peak hour is approximately 5:00 p.m. to 6:00 p.m. and the Saturday peak hour is approximately 11:30 a.m. to 12:30 p.m. These peak hours were subsequently analyzed for impacts. The existing traffic volumes for the weekday morning, weekday afternoon, and Saturday peak hours are shown in *Figure No. 2 of Appendix B*.

3 Background Traffic Conditions

3.1 Growth Rate

Upon consultation with the Connecticut Department of Transportation (CTDOT) Bureau of Planning, the 2015 count data was adjusted to the design year of 2020 using an ambient growth rate of 6.25% and the 2016 and 2018 counts were grown by 1% per year to 2020. Growth rates are applied to existing traffic volumes to account for normal traffic growth in the study area.

3.2 Other Developments

Fuss & O'Neill consulted with the Connecticut Department of Transportation (CTDOT) Bureau of Planning in order to identify any other pending or approved developments having site related traffic in the study area. CTDOT advised that the normal traffic growth rates applied in the Background volumes

are sufficient to factor in the volumes from other proposed developments outside the study area. Therefore, no other development traffic was added to the Background volumes.

3.3 Planned Roadway Improvement Projects

Fuss & O'Neill contacted the Connecticut Department of Transportation and the Town of Avon Engineering office to determine if any roadway improvements are planned in the area of the proposed development. No other improvement projects were identified.

4 Proposed Conditions

4.1 Development

Carpionato Group, LLC proposes to construct 1,019,047 square feet of mixed uses, consisting of 519,670 square feet of retail, 45,230 square feet of office, 434,181 square feet (372 units) of residential, and 19,966 square feet of cultural arts. A site location map is shown on *Figure No.1 of Appendix B*. A total of 1,830 new parking spaces will be provided throughout the site.

4.2 Site Access and Circulation

Primary site access is proposed to be provided off of Route 44 and Route 10. Bickford Drive will be redesigned as a boulevard roadway and will be realigned to connect Route 44 and Route 10. On Route 44, Bickford Drive will be located where Climax Road currently is, and this intersection will remain signalized. Climax Road will be realigned to connect into Bickford Drive at a new roundabout in the southwest portion of the site. On Route 10, Bickford Drive will be located where Fisher Drive currently is, and this intersection will remain signalized. Fisher Drive will also be realigned and will intersect Bickford Drive from the north forming a T-intersection in the northeast portion of the site. Fisher Drive will be stop-sign controlled. Ensign Drive will be realigned to connect into Bickford Drive, also at a new roundabout, which will be located in the center of the site.

A new internal road, Main Street, will be constructed approximately 400 feet north of and parallel to Route 44. To the west, Main Street will connect into Bickford Drive at the new roundabout with Climax Road. To the east, Main Street will connect into Ensign Drive and will be stop-sign controlled. Another new internal roadway, North Main Street, will provide connections between Ensign Drive, Main Street, and Bickford Drive in the center of the site.

4.3 Trip Generation

The expected site generated traffic volumes from the proposed mixed-use development were calculated using existing empirical data from the Institute of Transportation Engineers (ITE) publication Trip Generation, 9th and 10th editions. This publication is an industry-accepted resource for determining trip generation. Trip generation was calculated for the Weekday Morning, Weekday Afternoon and Saturday

peak hours using the ITE land use codes 221 “Multifamily Housing (Mid-Rise)”, 710 “General Office Building”, 826 “Specialty Retail Center” (9th edition), and 820 “Shopping Center”. The 9th edition of the Trip Generation Manual was used to calculate the trip generation for the Cultural Arts developments (Specialty Retail Center) as the 10th edition no longer provides information related to this land use code. A table of the peak hour site generated traffic volumes can be seen in *Table 1 of Appendix A*.

The retail land use relies heavily on “pass-by” trips. This type of business typically generates a significant proportion of its traffic volumes by attracting vehicles from the existing traffic already using the transportation network in the vicinity of the site. The amount of traffic which enters and leaves the proposed project not as a primary origin or destination but as an intermediate stop in a trip made for some other purpose is defined as the “pass-by” trip percentage. For Avon Village Center, a 20 percent pass-by credit was incorporated into the retail (shopping center) trip generation to account for diverted trips generated by the existing traffic stream.

In addition, multi-use developments such as Avon Village Center frequently generate trips for patrons who visit multiple businesses within the site. These trips are defined as “internal capture” trips. Based on discussions with the CTDOT Bureau of Planning, due to the proposed mix of complimentary residential, office, retail and cultural arts land uses on the same parcel a 10 percent internal capture credit was incorporated into the trip generation for this site along with a 5 percent transit oriented development credit.

4.4 Trip Distribution

The distribution of traffic entering and exiting the proposed site was applied to the road network based on the existing regional traffic distributions and the layout of the adjacent roadway network. The arrival/departure distributions of traffic and the site generated traffic volumes from the proposed mixed-use development are illustrated in *Figure Nos. 4-13 of Appendix B*.

4.5 Combined Volumes

The total site generated traffic was distributed to the roadway system based on the arrival/departure distributions with the results shown in *Figure No. 14 of Appendix B*. These volumes were then added to the 2020 background condition traffic volumes to yield the 2020 combined traffic volumes shown in *Figure No. 15 of Appendix B*.

5 Analyses

5.1 Crash Analysis

Crash data was gathered from the University of Connecticut Crash Data Repository for the following intersections:

- Route 44 (West Main Street) at Lawrence Ave. & Plaza Drive
- Route 44 (West Main Street) at Climax Road

- Route 44 (West Main Street) at Ensign Drive and Office Park Driveway
- Route 44 (West Main Street) at Woodford Avenue
- Route 44 (East/West Main Street) at Route 10/202 (Simsbury Road) and Old Farms Road
- Route 44 (East Main Street) at Avon Village Drive & Private Drive
- Route 44 (East Main Street) at River Park Drive & Plaza Drive
- Route 44 (East Main Street) at Route 10 (Waterville Road) and Nod Road
- Route 10/202 (Simsbury Road) at Woodford Avenue
- Route 10/202 (Simsbury Road) at Fisher Drive and Mountain View Avenue
- Ensign Drive at Fisher Drive
- Ensign Drive at Bickford Drive
- Climax Road at Bickford Drive
- Route 167 (Bushy Hill Road) at Climax Road

The records were gathered for the most years of available data, from January 1, 2015 through May 17, 2018. A summary of the crash data per intersection is provided in *Table 2 of Appendix A*. A detailed tabulation of the crash data has been provided in *Appendix F*.

The intersection of Route 44 (West Main Street) at Lawrence Avenue experienced an average of less than one crash per year. During the four year span the intersection experienced three angled crashes. Of the three reported crashes at the intersection, two crashes involved property damage only and one crash involved a non-fatal injury.

The intersection of Route 44 (West Main Street) at Climax Road experienced an average of fewer than four crashes per year. During the four year span the intersection experienced four angled crashes, eight front to rear end crashes, and one unknown type of crash. Of the thirteen reported crashes at the intersection, eleven crashes involved property damage only and two crashes involved a non-fatal injury.

The intersection of Route 44 (West Main Street) at Ensign Drive and Office Park Driveway experienced an average of less than three crashes per year. During the four year span, the intersection experienced one angled crash, seven front to rear-end crashes, two sideswipe same direction crashes and one unknown type of crash. Of the eleven reported crashes at the intersection, ten crashes involved property damage only and one crash involved a non-fatal injury.

The intersection of Route 44 (West Main Street) at Woodford Avenue experienced an average of more than two crashes per year. During the four year span, the intersection experienced four angled crashes, and five front to rear-end crashes. Of the nine reported crashes at the intersection, seven crashes involved property damage only and two crashes involved a non-fatal injury.

The intersection of Route 44 (East/West Main Street) at Route 10/202 (Simsbury Road) and Old Farms Road experienced an average of less than five crashes per year. During the four year span the intersection experienced two angled crashes, fourteen front to rear-end crashes, one sideswipe same direction crash and one unknown type of crash. Of the eighteen reported crashes at the intersection, fifteen crashes involved property damage only and three crashes involved a non-fatal injury.

The intersection of Route 44 (East/West Main Street) at Avon Village Drive & Private Drive experienced approximately five crashes per year. During the four year span the intersection experienced five angled crashes, eight front to rear-end crashes, and two sideswipe same direction crashes. Of the fifteen reported crashes at the intersection, ten crashes involved property damage only and five crashes involved a non-fatal injury.

The intersection of Route 44 (East Main Street) at River Park Drive & Plaza Drive experienced approximately two crashes per year. During the four year span the intersection experienced two angled crashes, four front to rear-end crashes, and two sideswipe same direction crashes. Of the eight reported crashes at the intersection, six crashes involved property damage only and two crashes involved a non-fatal injury.

The intersection of Route 44 (East Main Street) at Route 10 (Waterville Road) and Nod Road experienced approximately eight crashes per year. During the four year span the intersection experienced four angled crashes, 23 front to rear-end crashes, four sideswipe same direction crashes and two unknown types of crashes. Of the thirty three reported crashes at the intersection, thirty crashes involved property damage only and three crashes involved a non-fatal injury.

The intersection of 10/202 (Simsbury Road) at Woodford Avenue experienced less than one crashes per year. During the four year span the intersection experienced two angled crashes, and one unknown types of crashes. Of the three reported crashes at the intersection, two crashes involved property damage only and one crash involved a non-fatal injury.

The intersection of Route 10/202 (Simsbury Road) at Fisher Drive and Mountain View Avenue experienced an average of less than one crash per year. During the four year span the intersection experienced only one angled crash and two front to rear-end crash. Of the three reported crashes at the intersection, two crashes involved property damage only and one crash involved a non-fatal injury.

The intersection of Ensign Drive at Fisher Drive experienced an average of less than one crash per year. During the four year span the intersection experienced only one angled crash. The only reported crash at the intersection involved a non-fatal injury.

The intersection of Ensign Drive at Bickford Drive experienced an average of less than one crash per year. During the four year span the intersection experienced only one angled crash. The only reported crash at the intersection involved a non-fatal injury.

The intersection of Climax Road at Bickford Drive experienced an average of less than one crash per year. During the four year span the intersection experienced only two angled crashes. Of the two reported crashes at the intersection, one crash involved property damage only and one crash involved a non-fatal injury.

The intersection of Route 167 (Bushy Hill Road) at Climax Road experienced an average of approximately three crashes per year. During the four year span the intersection experienced eight front to rear-end crashes, and 2 unknown types of crashes. Of the ten reported crashes at the intersection, nine crashes involved property damage only and one crash involved a non-fatal injury.

Most of the crashes reported at the intersections were rear-end type crashes, consistent with what is typically experienced along signalized intersection corridors with volumes similar to those experienced at the study intersections. No abnormal crash patterns or frequencies were identified at most intersections. The intersection of Route 44 (East Main Street) at Route 10 (Waterville Road) and Nod Road experienced an abnormal number of front to rear end crashes on the westbound approach due to the vertical geometry of Route 44 coming down the west side of Avon Mountain. Numerous roadway improvements have been implemented by CTDOT on Route 44 in this area in recent years including a run-a-way ramp constructed on the westbound approach of the intersection which has reduced the risk of serious rear end collisions.

5.2 Intersection Sight Distance Analysis

Intersection sight distances were measured at three intersection approaches along Route 44 and Route 10/202 where intersection improvements are proposed in accordance with criteria set forth in the 2003 CTDOT *Highway Design Manual*. Sight distance is measured from a point 15 feet back from the edge of traveled way at a height of 3.5 feet, the standard height of a driver's eye.

For vehicles turning left on to a four-lane roadway with a design speed of 35 miles per hour, 415 feet of intersection sight distance is required for a passenger car, 525 feet for a single-unit truck and 630 feet for a tractor/semi-trailer. For vehicles turning left on to a two-lane roadway with a design speed of 35 miles per hour, 390 feet of intersection sight distance is required for a passenger car, 490 feet for a single-unit truck and 595 feet for a tractor/semi-trailer.

Sight distance of greater than 650 feet is provided looking to the west from the southbound approach of Bickford Drive at the intersection with Route 44 (West Main Street), providing safe egress for all types of vehicles turning left. Sight distance of 550 feet is provided looking to the east on the southbound Bickford Drive approach at the intersection of Route 44 (West Main Street), providing safe egress for passenger cars and single-unit trucks turning right.

Sight distance of greater than 650 feet is provided looking both west and east from the Ensign Drive southbound approach to the intersection with Route 44 (West Main Street) and the Office Park Driveway, providing safe egress for all types of vehicles turning left and right.

For vehicles turning left and right on to a two-lane roadway with a design speed of 40 miles per hour, 445 feet of intersection sight distance is required for a passenger car, 560 feet for a single-unit truck and 680 feet for a tractor/semi-trailer.

Sight distance of greater than 700 feet is provided looking to the north from the Bickford Drive eastbound approach at the intersection of Route 10/202 (Simsbury Road) and Mountain View Avenue, providing safe egress for all types of vehicles turning right. Sight distance of 275 feet is provided looking to the south from the Bickford Drive eastbound approach at the intersection of Route 10/202 (Simsbury Road) and Mountain View Avenue. In order to provide the sight distance needed for safe egress looking

right (south) it is recommended to clear, trim and maintain vegetation on the southwest corner of the intersection on property owned by Avon Village Center.

5.3 Intersection Capacity Analysis

Capacity analyses for both signalized and unsignalized intersections were conducted using Synchro Professional Software, version 10.0.

In discussing intersection capacity analyses results, two terms are used to describe the operating condition of the road or intersection. These two terms are volume to capacity ratio (v/c) and level of service (LOS).

The v/c ratio is a ratio of the volume of traffic using an intersection to the total capacity of the intersection (the maximum number of vehicles that can utilize the intersection during an hour). The v/c ratio can be used to describe the percentage of capacity utilized by a single intersection movement, a combination of movements, an entire intersection approach, or the intersection as a whole.

LOS is a measure of the delay experienced by stopped vehicles at an intersection. LOS is rated on a scale from A to F, with A describing a condition of very low delay (less than 10 seconds per vehicle), and F describing a condition where delays will exceed 50 seconds per vehicle for unsignalized intersections and 80 seconds per vehicle for signalized intersections. Delay is described as a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Therefore, intersections with longer delay times are less acceptable to most drivers.

LOS is generally used to describe the operation (based on delay time) of both signalized and unsignalized intersections, while v/c ratio is applied to signalized intersections only. These definitions for v/c ratio and LOS, as well as the methodology for conducting signalized and unsignalized intersection capacity analyses, are taken from the “Highway Capacity Manual, 6th Edition” published by the Transportation Research Board.

Using the above referenced methodologies, the weekday morning, Friday afternoon, and Saturday midday peak hour background and combined capacity analyses were conducted at the following intersections:

- Route 44 (West Main Street) at Lawrence Ave. & Plaza Drive
- Route 44 (West Main Street) at Bickford Drive
- Route 44 (West Main Street) at Ensign Drive and Office Park Driveway
- Route 44 (West Main Street) at Woodford Avenue
- Route 44 (East/West Main Street) at Route 10/202 (Simsbury Road) and Old Farms Road
- Route 44 (East Main Street) at Avon Village Drive & Private Drive
- Route 44 (East Main Street) at River Park Drive & Plaza Drive
- Route 44 (East Main Street) at Route 10 (Waterville Road) and Nod Road
- Route 10/202 (Simsbury Road) at Woodford Avenue
- Route 10/202 (Simsbury Road) at Bickford Drive and Mountain View Avenue
- Ensign Drive at Bickford Drive and Retail Drive #3

- Climax Road at Bickford Drive and Main Street
- Route 167 (Bushy Hill Road) at Climax Road

Tables No. 3 & 4 of *Appendix A* presents a summary of the levels of service at the signalized and unsignalized intersections, for both background and combined conditions traffic volume. Copies of the analysis worksheets can be found in *Appendices C, D & E* for the weekday morning, weekday afternoon and Saturday midday peak hours, respectively.

The determination of the traffic impact from the proposed development is made through a comparison of the Background Condition LOS (without the proposed development) versus the Combined Condition LOS (with the proposed development).

The signalized intersection of Route 44 (East Main Street) at Lawrence Ave. & Plaza Drive operates at LOS A under both the background and combined conditions during the weekday morning peak hour. During the weekday afternoon, and Saturday midday peak hours the intersection operates at LOS A under background conditions and LOS B under combined conditions. Capacity analysis reveals that the intersection will continue to operate at an acceptable LOS or operate at the same LOS as under background conditions during each peak hour. No signal timing or off-site improvements are recommended at this intersection under combined improved conditions.

The signalized intersection of Route 44 (West Main Street) at the proposed Bickford Drive operates at LOS B under both background and combined conditions during the weekday morning peak hour. During the weekday afternoon peak hour the intersection operates at LOS B under background conditions and LOS D under combined conditions. The intersection operates at LOS A under background conditions and operates at LOS C under combined conditions during the Saturday midday peak hour. Capacity analysis reveals that there will be no reduction in level of service at this intersection as a result of the proposed development traffic during the weekday morning peak hour. The degradation in LOS for the intersection during the weekday afternoon Saturday midday peak hour is a result of the increase in volume generated from the Avon Village Center development from the north on Bickford Drive turning onto Route 44 and from Route 44 turning onto Bickford Drive. The intersection will continue to operate at an acceptable LOS or operate at the same LOS as under background conditions during each peak hour. However, signal timing optimization and off-site improvements in each peak hour are recommended at this intersection and reflected in the combined improved condition. These signal timing optimization improvements, the addition of a westbound right turn lane on Route 44, and roadway widening on the Bickford Drive southbound approach to accommodate two left turn lanes, and a dedicated right turn lane are recommended to allow for an increase in level of service and for the reduction of queued vehicles. Recommended improvements are outlined in Section 6: Conclusions and Recommendations.

The signalized intersection of Route 44 (West Main Street) at Ensign Drive and Office Park Driveway operates at LOS B under both background and combined conditions during the weekday morning peak hour. During the weekday afternoon peak hour the intersection operates at LOS D under background conditions and LOS E under combined conditions. The intersection operates at LOS A under background conditions and operates at LOS B under combined conditions during the Saturday midday peak hour. Capacity analysis reveals that there will be no reduction in level of service at this intersection

as a result of the proposed development traffic during the weekday morning peak hour. The degradation in LOS for the intersection during the weekday afternoon Saturday midday peak hour is a result of the increase in volume generated from the Avon Village Center development from the north on Ensign Drive turning onto Route 44 and from Route 44 turning onto Ensign Drive. The intersection will continue to operate at an acceptable LOS or operate at the same LOS as under background conditions during each peak hour. However, signal timing optimization and off-site improvements in each peak hour were made to the intersection and reflected in the combined improved condition. These signal timing optimization improvements the addition of opposing left turn lanes on Route 44 and roadway widening on the Ensign Drive southbound approach to accommodate a dedicated left turn lane, a combined through/right turn lane and a dedicated right turn lane are recommended to improve safety for vehicles turning onto Ensign Drive, for an increase in level of service and for a reduction of queued vehicles. Recommended improvements are outlined in Section 6: Conclusions and Recommendations.

At the unsignalized intersection of Route 44 (West Main Street) at Woodford Avenue, the eastbound and westbound approaches operate at LOS A under both background and combined conditions during the weekday morning, weekday afternoon and Saturday midday peak hours. The southbound approach operates at LOS B under both background and combined conditions during the weekday morning peak hour. The southbound approach operates at LOS C under background conditions and LOS D under combined conditions during the weekday afternoon peak hour. The southbound approach operates at LOS B under background conditions and LOS C under combined conditions during the Saturday midday peak hour. Capacity analysis reveals that the intersection will continue to operate acceptably under combined conditions during each peak hour as a result of the proposed development traffic. No off-site improvements are recommended at this intersection under combined improved conditions.

The signalized intersection of Route 44 (East/West Main Street) at Route 10/202 (Simsbury Road) and Old Farms Road operates at LOS F under both the background and combined conditions during the weekday morning and weekday afternoon peak hours. The intersection operates at LOS E under both the background and combined conditions during the Saturday midday peak hour. Although poor LOS exists at this intersection, signal timing adjustments will not result in operational improvements to the intersection. Therefore, no signal timing or off-site improvements are recommended at this intersection under combined improved conditions.

The signalized intersection of Route 44 (East Main Street) at Avon Village Drive & Private Drive operates at LOS A under both the background and combined conditions during the weekday morning, weekday afternoon, and Saturday midday peak hour. Capacity analysis reveals that there will be no reduction in level of service at this intersection as a result of the proposed development traffic during each peak hour. No signal timing or off-site improvements are recommended at this intersection under combined improved conditions.

The signalized intersection of Route 44 (East Main Street) at River Park Drive & Plaza Drive operates at LOS A under both the background and combined conditions during the weekday morning peak hour. During the weekday afternoon peak hour the intersection operates at LOS A under background conditions and operates at LOS B under combined conditions. The intersection operates at LOS A under background conditions and operates at LOS B under combined conditions during the Saturday midday peak hour. Capacity analysis reveals that there will be no reduction in level of service at this

intersection as a result of the proposed development traffic during the weekday morning peak hour. The degradation in LOS for the intersection during the weekday afternoon and Saturday midday peak hours is a result of the increase in volume generated from the Avon Village Center development traveling on Route 44. All intersection approaches will continue to experience an acceptable LOS under both the background and combined condition during the weekday afternoon and Saturday midday peak hours. No signal timing or off-site improvements are recommended at this intersection under combined improved conditions.

The signalized intersection of Route 44 (East Main Street) at Route 10 (Waterville Road) and Nod Road operates at LOS E under both background and combined conditions during the weekday morning peak hour. During the weekday afternoon peak hour the intersection operates at LOS F under both the background and combined conditions. The intersection operates at LOS C under background conditions and operates at LOS D under combined conditions during the Saturday midday peak hour. Capacity analysis reveals that there will be no reduction in level of service at this intersection as a result of the proposed development traffic during the weekday morning and weekday afternoon peak hours. The degradation in LOS for the intersection during the Saturday midday peak hour is a result of the increase in volume generated from the Avon Village Center development from the south on Route 10 and turning left onto Route 44. The intersection will continue to operate at an acceptable LOS or operate at the same LOS as under background conditions during each peak hour. However, signal timing optimization improvements in each peak hour were made to the intersection and reflected in the combined improved condition. These signal timing improvements are recommended to allow for an increase in level of service during the weekday morning peak hour under combined improved conditions. Recommended improvements are outlined in Section 6: Conclusions and Recommendations.

At the unsignalized intersection of Route 10/202 (Simsbury Road) at Woodford Avenue, the eastbound and westbound approach operates at LOS F under both background and combined conditions during the weekday morning and afternoon peak hours while operating at LOS D under background conditions and LOS E under combined conditions during the Saturday midday peak hour. The northbound and southbound Route 10/202 approaches operate at LOS A under both background and combined conditions during the weekday morning, afternoon and Saturday midday peak hours. Capacity analysis reveals that the Route 10 intersection approaches will continue to operate efficiently under combined conditions during each peak hour as a result of the proposed development traffic. No off-site improvements are recommended at this intersection.

The signalized intersection of Route 10/202 (Simsbury Road) at Bickford Drive and Mountain View Avenue operates at LOS D under both background and combined conditions during the weekday morning peak hour. During the weekday afternoon peak hour the intersection operates at LOS C under background conditions and LOS E under combined conditions. The intersection operates at LOS C under both background and combined conditions during the Saturday midday peak hour. Capacity analysis reveals that there will be no reduction in level of service at this intersection as a result of the proposed development traffic during the weekday morning and Saturday midday peak hours. The degradation in LOS for the intersection during the weekday afternoon peak hour is a result of the increase in volume generated from the Avon Village Center development from the north and south on Route 10/202 turning onto Bickford Drive and from Bickford Drive turning onto Route 10/202. The intersection will continue to operate at an acceptable LOS or operate at the same LOS as under

background conditions during the weekday morning and Saturday midday peak hours. However, signal timing optimization and off-site improvements were made to the intersection and reflected in the combined improved condition during the weekday afternoon peak hour. These signal timing optimization improvements, the addition of a southbound right turn lane on Route 10/202 and roadway widening on the Bickford Drive eastbound approach to accommodate a dedicated left turn lane, and a combined through/right turn lane are recommended to allow for an increase in intersection level of service and for the reduction of queued vehicles. Recommended improvements are outlined in Section 6: Conclusions and Recommendations.

At the new unsignalized intersection of Ensign Drive at Bickford Drive and Retail Drive #3, a roundabout is proposed. The eastbound approach operates at LOS A under each peak hour in the combined condition. The westbound approach will operate at LOS A under combined conditions during the weekday morning and Saturday midday peak hours while operating at LOS B under combined conditions during the weekday afternoon peak hour. The northbound and southbound approaches will operate at LOS A under the combined conditions during the weekday morning, afternoon and Saturday midday peak hours. In addition to providing efficient traffic operations, the proposed roundabout will serve as a traffic calming measure within the site, reducing vehicle speeds.

At the new unsignalized intersection of Climax Road at Bickford Drive and Main Street, a roundabout is also proposed. The eastbound Climax Road approach and westbound Main Street approach will operate efficiently at LOS A under all three peak hours in the combined conditions. The northbound Bickford Drive approach also operates at LOS A under combined conditions during the weekday morning, afternoon and Saturday midday peak hours. The southbound approach operates at LOS A under the combined conditions during the weekday morning and Saturday midday peak hours while operating at LOS B under combined conditions during the weekday afternoon peak hour. In addition to providing efficient traffic operations, the proposed roundabout will serve as a traffic calming measure within the site, reducing vehicle speeds.

The signalized intersection of Route 167 (Bushy Hill Road) at Climax Road operates at LOS B under both the background and combined conditions during the weekday morning peak hour. During the weekday afternoon peak hour, the intersection operates at LOS B under background conditions and LOS C under combined conditions. During the Saturday midday peak hours the intersection operates at LOS A under background conditions and LOS B under combined conditions. Capacity analysis reveals that the intersection will continue to operate at an acceptable LOS or operate at the same LOS as under background conditions during each peak hour. No signal timing or off-site improvements are recommended at this intersection under combined improved conditions.

5.4 Queue Analysis

Background and Combined Condition 95th percentile (design) queue lengths were reviewed at each intersection in the study area. The 95th percentile (design) vehicle queue lengths represent the maximum queue lengths that can be expected at each of the critical approach lanes of the study area intersections and is a function of the traffic signal timing, vehicular arrival patterns during the analysis period, and the saturation flow rate. The queue lengths are provided in the Synchro capacity analysis worksheets, which

are located in Appendix C, D, & E. Tables 5, 6, and 7 of Appendix A provide a summary of the queue lengths for the critical lanes at each intersection.

Overall, moderate queueing is experienced at all minor street approaches within the study area under background and combined conditions during the weekday morning, weekday afternoon and Saturday midday peak hours. A queue length increase from background to combined conditions of approximately 5 vehicles or less is observed at all minor street approaches along Route 44, Route 10/202 and Route 167 but adequate storage exists on each minor street approach to accommodate the increases in queue length.

A queue length increase from background to combined conditions of approximately 7 vehicles or less is observed at the Route 44 (East/West Main Street) at Route 10/202 (Simsbury Road) and Old Farms Road southbound left turn lanes during the weekday afternoon peak hour. Although adequate storage does not exist between the two southbound left turn lanes to accommodate 95th percentile queues, adequate storage exists to accommodate 50th percentile queue lengths.

A queue length increase of approximately 8 vehicles is observed at the intersection of Route 44 (West Main Street) at the proposed Bickford Drive southbound left turn movement during the weekday afternoon peak hour. Signal timing optimization and off-site improvements in each peak hour are recommended at this intersection and reflected in the combined improved condition. These signal timing optimization improvements, the addition of a westbound right turn lane on Route 44, and roadway widening on the Bickford Drive southbound approach to accommodate a two left turn lanes, and a dedicated right turn lane are recommended to alleviate queueing at the southbound right turn movement.

A queue length increase of approximately 8 vehicles is observed at the Route 10/202 (Simsbury Road) at Bickford Drive and Mountain View Avenue eastbound left turn movement during the weekday afternoon peak hour. Signal timing optimization and off-site improvements during the weekday afternoon peak hour are recommended at this intersection and reflected in the combined improved condition. These signal timing optimization improvements, the addition of a southbound right turn lane on Route 10/202 and roadway widening on the Bickford Drive eastbound approach to accommodate a dedicated left turn lane, and a combined through/right turn lane are recommended to alleviate queueing on the eastbound left turn movement during the weekday afternoon peak hour.

Overall, moderate to significant queueing is experienced at all major street approaches along Route 44 and Route 10/202 under background and combined conditions during the weekday morning, weekday afternoon and Saturday midday peak hours. A queue length increase from background to combined conditions of approximately 8 vehicles or less is observed at all major street approaches along Route 44, Route 10/202 and Route 167 but adequate storage exists to accommodate the increase in queue length for most approaches.

It is recommended to construct opposing left turn lanes on Route 44 at the intersection with Ensign Drive and Office Park Driveway, a westbound right turn lane on Route 44 at the intersection with the proposed Bickford Drive, and a southbound left turn lane on Route 10/202 at the intersection with Bickford Drive to alleviate queueing along the main corridors at the three most highly used entrance

points to the development. Recommended improvements are outlined in Section 6: Conclusions and Recommendations.

6 Conclusions & Recommendations

The purpose of preparing a Traffic Impact Study is to identify the impact of the proposed development's site generated traffic. The study efforts have indicated that the proposed Avon Village Center mixed-use development will generate 505 new trips (286 entering and 219 exiting) in the weekday morning peak hour, 1,577 new trips (760 entering and 818 exiting) in the weekday afternoon peak hour and 1,795 new trips (927 entering, 870 exiting) during the Saturday midday peak hour.

The full build out of the 1,019,047 square foot Avon Village Center mixed use development will consist of 519,670 square feet of retail, 45,230 square feet of office, 434,181 square feet (372 units) of residential, and 19,966 square feet of cultural arts use. Primary site access is proposed to be provided off of Route 44 and Route 10 via a new roadway that will traverse the site. The realignment of the internal site roadways will result in new signalized intersections on Route 44 with Bickford Drive and with Ensign Drive along the southern portion of the site and a signalized intersection of Route 10 with Bickford Boulevard in the northeast corner of the site. The unsignalized intersections of Route 10 with Woodford Avenue and Route 44 with Woodford Avenue will also provide access to the southeast portion of the site. Climax Road will provide access to the site from the northwest and will be realigned to terminate at a new four-way roundabout intersection with Bickford Drive and the Avon Village Center Main Street.

Capacity analysis revealed that the following intersections will experience little to no change in LOS with the addition of the trips generated by the proposed development and the expected growth rate for the area for weekday morning, weekday afternoon and Saturday midday peak hours:

- Route 44 (West Main Street) at Lawrence Ave. & Plaza Drive
- Route 44 (West Main Street) at Bickford Drive
- Route 44 (West Main Street) at Ensign Drive and Office Park Driveway
- Route 44 (West Main Street) at Woodford Avenue
- Route 44 (East/West Main Street) at Route 10/202 (Simsbury Road) and Old Farms Road
- Route 44 (East Main Street) at Avon Village Drive & Private Drive
- Route 44 (East Main Street) at River Park Drive & Plaza Drive
- Route 44 (East Main Street) at Route 10 (Waterville Road) and Nod Road
- Route 10/202 (Simsbury Road) at Woodford Avenue
- Route 10/202 (Simsbury Road) at Bickford Drive and Mountain View Avenue
- Ensign Drive at Bickford Drive and Retail Drive #3
- Climax Road at Bickford Drive and Main Street
- Route 167 (Bushy Hill Road) at Climax Road

The intersections of Route 44 (West Main Street) at Ensign Drive and Office Park Driveway, Route 44 (West Main Street) at Bickford Drive, and Route 10/202 (Simsbury Road) at Bickford Drive and Mountain View Avenue will experience a more significant LOS degradation with peak hour delays during the weekday afternoon peak hour. However, the roadway improvements and signal timing

revisions outlined below will reduce delay, manage queuing, and allow the intersections to operate at acceptable levels of service.

It should be noted that the addition of the trips generated by the proposed development will result in no significant change in existing queues at most intersection approach lanes on the State and local roadway network. Queue lengths for critical approach movements at all study intersections will not experience significant increases and are accommodated within the existing available storage provided on most approaches. Queues that are expected to overflow the provided storage are shown to already do so in the background condition. Roadway improvements and signal timing revisions outlined below are recommended to alleviate queuing along the Route 44 and Route 10/202 intersections at the three primary entrance points to the development.

A review of crash data provided by the University of Connecticut Crash Data Repository indicated that there were no abnormal crash frequencies and crash patterns at most intersections in the study area given the volume of traffic and presence of signalized arterial roadways within the study area. No fatalities were reported in the study area during the period analyzed. The intersection of Route 44 (East Main Street) at Route 10 (Waterville Road) and Nod Road did experience an abnormal number of front to rear end crashes on the westbound approach due to the vertical geometry of Route 44 coming down the west side of Avon Mountain. Numerous roadway improvements have been implemented by CTDOT on Route 44 in this area in recent years including a run-a-way ramp constructed on the westbound approach of the intersection which has reduced the risk of serious rear end collisions.

A review of proposed intersection sight distances at the intersections of Route 44 (West Main Street) at Bickford Drive, Route 44 (West Main Street) at Ensign Drive and Office Park Driveway, and Route 10/202 (Simsbury Road) at Bickford Drive and Mountain View Avenue confirms that the necessary sight distances can or will be satisfied at each exit from the development, providing safe egress for all types of vehicles turning left and right out of the development. Intersection sight distance requirements are not currently met for vehicles looking to the south on the Bickford Drive eastbound approach to the intersection of Route 10/202 (Simsbury Road) but will be satisfied upon the recommended clearing and trimming of vegetation on the west side of Route 10/202.

Based on the results of this study, the following recommendations should be implemented to facilitate safe and efficient movement of traffic within the study area:

- Construct a new boulevard roadway, Bickford Drive, connecting Routes 44 and Route 10 and providing primary access to the site. Realign Climax Road to terminate on Bickford Drive opposite the new Avon Village Center “Main Street” at a new four-way roundabout intersection.
- Route 44 (West Main Street) at Bickford Drive
 - Optimize signal timing during each peak hour
 - Widen Route 44 and construct a 100 foot westbound right turn storage lane
 - Widen Bickford Drive to construct two left turn lanes, and a dedicated right turn lane on the southbound approach
- Route 44 (West Main Street) at Ensign Drive and Office Park Drive
 - Optimize signal timing during each peak hour

- Construct a 100 foot eastbound left turn storage lane
 - Construct a 50 foot westbound left turn storage lane
 - Widen Ensign Drive to construct a dedicated left turn lane, a combined through/right turn lane and a dedicated right turn lane on the southbound approach
- Route 10/202 (Simsbury Road) at Bickford Drive and Mountain View Avenue Driveway
 - Optimize signal timing during the weekday afternoon peak hour
 - Widen Route 10/202 to construct a 100 foot southbound right turn lane
 - Widen Bickford Drive to construct a dedicated left turn lane, and a combined through/right turn lane on the eastbound approach
- Ensign Drive at Bickford Drive and Retail Drive #3 improvements
 - Realign existing intersection to construct a four-way roundabout with the proposed Retail Drive #3
- Climax Road at Bickford Drive and Main Street
 - Realign existing Climax Drive and Bickford Drive intersection to construct a four-way roundabout with the proposed Avon Village Center Main Street
- Clear, trim and maintain vegetation at the southwest corner of Route 10/202 (Simsbury Road) at Bickford Drive and Mountain View Avenue to provide the required intersection sight distance looking south from the Bickford Drive eastbound approach.

Based on the results of the foregoing analysis, it is the professional opinion of Fuss & O'Neill, Inc. that the recommendations outlined above will safely and efficiently mitigate the traffic generated by the proposed development and will result in satisfactory traffic operations within the study area.

Appendix A

Tables

Table 1

**Peak Hour Site Generated Traffic Volumes
Avon Village Center
Avon, Connecticut**

Land Use	Trip Generation		
	Trips Entering	Trips Exiting	Total Trips
372 Residential Units			
Morning Peak Hour	35	99	134
Afternoon Peak Hour	100	64	164
Saturday Peak Hour	80	84	164
45,230 SF of General Office			
Morning Peak Hour	59	10	69
Afternoon Peak Hour	9	45	54
Saturday Peak Hour	13	11	24
19,996 SF of Specialty Retail Center (Cultural Arts)			
Morning Peak Hour	0	0	0
Afternoon Peak Hour	24	30	54
Saturday Peak Hour	24	30	54
519,670 SF of Shopping Center (Retail)			
Morning Peak Hour	303	185	488
Afternoon Peak Hour	950	1,030	1,980
Saturday Peak Hour	1,216	1,123	2,339
Transit/Internal Capture Credit (-15%)			
Morning Peak Hour	(-59)	(-44)	(-103)
Afternoon Peak Hour	(-162)	(-175)	(-337)
Saturday Peak Hour	(-200)	(-187)	(-387)
Shopping Center (Retail) Pass-By Credit (-20%)			
Morning Peak Hour	(-52)	(-31)	(-83)
Afternoon Peak Hour	(-162)	(-175)	(-337)
Saturday Peak Hour	(-207)	(-191)	(-398)
Total			
Morning Peak Hour	286	219	505
Afternoon Peak Hour	759	819	1,578
Saturday Peak Hour	926	870	1,796

Note: Trip generation based on Rate per Land Use Codes 221 "Multifamily Housing (Mid-Rise)", 710 "General Office Building", 826 "Specialty Retail Center" (9th edition), and 820 "Shopping Center". as published in *Trip Generation*, 9th and 10th Editions.



Table 2

CRASH DATA SUMMARY - 1/1/2015 - 5/17/2018 STUDY AREA: AVON VILLAGE CENTER AVON, CONNECTICUT							
Criteria	Rte. 44 at Lawrence Ave.	Rte. 44 at Climax Rd.	Rte. 44 at Ensign Dr.	Rte. 44 at Woodford Ave.	Rte. 44 at Rte. 10/202 and Old Farms Rd.	Rte. 44 at Avon Village Dr.	Rte. 44 at River Park Dr.
YEAR							
2015	1	5	3	1	4	1	1
2016	2	2	5	1	5	6	5
2017	0	5	1	7	9	5	2
2018	0	1	2	0	0	3	0
Total	3	13	11	9	18	15	8
Avg. No. of Crashes/ Year	1	3	3	2	5	4	2
TYPE							
Angle	3	4	1	4	2	5	2
Front to Rear	-	8	7	5	14	8	4
Sideswipe-Same	-	-	2	-	1	2	2
Unknown/Other	-	1	1	-	1	-	-
Total	3	13	11	9	18	15	8
SEVERITY							
Property Damage Only	2	11	10	7	15	10	6
Non-fatal Injury	1	2	1	2	3	5	2

*Values indicated are number of crashes within 200 feet of each intersection during time period shown.

Data provided by the Connecticut Department of Transportation via the UConn repository.

...CONTINUED CRASH DATA SUMMARY - 1/1/2015 - 5/17/2018 STUDY AREA: AVON VILLAGE CENTER AVON, CONNECTICUT							
Criteria	Rte. 44 at Rte. 10 and Nod Rd.	Rte. 10/202 at Woodford Ave.	Rte. 10/202 at Fisher Dr. and Mountain View Ave.	Ensign Dr. at Fisher Dr.	Ensign Dr. at Bickford Dr.	Climax Rd. at Bickford Dr.	Rte. 167 at Climax Rd.
YEAR							
2015	8	0	2	1	0	0	3
2016	9	2	0	0	1	1	3
2017	14	0	1	0	0	1	4
2018	2	1	0	0	0	0	0
Total	33	3	3	1	1	2	10
Avg. No. of Crashes/ Year	8	1	1	1	1	1	3
TYPE							
Angle	4	2	1	1	1	2	0
Front to Rear	23	-	2	-	-	-	8
Sideswipe-Same	4	-	-	-	-	-	0
Unknown/Other	2	1	-	-	-	-	2
Total	33	3	3	1	1	2	10
SEVERITY							
Property Damage Only	30	2	2	0	0	1	9
Non-fatal Injury	3	1	1	1	1	1	1

*Values indicated are number of crashes within 200 feet of each intersection during time period shown.

Data provided by the Connecticut Department of Transportation via the UConn repository.

Table 3
Signalized Intersection Level of Service Summary
Avon Village Center
Avon, Connecticut

Signalized Intersections	Weekday Morning			Weekday Afternoon			Saturday Midday		
	Peak Hour			Peak Hour			Peak Hour		
	Background	Combined	Combined Improved	Background	Combined	Combined Improved	Background	Combined	Combined Improved
Rte. 44 at Rte. 10 and Nod Road	1.03/LOS E*	0.99/LOS E	0.99/LOS D	1.12/LOS F	1.23/LOS F	1.23/LOS F	0.73/LOS C	0.89/LOS D	0.89/LOS D
<i>EB Approach</i>	LOS E	LOS D	LOS D	LOS D	LOS D	LOS D	LOS C	LOS C	LOS C
<i>WB Approach</i>	LOS D	LOS C	LOS D	LOS F	LOS F	LOS F	LOS C	LOS D	LOS D
<i>NB Approach</i>	LOS F	LOS F	LOS E	LOS F	LOS F	LOS F	LOS E	LOS F	LOS F
<i>SB Approach</i>	LOS F	LOS F	LOS F	LOS F	LOS F	LOS F	LOS D	LOS D	LOS D
Rte. 44 at River Park Drive & Plaza Drive	0.76/LOS A	0.77/LOS A	-	0.75/LOS A	0.88/LOS B	-	0.51/LOS A	0.67/LOS B	-
<i>EB Approach</i>	LOS A	LOS A	-	LOS A	LOS A	-	LOS A	LOS A	-
<i>WB Approach</i>	LOS A	LOS A	-	LOS B	LOS B	-	LOS A	LOS B	-
<i>NB Approach</i>	LOS E	LOS E	-	LOS D	LOS D	-	LOS C	LOS C	-
<i>SB Approach</i>	LOS E	LOS E	-	LOS D	LOS D	-	LOS C	LOS C	-

*Values indicated are intersection v/c Ratio/LOS

Signalized Intersections	Weekday Morning			Weekday Afternoon			Saturday Midday		
	Peak Hour			Peak Hour			Peak Hour		
	Background	Combined	Combined Improved	Background	Combined	Combined Improved	Background	Combined	Combined Improved
Rte. 44 at Avon Village Drive & Private Drive	0.84/LOS A	0.86/LOS A	-	0.80/LOS A	0.93/LOS A	-	0.56/LOS A	0.73/LOS A	-
<i>EB Approach</i>	LOS A	LOS A	-	LOS A	LOS A	-	LOS A	LOS A	-
<i>WB Approach</i>	LOS A	LOS A	-	LOS A	LOS A	-	LOS A	LOS A	-
<i>NB Approach</i>	LOS E	LOS E	-	LOS E	LOS E	-	LOS D	LOS D	-
<i>SB Approach</i>	LOS E	LOS D	-	LOS D	LOS D	-	LOS C	LOS C	-
Rte. 44 at Rte. 10/202 and Old Farms Rd.	1.06/LOS F	1.10/LOS F	-	1.28/LOS F	1.38/LOS F	-	0.83/LOS E	1.0/LOS E	-
<i>EB Approach</i>	LOS F	LOS F	-	LOS E	LOS E	-	LOS E	LOS F	-
<i>WB Approach</i>	LOS D	LOS D	-	LOS F	LOS F	-	LOS D	LOS E	-
<i>NB Approach</i>	LOS F	LOS F	-	LOS D	LOS E	-	LOS E	LOS E	-
<i>SB Approach</i>	LOS F	LOS F	-	LOS F	LOS F	-	LOS E	LOS F	-
Rte. 44 at Ensign Dr. and Office Park Driveway	0.72/LOS B	0.91/LOS B	0.80/LOS B	0.97/LOS D	1.04/LOS E	1.01/LOS D	0.49/LOS A	0.78/LOS B	0.99/LOS C
<i>EB Approach</i>	LOS A	LOS B	LOS A	LOS A	LOS E	LOS A	LOS A	LOS B	LOS A
<i>WB Approach</i>	LOS B	LOS B	LOS B	LOS E	LOS D	LOS E	LOS A	LOS B	LOS C
<i>NB Approach</i>	LOS D	LOS D	LOS D	LOS C	LOS D	LOS D	LOS D	LOS C	LOS C
<i>SB Approach</i>	LOS D	LOS D	LOS D	LOS C	LOS E	LOS E	LOS D	LOS D	LOS E

*Values indicated are intersection v/c Ratio/LOS

Signalized Intersections	Weekday Morning			Weekday Afternoon			Saturday Midday		
	Peak Hour			Peak Hour			Peak Hour		
	Background	Combined	Combined Improved	Background	Combined	Combined Improved	Background	Combined	Combined Improved
Rte. 44 at Bickford Drive	0.69/LOS B	0.67/LOS B	0.66/LOS B	0.75/LOS B	1.01/LOS D	0.87/LOS B	0.46/LOS A	0.71/LOS C	0.67/LOS B
<i>EB Approach</i>	LOS A	LOS A	LOS A	LOS A	LOS C	LOS B	LOS A	LOS B	LOS B
<i>WB Approach</i>	LOS B	LOS B	LOS B	LOS B	LOS D	LOS B	LOS A	LOS C	LOS B
<i>SB Approach</i>	LOS D	LOS D	LOS D	LOS D	LOS E	LOS D	LOS D	LOS D	LOS D
Rte. 44 at Lawrence Ave. & Plaza Dr.	0.68/LOS A	0.70/LOS A	-	0.72/LOS A	0.78/LOS B	-	0.53/LOS A	0.63/LOS B	-
<i>EB Approach</i>	LOS B	LOS B	-	LOS B	LOS B	-	LOS B	LOS B	-
<i>WB Approach</i>	LOS A	LOS A	-	LOS A	LOS A	-	LOS A	LOS A	-
<i>NB Approach</i>	LOS D	LOS D	-	LOS D	LOS D	-	LOS D	LOS D	-
<i>SB Approach</i>	LOS D	LOS D	-	LOS D	LOS D	-	LOS D	LOS D	-
Rte. 167 at Climax Rd.	0.44/LOS B	0.54/LOS B	-	0.60/LOS B	0.77/LOS C	-	0.43/LOS A	0.67/LOS B	-
<i>WB Approach</i>	LOS D	LOS C	-	LOS D	LOS E	-	LOS D	LOS D	-
<i>NB Approach</i>	LOS A	LOS A	-	LOS B	LOS B	-	LOS A	LOS B	-
<i>SB Approach</i>	LOS A	LOS A	-	LOS A	LOS B	-	LOS A	LOS A	-

*Values indicated are intersection v/c Ratio/LOS

Signalized Intersections	Weekday Morning			Weekday Afternoon			Saturday Midday		
	Peak Hour			Peak Hour			Peak Hour		
	Background	Combined	Combined Improved	Background	Combined	Combined Improved	Background	Combined	Combined Improved
Rte. 10/202 at Bickford Dr. & Mountain View Ave.	0.89/LOS D	0.88/LOS D	0.88/LOS D	0.96/LOS C	1.15/LOS E	0.95/LOS C	0.54/LOS C	0.74/LOS C	0.61/LOS B
<i>EB Approach</i>	LOS C	LOS C	LOS C	LOS F	LOS F	LOS D	LOS B	LOS C	LOS C
<i>WB Approach</i>	LOS C	LOS C	LOS C	LOS C	LOS D	LOS C	LOS B	LOS C	LOS B
<i>NB Approach</i>	LOS D	LOS E	LOS E	LOS A	LOS C	LOS C	LOS C	LOS B	LOS B
<i>SB Approach</i>	LOS C	LOS C	LOS B	LOS D	LOS F	LOS D	LOS C	LOS C	LOS B

*Values indicated are intersection v/c Ratio/LOS

Table 4

**Unsignalized Intersection Level of Service Summary
Avon Village Center
Avon, Connecticut**

Unsignalized Intersections	Weekday Morning			Weekday Afternoon			Saturday Midday		
	Peak Hour			Peak Hour			Peak Hour		
	Background	Combined	Combined Improved	Background	Combined	Combined Improved	Background	Combined	Combined Improved
Rte. 44 at Woodford Ave.									
<i>EB Approach</i>	LOS A	LOS A	-	LOS A	LOS A	-	LOS A	LOS A	-
<i>WB Approach</i>	LOS A	LOS A	-	LOS A	LOS A	-	LOS A	LOS A	-
<i>SB Approach</i>	LOS B	LOS B	-	LOS C	LOS D	-	LOS B	LOS C	-
Climax Rd. at Bickford Dr. and Main Street (Roundabout)									
<i>EB Approach</i>	-	LOS A	-	-	LOS A	-	-	LOS A	-
<i>WB Approach</i>	-	LOS A	-	-	LOS A	-	-	LOS A	-
<i>NB Approach</i>	-	LOS A	-	-	LOS A	-	-	LOS A	-
<i>SB Approach</i>	-	LOS A	-	-	LOS B	-	-	LOS A	-

*Values indicated are approach LOS

Unsignalized Intersections	Weekday Morning			Weekday Afternoon			Saturday Midday		
	Peak Hour			Peak Hour			Peak Hour		
	Background	Combined	Combined Improved	Background	Combined	Combined Improved	Background	Combined	Combined Improved
Ensign Dr. at Bickford Dr. & Retail Drive #3 (Roundabout)									
<i>EB Approach</i>	-	LOS A	-	-	LOS A	-	-	LOS A	-
<i>WB Approach</i>	-	LOS A	-	-	LOS B	-	-	LOS A	-
<i>NB Approach</i>	-	LOS A	-	-	LOS A	-	-	LOS A	-
<i>SB Approach</i>	-	LOS A	-	-	LOS A	-	-	LOS A	-
Rte. 10/202 at Woodford Ave.									
<i>EB Approach</i>	LOS F	LOS F	-	LOS F	LOS F	-	LOS D	LOS E	-
<i>WB Approach</i>	LOS F	LOS F	-	LOS F	LOS F	-	LOS D	LOS E	-
<i>NB Approach</i>	LOS A	LOS A	-	LOS A	LOS A	-	LOS A	LOS A	-
<i>SB Approach</i>	LOS A	LOS A	-	LOS A	LOS A	-	LOS A	LOS A	-

*Values indicated are approach LOS

Table 5

**Weekday Morning Peak Hour Queue Length Summary
Avon Village Center
Avon, Connecticut**

Intersection	Approach Lane	2020 Background Queue	2020 Combined Queue	2020 Combined Improved Queue	Available Storage
Route 44 (West Main Street) at Route 10 (Waterville Road) and Nod Road	EB Left Turn	150 Feet	155 Feet	155 Feet	285 Feet
	EB Through	1020 Feet	1100 Feet	1100 Feet	>1500 Feet
	EB Right Turn	290 Feet	310 Feet	310 Feet	>400 Feet
	WB Left Turn	160 Feet	145 Feet	165 Feet	300 Feet
	WB Through/Right Turn	440 Feet	500 Feet	500 Feet	>1000 Feet
	NB Left Turn	275 Feet	325 Feet	305 Feet	325 Feet
	NB Through/Right Turn	590 Feet	635 Feet	635 Feet	>800 Feet
	SB Left Turn	180 Feet	195 Feet	180 Feet	275 Feet
	SB Through	410 Feet	425 Feet	425 Feet	>600 Feet
	SB Right Turn	40 Feet	35 Feet	35 Feet	275 Feet
Route 44 (West Main Street) at River Park Drive & Plaza Drive	EB Left Turn	5 Feet	5 Feet	-	150 Feet
	EB Thru/Right Turn	673 Feet	710 Feet	-	725 Feet
	WB Left Turn	5 Feet	5 Feet	-	130 Feet
	WB Thru/Right Turn	220 Feet	235 Feet	-	>1000 Feet
	NB Left Turn	10 Feet	10 Feet	-	125 Feet
	NB Thru/Right Turn	0 Feet	0 Feet	-	125 Feet
	SB Left Turn	10 Feet	10 Feet	-	50 Feet
	SB Thru/Right Turn	0 Feet	0 Feet	-	50 Feet
Route 44 (East Main Street) at Avon Village Drive & Private Drive	EB Approach	595 Feet	655 Feet	-	660 Feet
	WB Approach	155 Feet	160 Feet	-	600 Feet
	NB Thru/Left Turn	40 Feet	40 Feet	-	100 Feet
	NB Right Turn	0 Feet	0 Feet	-	100 Feet
	SB Approach	0 Feet	0 Feet	-	100 Feet

Intersection	Approach Lane	2020 Background Queue	2020 Combined Queue	2020 Combined Improved Queue	Available Storage
Route 44 (East/West Main Street) at Route 10/202 (Simsbury Road) and Old Farms Road	EB Left Turn	385 Feet	385 Feet	-	300 Feet
	EB Through/Right Turn	1090 Feet	1175 Feet	-	1025 Feet
	WB Left Turn	215 Feet	215 Feet	-	300 Feet
	WB Through/Right Turn	610 Feet	740 Feet	-	660 Feet
	NB Through/Left Turn	785 Feet	820 Feet	-	>1000 Feet
	NB Right Turn	485 Feet	485 Feet	-	150 Feet
	SB Left Turn	300 Feet	335 Feet	-	300 Feet
	SB Through/Right Turn	505 Feet	515 Feet	-	>700 Feet
Route 44 (West Main Street) at Woodford Avenue	EB Through/Left Turn	5 Feet	5 Feet	-	50 Feet
	EB Through	0 Feet	0 Feet	-	
	WB Through	0 Feet	0 Feet	-	
	WB Through/Right Turn	0 Feet	0 Feet	-	
	SB Approach	10 Feet	10 Feet	-	50 Feet
Route 44 (West Main Street) at Ensign Drive and Office Park Driveway	EB Left Turn	N/A	N/A	10 Feet	100 Feet
	EB Through/Right Turn	250 Feet	270 Feet	120 Feet	>300 Feet
	WB Left Turn	N/A	N/A	60 Feet	50 Feet
	WB Through/Right	215 Feet	295 Feet	185 Feet	>500 Feet
	NB Approach	0 Feet	0 Feet	0 Feet	100 Feet
	SB Through/Left Turn	30 Feet	80 Feet	80 Feet	150 Feet
	SB Right Turn	5 Feet	20 Feet	20 Feet	80 Feet
Route 44 (West Main Street) at Bickford Drive	EB Left Turn	15 Feet	30 Feet	30 Feet	125 Feet
	EB Through	120 Feet	135 Feet	135 Feet	>400 Feet
	WB Through	260 Feet	280 Feet	145 Feet	>400 Feet
	WB Right Turn	N/A	N/A	35 Feet	100 Feet
	SB Left Turn	130 Feet	80 Feet	80 Feet	215 Feet
	SB Right Turn	30 Feet	45 Feet	45 Feet	300 Feet
Route 44 (West Main Street) at Lawrence Ave. & Plaza Dive	EB Approach	535 Feet	570 Feet	-	>600 Feet
	WB Approach	60 Feet	55 Feet	-	>600 Feet
	NB Through/Left Turn	20 Feet	20 Feet	-	50 Feet
	NB Right Turn	0 Feet	0 Feet	-	50 Feet
	SB Approach	30 Feet	30 Feet	-	>100 Feet

Intersection	Approach Lane	2020 Background Queue	2020 Combined Queue	2020 Combined Improved Queue	Available Storage
Climax Road at Bickford Drive and Main Street	EB Approach	5 Feet	0 Feet	-	
	WB Approach	5 Feet	0 Feet	-	
	NB Approach	5 Feet	0 Feet	-	
	SB Approach	5 Feet	0 Feet	-	
Route 167 (Bushy Hill Road) at Climax Road	WB Left Turn	130 Feet	145 Feet	-	>300 Feet
	NB Through/Right Turn	250 Feet	265 Feet	-	>300 Feet
	SB Through/Left Turn	100 Feet	130 Feet	-	>300 Feet
Ensign Drive at Bickford Drive and Retail Drive #3	EB Approach	20 Feet	0 Feet	-	
	NB Through/Left Turn	0 Feet	0 Feet	-	
	SB Through/Right Turn	0 Feet	0 Feet	-	
Route 10/202 (Simsbury Road) at Bickford Drive and Mountain View Avenue	EB Left Turn	225 Feet	210 Feet	210 Feet	200 Feet
	EB Through/Right Turn	N/A	55 Feet	55 Feet	>200 Feet
	WB Left Turn	55 Feet	55 Feet	55 Feet	75 Feet
	WB Through/Right Turn	35 Feet	35 Feet	35 Feet	75 Feet
	NB Left Turn	10 Feet	25 Feet	25 Feet	100 Feet
	NB Through/Right Turn	910 Feet	910 Feet	910 Feet	>1000 Feet
	SB Left Turn	25 Feet	25 Feet	25 Feet	100 Feet
	SB Through	640 Feet	700 Feet	445 Feet	>800 Feet
	SB Right Turn	N/A	N/A	50 Feet	100 Feet
Route 10/202 (Simsbury Road) at Woodford Avenue	EB Approach	85 Feet	105 Feet	-	>150 Feet
	WB Approach	5 Feet	5 Feet	-	>100 Feet
	NB Approach	5 Feet	5 Feet	-	>100 Feet
	SB Approach	5 Feet	5 Feet	-	>100 Feet

NOTE: Values indicated represent 95th percentile (design) vehicle queue lengths. Values are rounded to the nearest 5 feet

Table 6
Weekday Afternoon Peak Hour Queue Length Summary
Avon Village Center
Avon, Connecticut

Intersection	Approach Lane	2020 Background Queue	2020 Combined Queue	2020 Combined Improved Queue	Available Storage
Route 44 (West Main Street) at Route 10 (Waterville Road) and Nod Road	EB Left Turn	315 Feet	355 Feet	285 Feet	285 Feet
	EB Through	400 Feet	620 Feet	620 Feet	>1500 Feet
	EB Right Turn	305 Feet	450 Feet	480 Feet	>400 Feet
	WB Left Turn	225 Feet	255 Feet	255 Feet	300 Feet
	WB Through/Right Turn	1065 Feet	1400 Feet	1480 Feet	>1000 Feet
	NB Left Turn	350 Feet	455 Feet	455 Feet	325 Feet
	NB Through/Right Turn	445 Feet	465 Feet	465 Feet	>800 Feet
	SB Left Turn	200 Feet	210 Feet	210 Feet	275 Feet
	SB Through	525 Feet	545 Feet	545 Feet	>600 Feet
	SB Right Turn	60 Feet	70 Feet	65 Feet	275 Feet
Route 44 (West Main Street) at River Park Drive & Plaza Drive	EB Left Turn	0 Feet	5 Feet	-	150 Feet
	EB Thru/Right Turn	15 Feet	195 Feet	-	725 Feet
	WB Left Turn	10 Feet	10 Feet	-	130 Feet
	WB Thru/Right Turn	745 Feet	1245 Feet	-	>1000 Feet
	NB Left Turn	60 Feet	60 Feet	-	125 Feet
	NB Thru/Right Turn	0 Feet	0 Feet	-	125 Feet
	SB Left Turn	35 Feet	35 Feet	-	50 Feet
	SB Thru/Right Turn	0 Feet	0 Feet	-	50 Feet
Route 44 (East Main Street) at Avon Village Drive & Private Drive	EB Approach	45 Feet	575 Feet	-	660 Feet
	WB Approach	365 Feet	1180 Feet	-	600 Feet
	NB Thru/Left Turn	105 Feet	105 Feet	-	100 Feet
	NB Right Turn	0 Feet	0 Feet	-	100 Feet
	SB Approach	45 Feet	45 Feet	-	100 Feet

Intersection	Approach Lane	2020 Background Queue	2020 Combined Queue	2020 Combined Improved Queue	Available Storage
Route 44 (East/West Main Street) at Route 10/202 (Simsbury Road) and Old Farms Road	EB Left Turn	360 Feet	500 Feet	-	300 Feet
	EB Through/Right Turn	520 Feet	835 Feet	-	1025 Feet
	WB Left Turn	385 Feet	470 Feet	-	300 Feet
	WB Through/Right Turn	1245 Feet	1650 Feet	-	660 Feet
	NB Through/Left Turn	350 Feet	600 Feet	-	>1000 Feet
	NB Right Turn	130 Feet	180 Feet	-	150 Feet
	SB Left Turn	290 Feet	470 Feet	-	300 Feet
	SB Through/Right Turn	650 Feet	835 Feet	-	>700 Feet
Route 44 (West Main Street) at Woodford Avenue	EB Through/Left Turn	10 Feet	15 Feet	-	50 Feet
	EB Through	0 Feet	0 Feet	-	
	WB Through	0 Feet	0 Feet	-	
	WB Through/Right Turn	0 Feet	0 Feet	-	
	SB Approach	20 Feet	40 Feet	-	50 Feet
Route 44 (West Main Street) at Ensign Drive and Office Park Driveway	EB Left Turn	N/A	N/A	100 Feet	100 Feet
	EB Through/Right Turn	115 Feet	270 Feet	10 Feet	>300 Feet
	WB Left Turn	N/A	N/A	10 Feet	50 Feet
	WB Through/Right	595 Feet	890 Feet	930 Feet	>500 Feet
	NB Approach	60 Feet	95 Feet	100 Feet	100 Feet
	SB Through/Left Turn	40 Feet	215 Feet	220 Feet	150 Feet
	SB Right Turn	25 Feet	115 Feet	60 Feet	80 Feet
Route 44 (West Main Street) at Bickford Drive	EB Left Turn	85 Feet	270 Feet	140 Feet	135 Feet
	EB Through	140 Feet	5 Feet	410 Feet	>400 Feet
	WB Through	805 Feet	805 Feet	830 Feet	>400 Feet
	WB Right Turn	N/A	N/A	65 Feet	100 Feet
	SB Left Turn	75 Feet	110 Feet	105 Feet	215 Feet
	SB Right Turn	105 Feet	320 Feet	120 Feet	300 Feet
Route 44 (West Main Street) at Lawrence Ave. & Plaza Dive	EB Approach	310 Feet	390 Feet	-	>600 Feet
	WB Approach	5 Feet	175 Feet	-	>600 Feet
	NB Through/Left Turn	35 Feet	35 Feet	-	50 Feet
	NB Right Turn	0 Feet	0 Feet	-	50 Feet
	SB Approach	10 Feet	10 Feet	-	>100 Feet

Intersection	Approach Lane	2020 Background Queue	2020 Combined Queue	2020 Combined Improved Queue	Available Storage
Climax Road at Bickford Drive and Main Street	EB Approach	5 Feet	0 Feet	-	
	WB Approach	45 Feet	0 Feet	-	
	NB Approach	5 Feet	0 Feet	-	
	SB Approach	5 Feet	0 Feet	-	
Route 167 (Bushy Hill Road) at Climax Road	WB Left Turn	170 Feet	300 Feet	-	>300 Feet
	NB Through/Right Turn	345 Feet	345 Feet	-	>300 Feet
	SB Through/Left Turn	150 Feet	195 Feet	-	>300 Feet
Ensign Drive at Bickford Drive and Retail Drive #3	EB Approach	15 Feet	0 Feet	-	
	NB Through/Left Turn	5 Feet	0 Feet	-	
	SB Through/Right Turn	0 Feet	0 Feet	-	
Route 10/202 (Simsbury Road) at Bickford Drive and Mountain View Avenue	EB Left Turn	255 Feet	460 Feet	305 Feet	200 Feet
	EB Through/Right Turn	N/A	70 Feet	55 Feet	>200 Feet
	WB Left Turn	105 Feet	130 Feet	90 Feet	75 Feet
	WB Through/Right Turn	80 Feet	95 Feet	65 Feet	75 Feet
	NB Left Turn	10 Feet	115 Feet	80 Feet	100 Feet
	NB Through/Right Turn	325 Feet	440 Feet	465 Feet	>1000 Feet
	SB Left Turn	10 Feet	15 Feet	15 Feet	100 Feet
	SB Through	995 Feet	1500 Feet	890 Feet	>800 Feet
	SB Right Turn	N/A	N/A	115 Feet	100 Feet
Route 10/202 (Simsbury Road) at Woodford Avenue	EB Approach	150 Feet	180 Feet	-	>150 Feet
	WB Approach	25 Feet	30 Feet	-	>100 Feet
	NB Approach	5 Feet	5 Feet	-	>100 Feet
	SB Approach	0 Feet	0 Feet	-	>100 Feet

NOTE: Values indicated represent 95th percentile (design) vehicle queue lengths. Values are rounded to the nearest 5 feet

Table 7
Saturday Midday Peak Hour Queue Length Summary
Avon Village Center
Avon, Connecticut

Intersection	Approach Lane	2020 Background Queue	2020 Combined Queue	2020 Combined Improved Queue	Available Storage
Route 44 (West Main Street) at Route 10 (Waterville Road) and Nod Road	EB Left Turn	110 Feet	170 Feet	170 Feet	285 Feet
	EB Through	250 Feet	395 Feet	395 Feet	>1500 Feet
	EB Right Turn	55 Feet	60 Feet	60 Feet	>400 Feet
	WB Left Turn	50 Feet	65 Feet	65 Feet	300 Feet
	WB Through/Right Turn	385 Feet	585 Feet	585 Feet	>1000 Feet
	NB Left Turn	190 Feet	265 Feet	265 Feet	325 Feet
	NB Through/Right Turn	110 Feet	125 Feet	125 Feet	>800 Feet
	SB Left Turn	65 Feet	75 Feet	75 Feet	275 Feet
	SB Through	110 Feet	125 Feet	125 Feet	>600 Feet
	SB Right Turn	5 Feet	5 Feet	5 Feet	275 Feet
Route 44 (West Main Street) at River Park Drive & Plaza Drive	EB Left Turn	10 Feet	10 Feet	-	150 Feet
	EB Thru/Right Turn	220 Feet	360 Feet	-	725 Feet
	WB Left Turn	10 Feet	10 Feet	-	130 Feet
	WB Thru/Right Turn	275 Feet	465 Feet	-	>1000 Feet
	NB Left Turn	40 Feet	40 Feet	-	125 Feet
	NB Thru/Right Turn	30 Feet	30 Feet	-	125 Feet
	SB Left Turn	25 Feet	25 Feet	-	50 Feet
	SB Thru/Right Turn	0 Feet	0 Feet	-	50 Feet
Route 44 (East Main Street) at Avon Village Drive & Private Drive	EB Approach	190 Feet	320 Feet	-	660 Feet
	WB Approach	220 Feet	390 Feet	-	600 Feet
	NB Thru/Left Turn	85 Feet	85 Feet	-	100 Feet
	NB Right Turn	0 Feet	0 Feet	-	100 Feet
	SB Approach	0 Feet	0 Feet	-	100 Feet

Intersection	Approach Lane	2020 Background Queue	2020 Combined Queue	2020 Combined Improved Queue	Available Storage
Route 44 (East/West Main Street) at Route 10/202 (Simsbury Road) and Old Farms Road	EB Left Turn	475 Feet	475 Feet	-	300 Feet
	EB Through/Right Turn	400 Feet	655 Feet	-	1025 Feet
	WB Left Turn	440 Feet	440 Feet	-	300 Feet
	WB Through/Right Turn	555 Feet	930 Feet	-	660 Feet
	NB Through/Left Turn	270 Feet	365 Feet	-	>1000 Feet
	NB Right Turn	80 Feet	135 Feet	-	150 Feet
	SB Left Turn	205 Feet	260 Feet	-	300 Feet
	SB Through/Right Turn	580 Feet	615 Feet	-	>700 Feet
Route 44 (West Main Street) at Woodford Avenue	EB Through/Left Turn	5 Feet	5 Feet	-	50 Feet
	EB Through	0 Feet	0 Feet	-	
	WB Through	0 Feet	0 Feet	-	
	WB Through/Right Turn	0 Feet	0 Feet	-	
	SB Approach	10 Feet	15 Feet	-	50 Feet
Route 44 (West Main Street) at Ensign Drive and Office Park Driveway	EB Left Turn	N/A	N/A	105 Feet	100 Feet
	EB Through/Right Turn	60 Feet	110 Feet	40 Feet	>300 Feet
	WB Left Turn	N/A	N/A	5 Feet	50 Feet
	WB Through/Right	215 Feet	370 Feet	960 Feet	>500 Feet
	NB Approach	20 Feet	20 Feet	20 Feet	100 Feet
	SB Through/Left Turn	35 Feet	145 Feet	210 Feet	150 Feet
	SB Right Turn	0 Feet	45 Feet	50 Feet	80 Feet
Route 44 (West Main Street) at Bickford Drive	EB Left Turn	0 Feet	235 Feet	115 Feet	125 Feet
	EB Through	275 Feet	220 Feet	221 Feet	>400 Feet
	WB Through	233 Feet	400 Feet	285 Feet	>400 Feet
	WB Right Turn	N/A	N/A	51 Feet	100 Feet
	SB Left Turn	85 Feet	105 Feet	107 Feet	215 Feet
	SB Right Turn	40 Feet	90 Feet	90 Feet	300 Feet
Route 44 (West Main Street) at Lawrence Ave. & Plaza Dive	EB Approach	310 Feet	410 Feet	-	>600 Feet
	WB Approach	115 Feet	155 Feet	-	>600 Feet
	NB Through/Left Turn	65 Feet	65 Feet	-	50 Feet
	NB Right Turn	0 Feet	0 Feet	-	50 Feet
	SB Approach	10 Feet	10 Feet	-	>100 Feet

Intersection	Approach Lane	2020 Background Queue	2020 Combined Queue	2020 Combined Improved Queue	Available Storage
Climax Road at Bickford Drive and Main Street	EB Approach	5 Feet	0 Feet	-	
	WB Approach	10 Feet	0 Feet	-	
	NB Approach	5 Feet	0 Feet	-	
	SB Approach	5 Feet	0 Feet	-	
Route 167 (Bushy Hill Road) at Climax Road	WB Left Turn	120 Feet	180 Feet	-	>300 Feet
	NB Through/Right Turn	255 Feet	270 Feet	-	>300 Feet
	SB Through/Left Turn	110 Feet	180 Feet	-	>300 Feet
Ensign Drive at Bickford Drive and Retail Drive #3	EB Approach	5 Feet	0 Feet	-	
	NB Through/Left Turn	5 Feet	0 Feet	-	
	SB Through/Right Turn	0 Feet	0 Feet	-	
Route 10/202 (Simsbury Road) at Bickford Drive and Mountain View Avenue	EB Left Turn	50 Feet	180 Feet	185 Feet	200 Feet
	EB Through/Right Turn	N/A	45 Feet	45 Feet	>200 Feet
	WB Left Turn	65 Feet	90 Feet	95 Feet	75 Feet
	WB Through/Right Turn	25 Feet	35 Feet	35 Feet	75 Feet
	NB Left Turn	10 Feet	60 Feet	45 Feet	100 Feet
	NB Through/Right Turn	360 Feet	320 Feet	304 Feet	>1000 Feet
	SB Left Turn	10 Feet	10 Feet	10 Feet	100 Feet
	SB Through	440 Feet	625 Feet	355 Feet	>800 Feet
	SB Right Turn	N/A	N/A	60 Feet	100 Feet
Route 10/202 (Simsbury Road) at Woodford Avenue	EB Approach	25 Feet	40 Feet	-	>150 Feet
	WB Approach	5 Feet	5 Feet	-	>100 Feet
	NB Approach	5 Feet	5 Feet	-	>100 Feet
	SB Approach	0 Feet	0 Feet	-	>100 Feet

NOTE: Values indicated represent 95th percentile (design) vehicle queue lengths. Values are rounded to the nearest 5 feet

Appendix B

Figures

File Path: J:\DWG\2014\0986S10\CivilPlan\MasterPlanTraffic\20140986S10_LOC01.dwg Layout: LOC-01 Plotted: Mon, March 26, 2018 - 12:33 PM User: MARC MANCINI

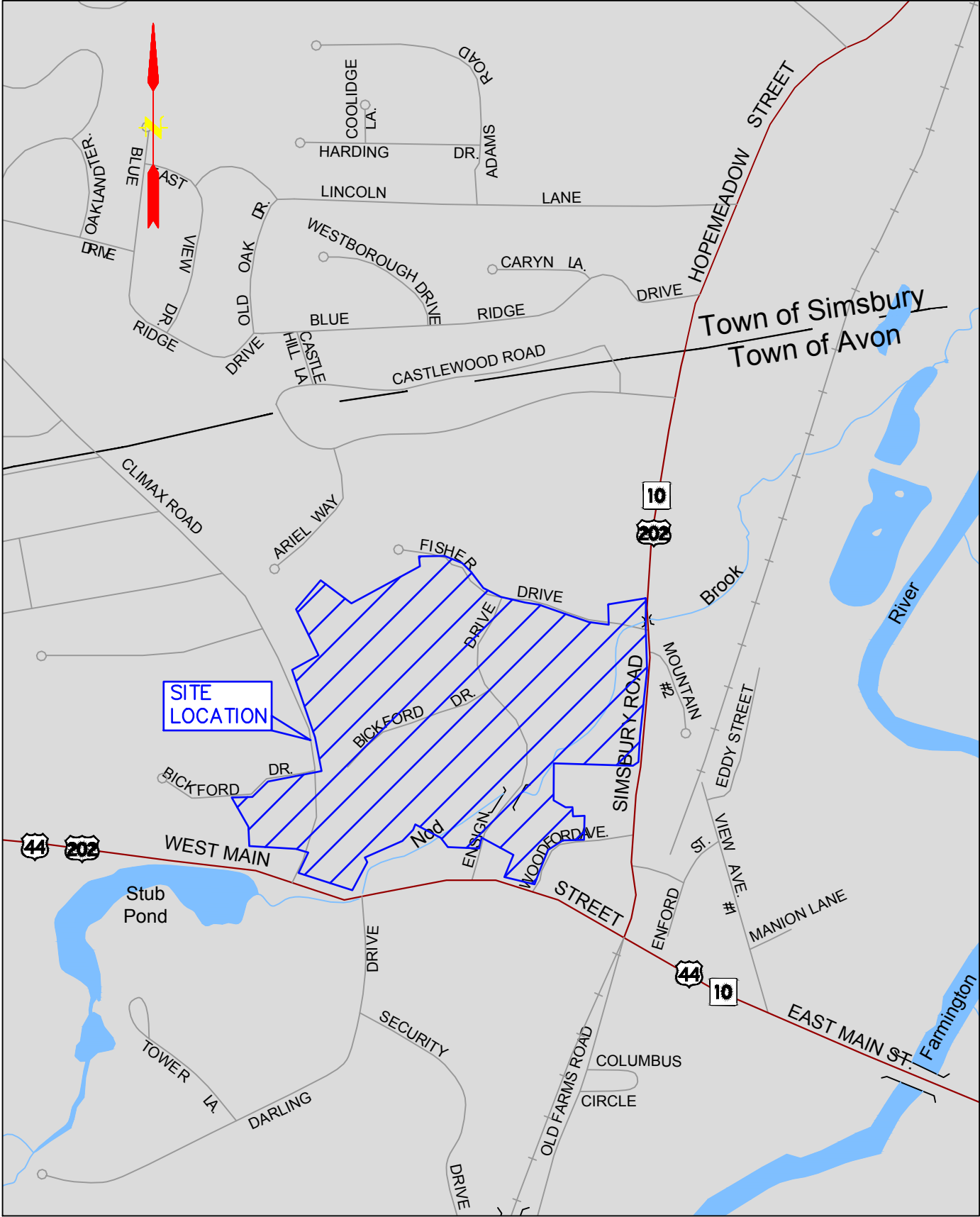
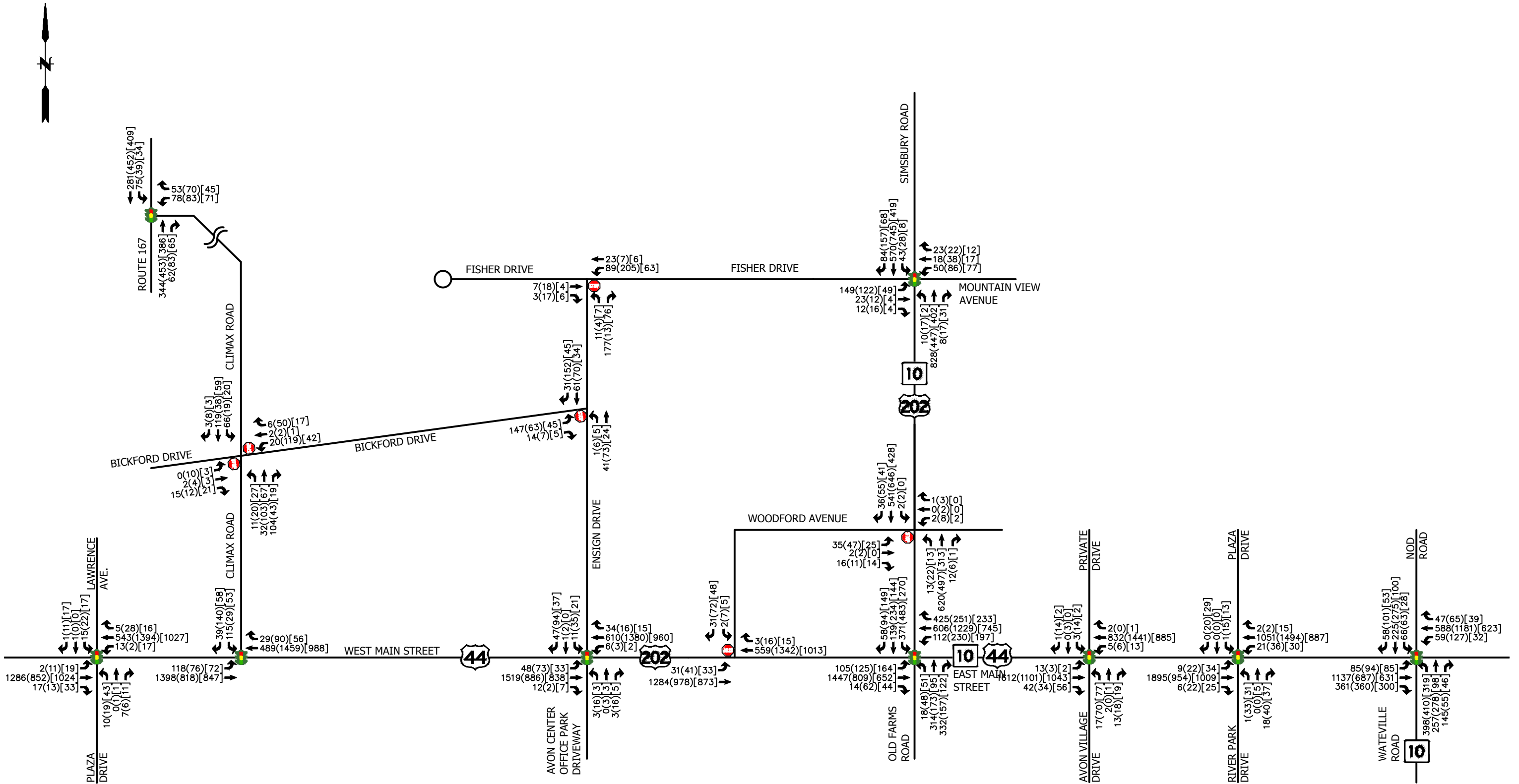


FIGURE 1: SITE LOCATION PLAN

PROJ. NO: 20160986.S10

AVON VILLAGE CENTER- AVON, CT

MARCH 2018



XX(XX)[XX] = WEEKDAY AM PEAK HOUR (WEEKDAY PM PEAK HOUR)[SATURDAY PEAK HOUR]

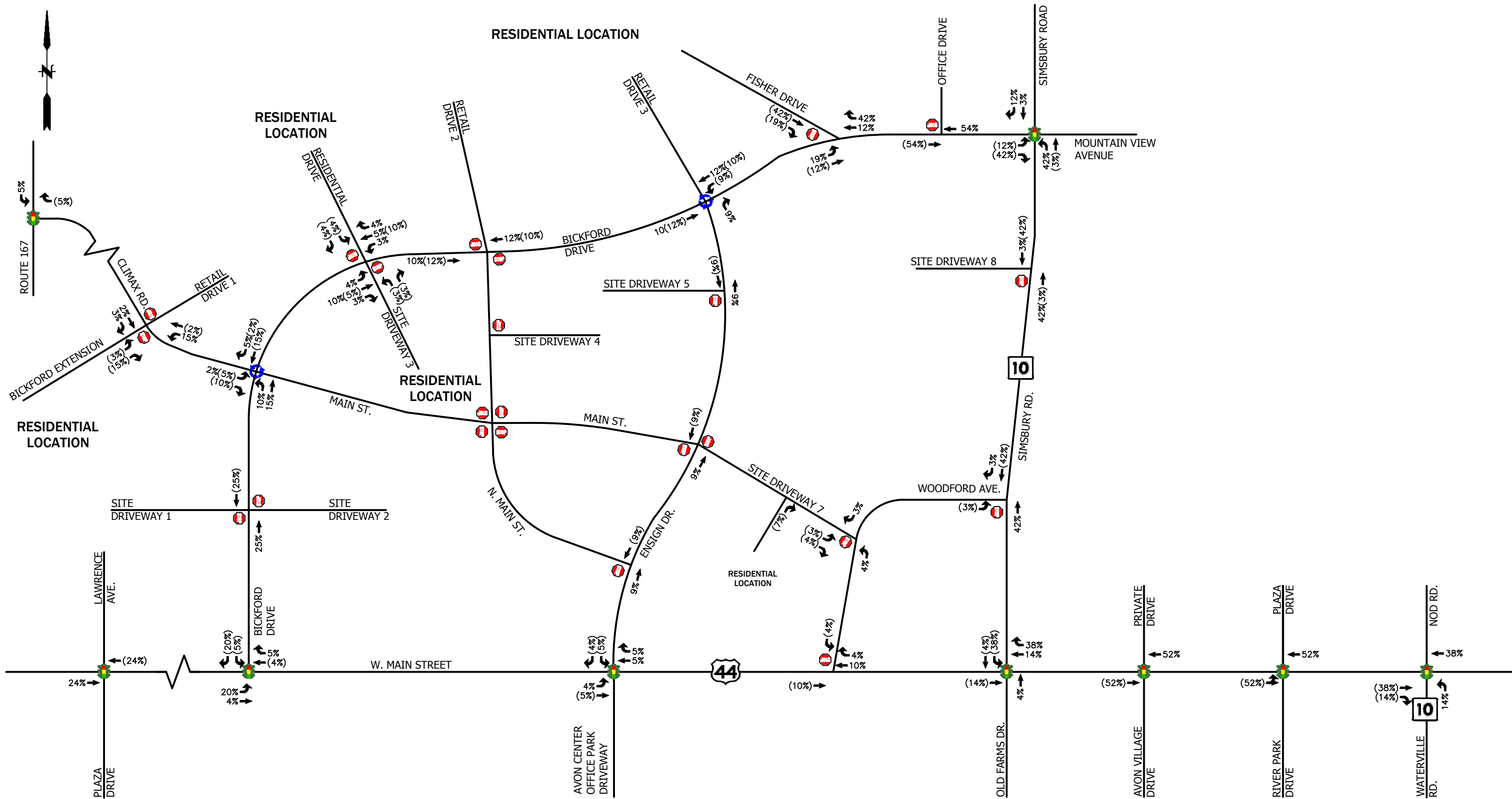
FIGURE 2: EXISTING 2015 VOLUMES

PROJ. NO: 20140986.S10

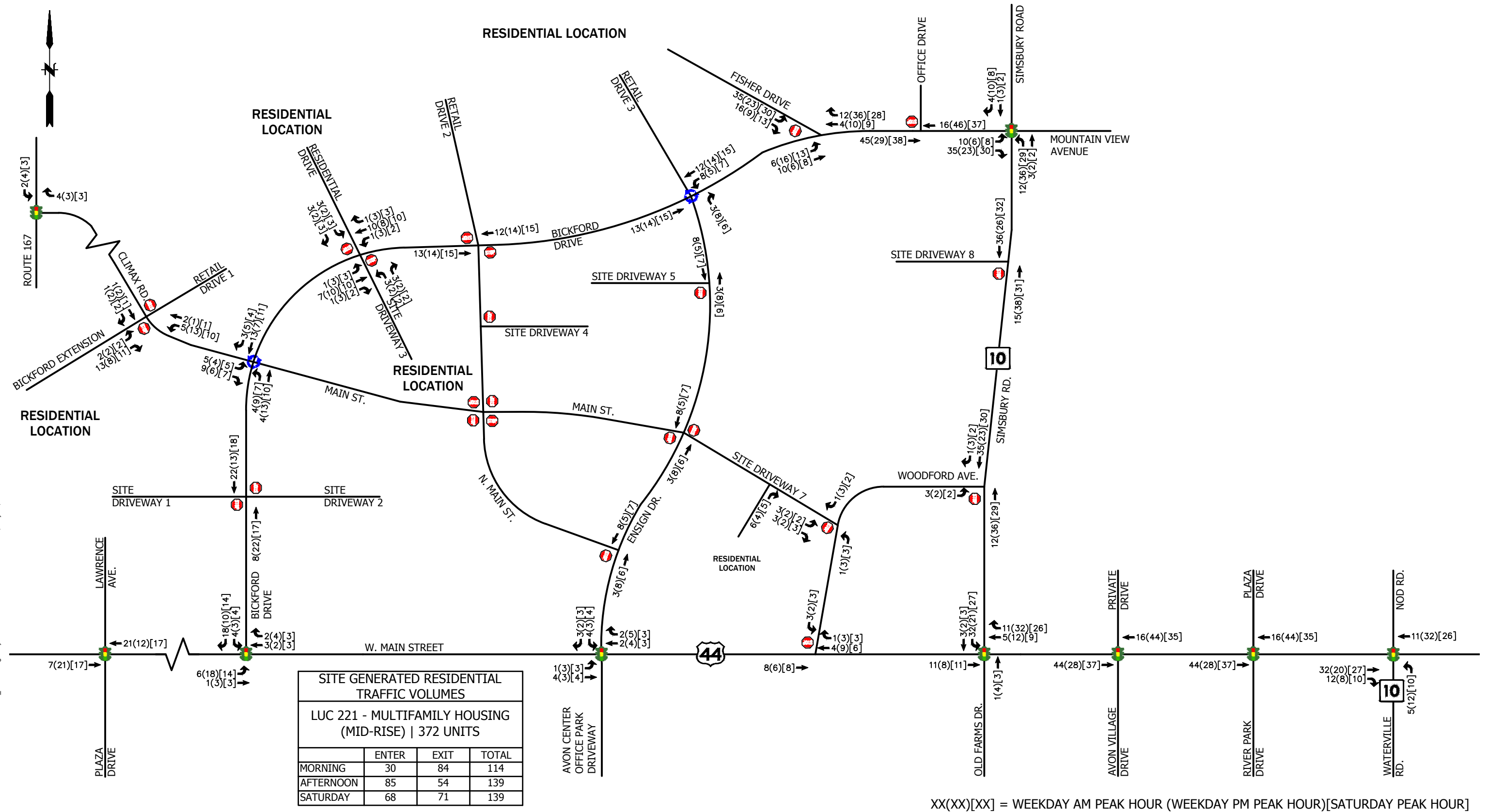
AVON VILLAGE CENTER

MAY 2018

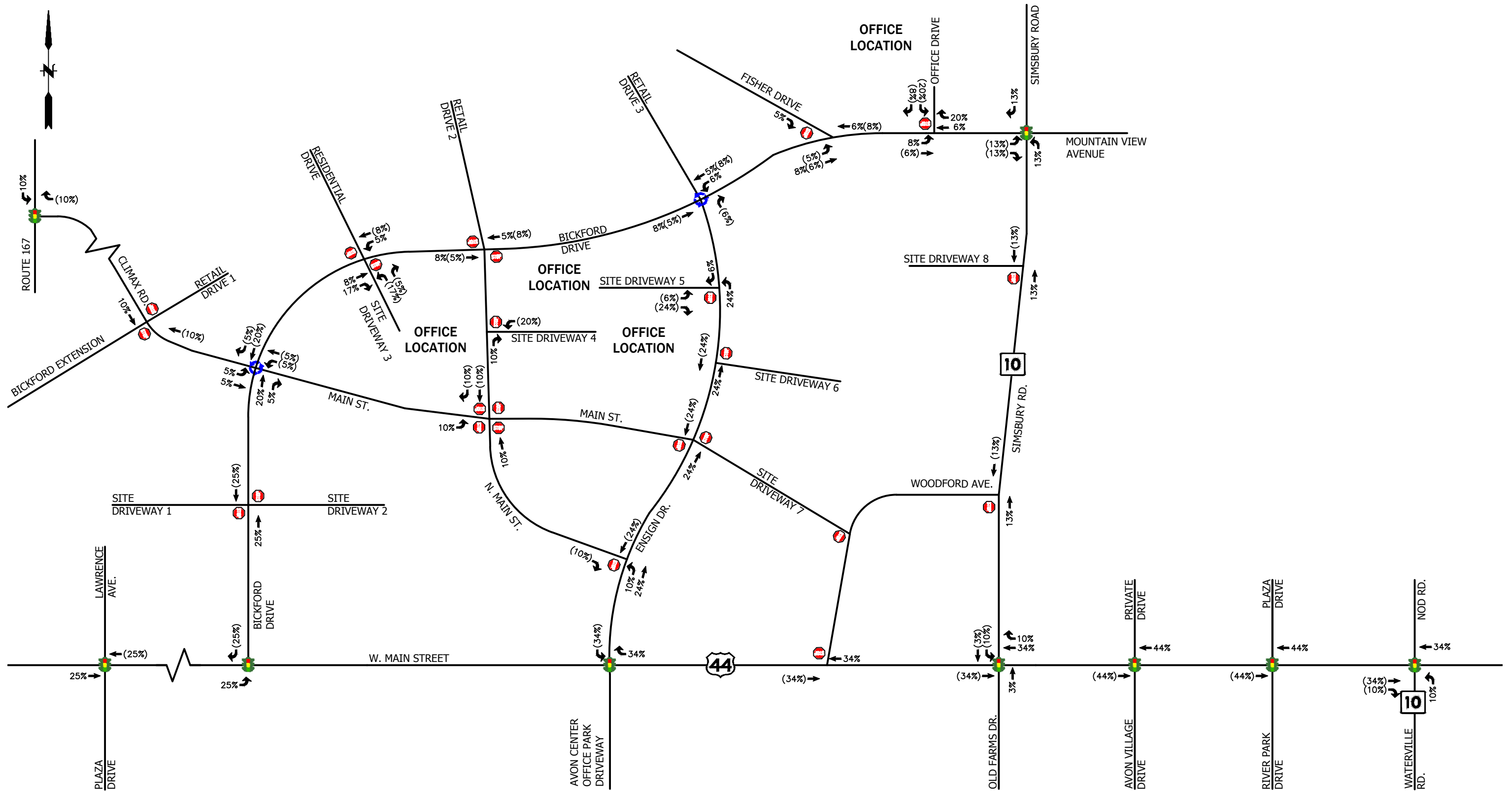
File Path: J:\DWG\2014\0986\S10\Civil\PlanMaster\PlanTraffic\20140986S10_TVF05.dwg Layout: FIG. 4 RES ARRIV DEPART Plotted: Mon, May 07, 2018 - 3:12 PM User: MARC MANCINI



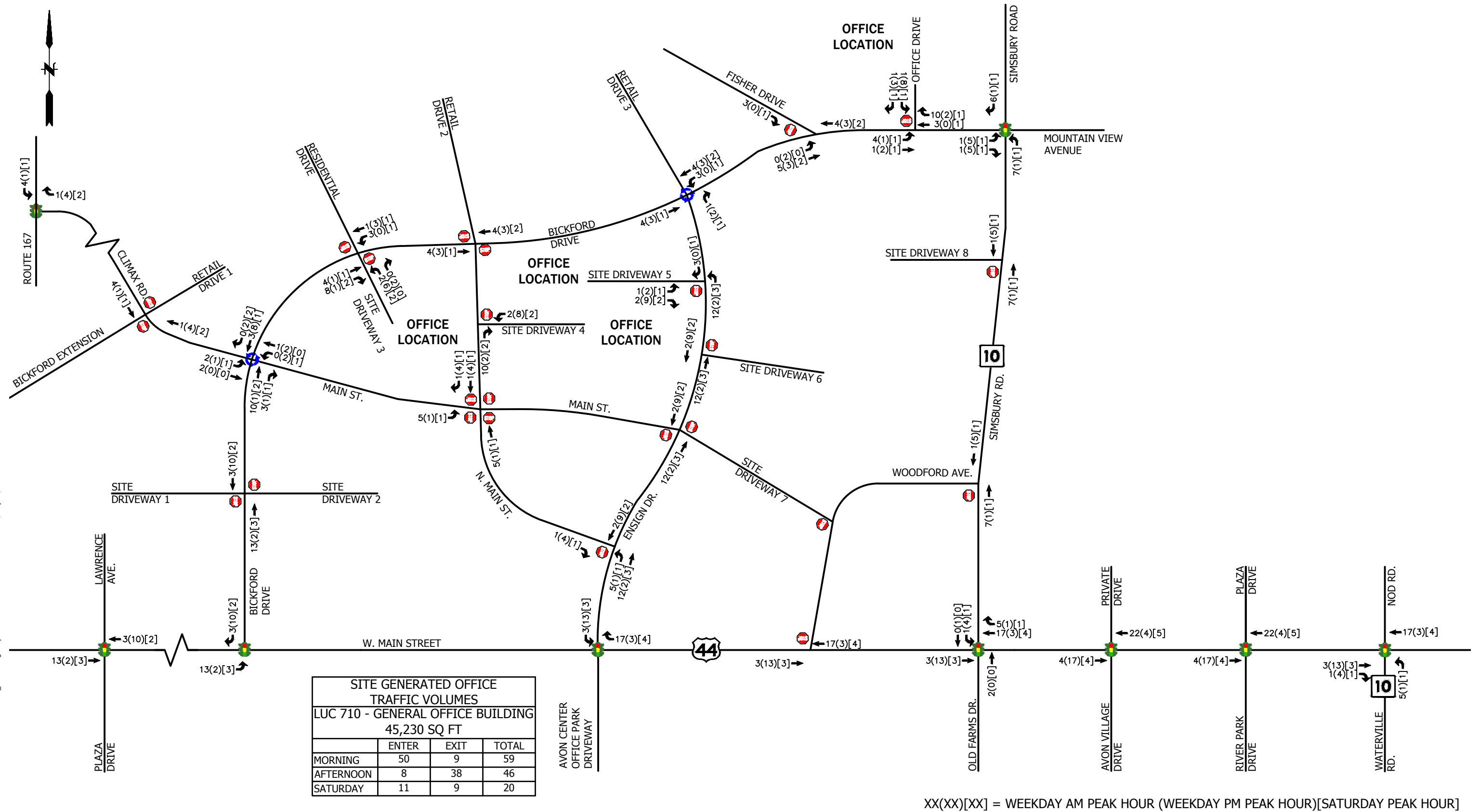
XX(XX) = ENTERING TRAFFIC (EXITING TRAFFIC)



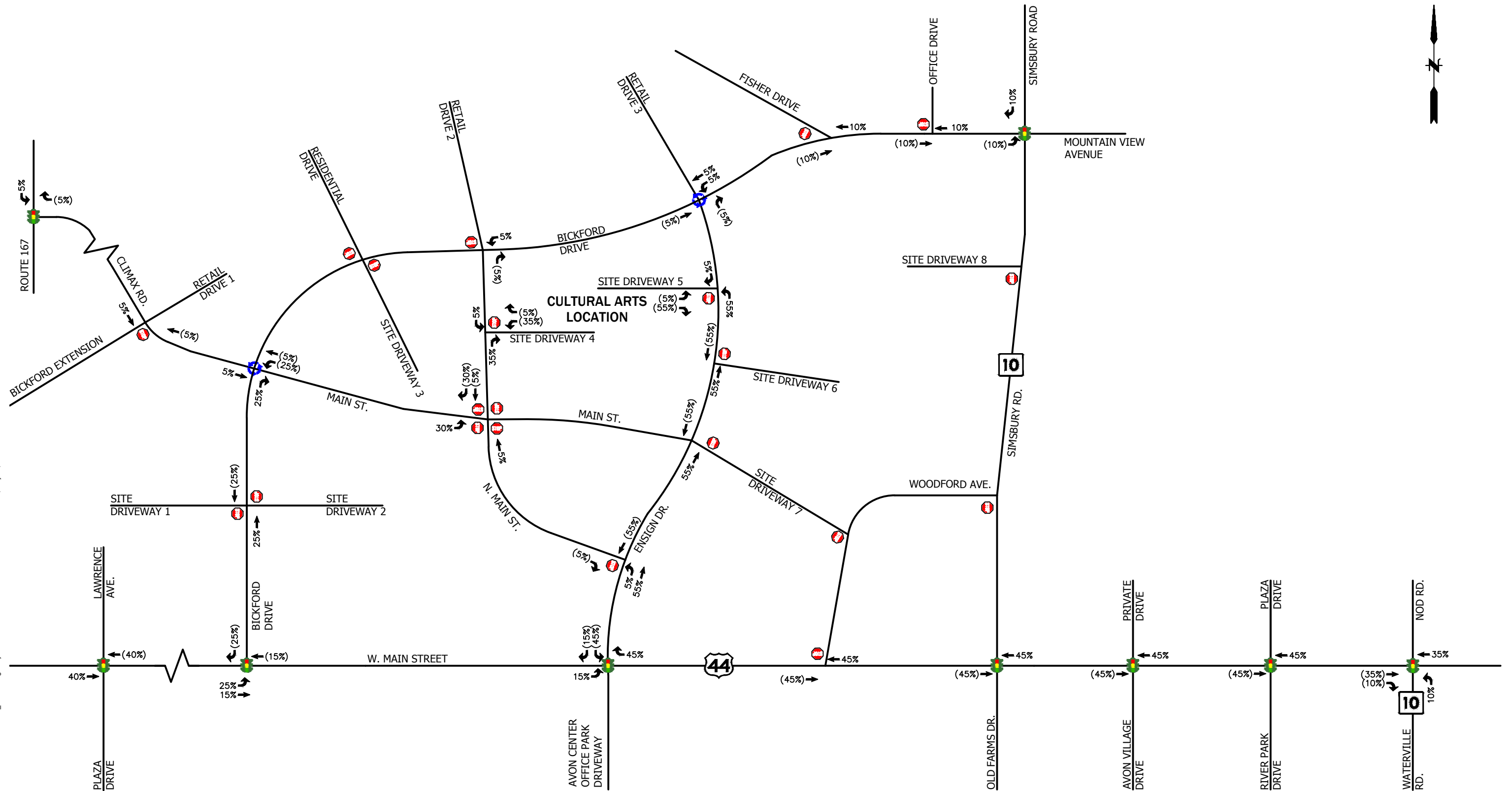
File Path: J:\DWG\2014\0986S10\Civil\PlanMaster\PlanTraffic\20140986S10_TVF05.dwg Layout: FIG. 6 OFFICE ARRIV DEPART Plotted: Mon, May 07, 2018 - 3:12 PM User: MARC MANCINI



XX(XX) = ENTERING TRAFFIC (EXITING TRAFFIC)

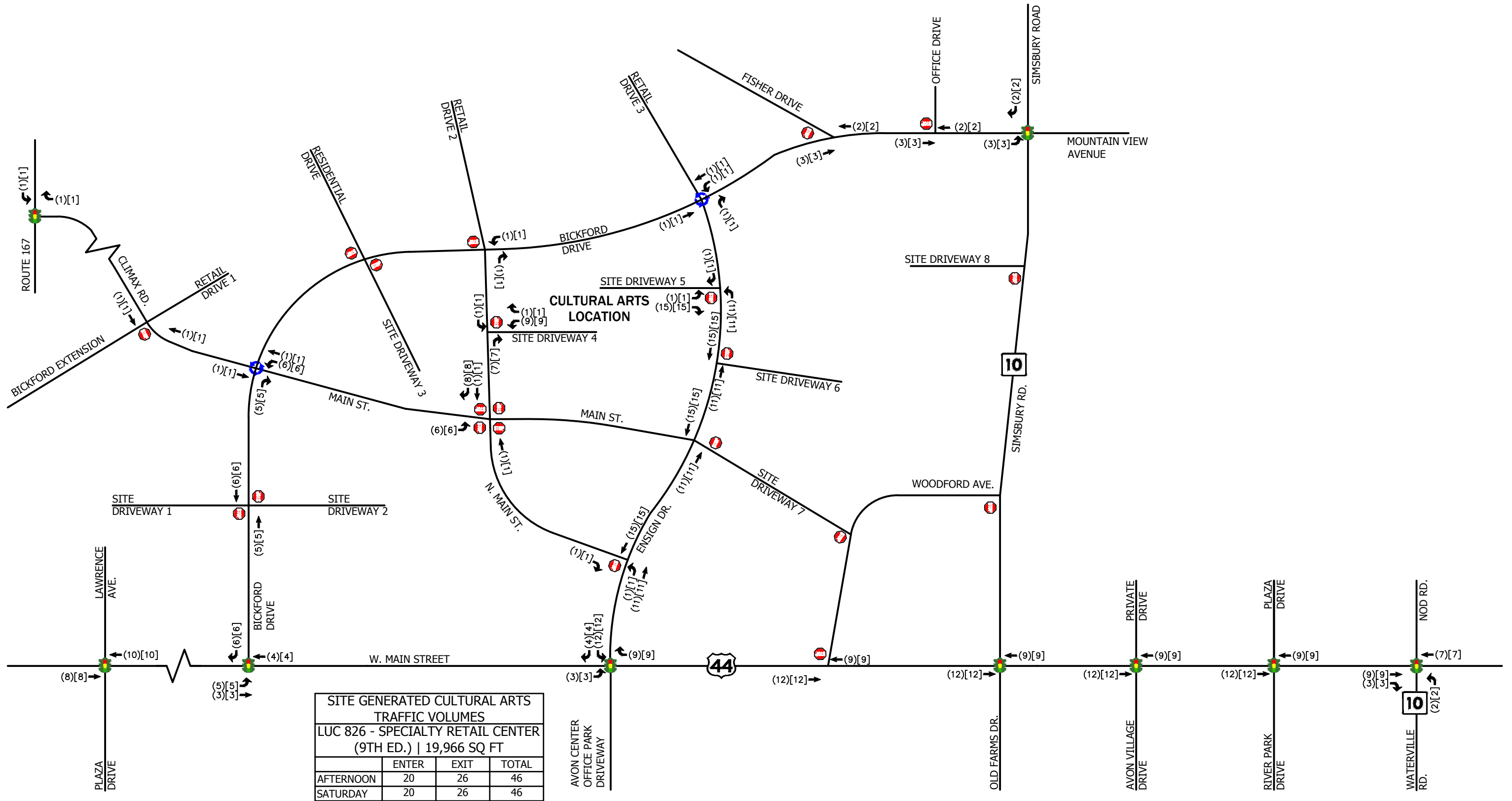


File Path: J:\DWG\2014\0986\S10\Civil\PlanMaster\PlanTraffic\20140986S10_TVF05.dwg Layout: FIG. 8 CULT. ARTS ARRIV DEPART Plotted: Mon, May 07, 2018 - 3:12 PM User: MARC MANCINI



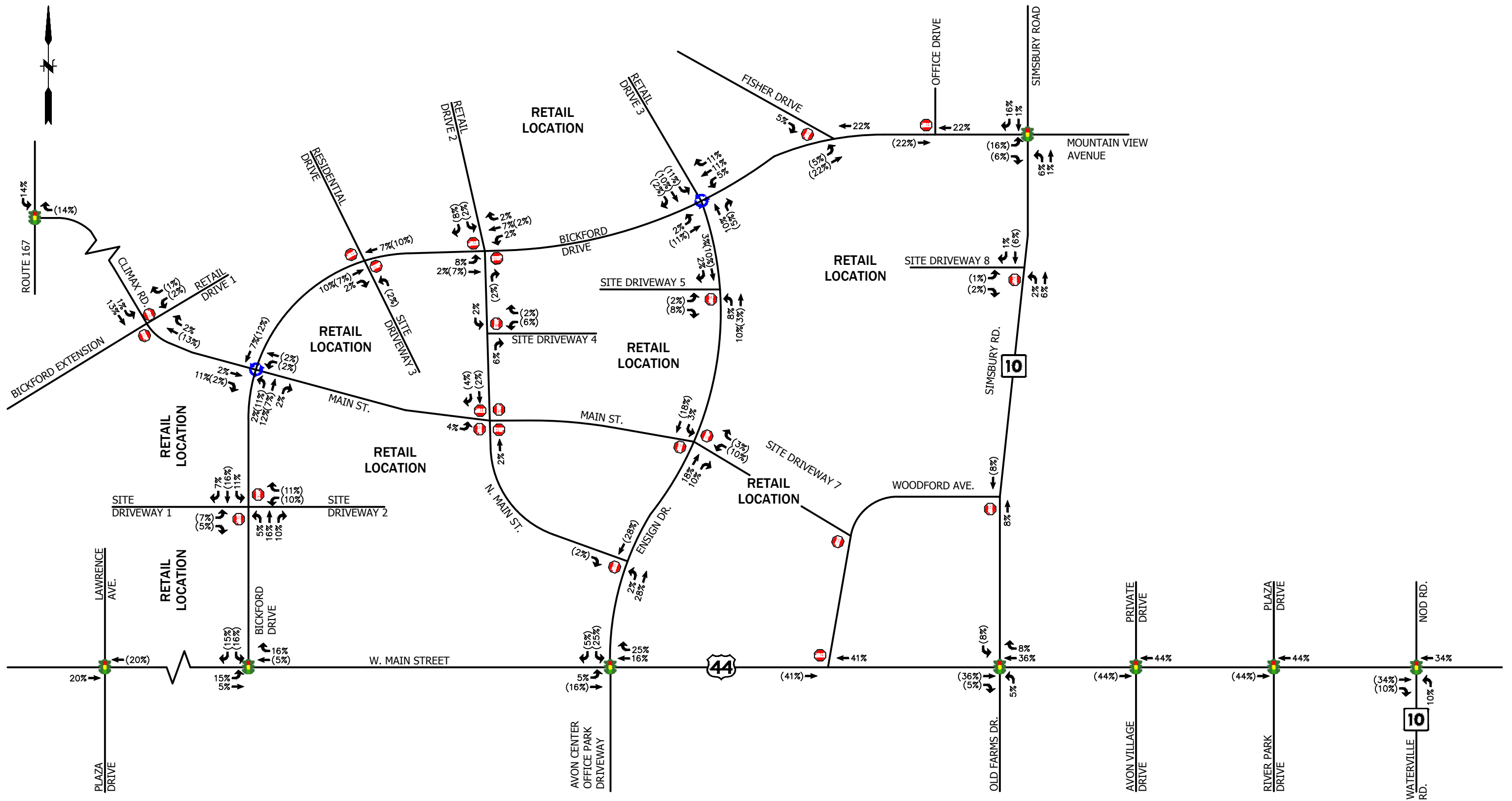
XX(XX) = ENTERING TRAFFIC (EXITING TRAFFIC)

File Path: J:\DWG\2014\0986\S10\Civil\PlanMaster\PlanTraffic\20140986S10_TV\F05.dwg Layout: FIG. 9 CULT. ARTS GENER. Plotted: Mon, May 07, 2018 - 3:12 PM User: MARC MANCINI



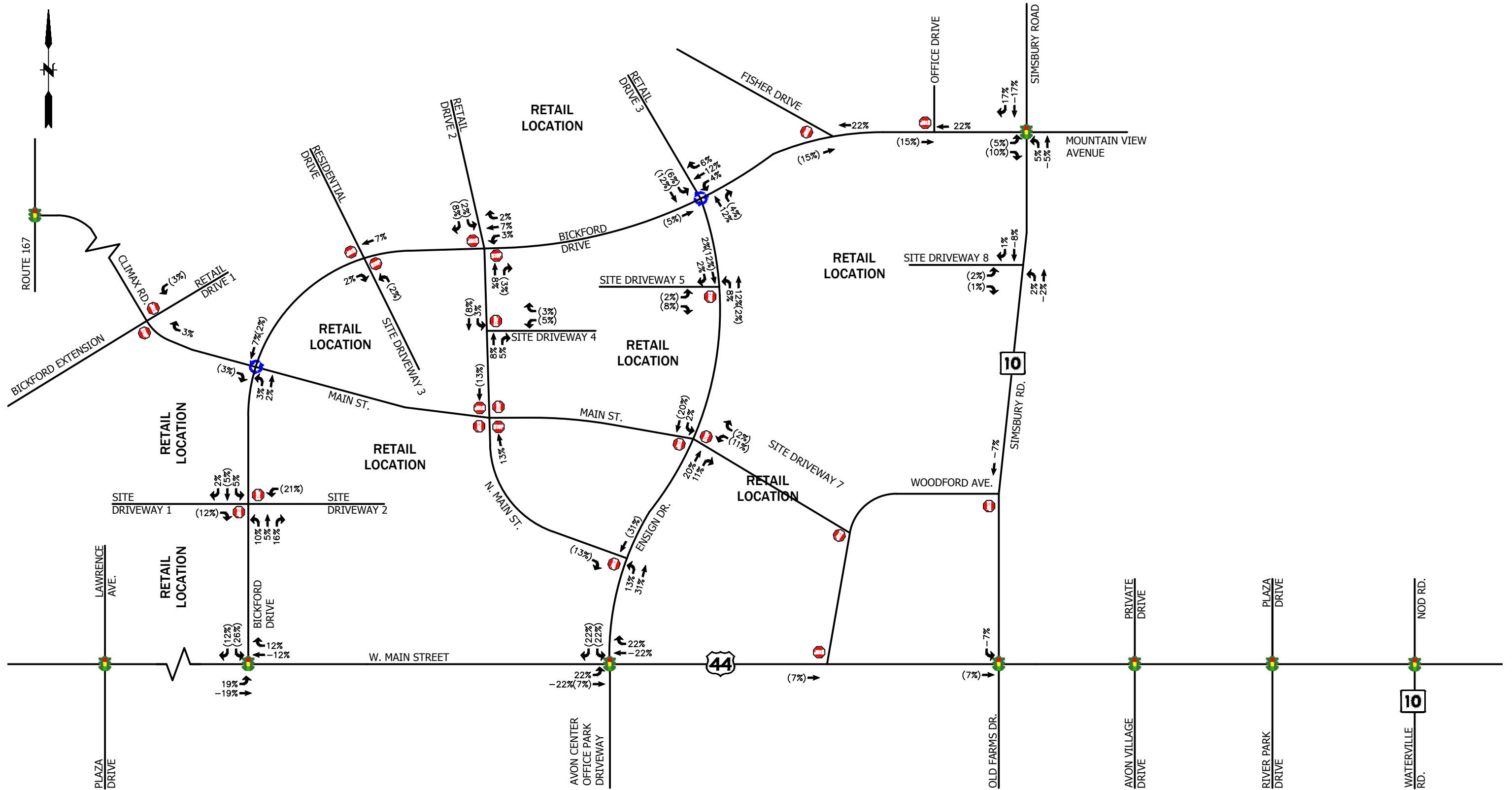
XX(XX)[XX] = (WEEKDAY PM PEAK HOUR)[SATURDAY PEAK HOUR]

File Path: J:\DWG\2014\0986\S10\Civil\PlanMaster\PlanTraffic\20140986S10_TVFD05.dwg Layout: FIG. 10 RETAIL ARRIV DEPART Plotted: Mon, May 07, 2018 - 3:12 PM User: MARC MANCINI



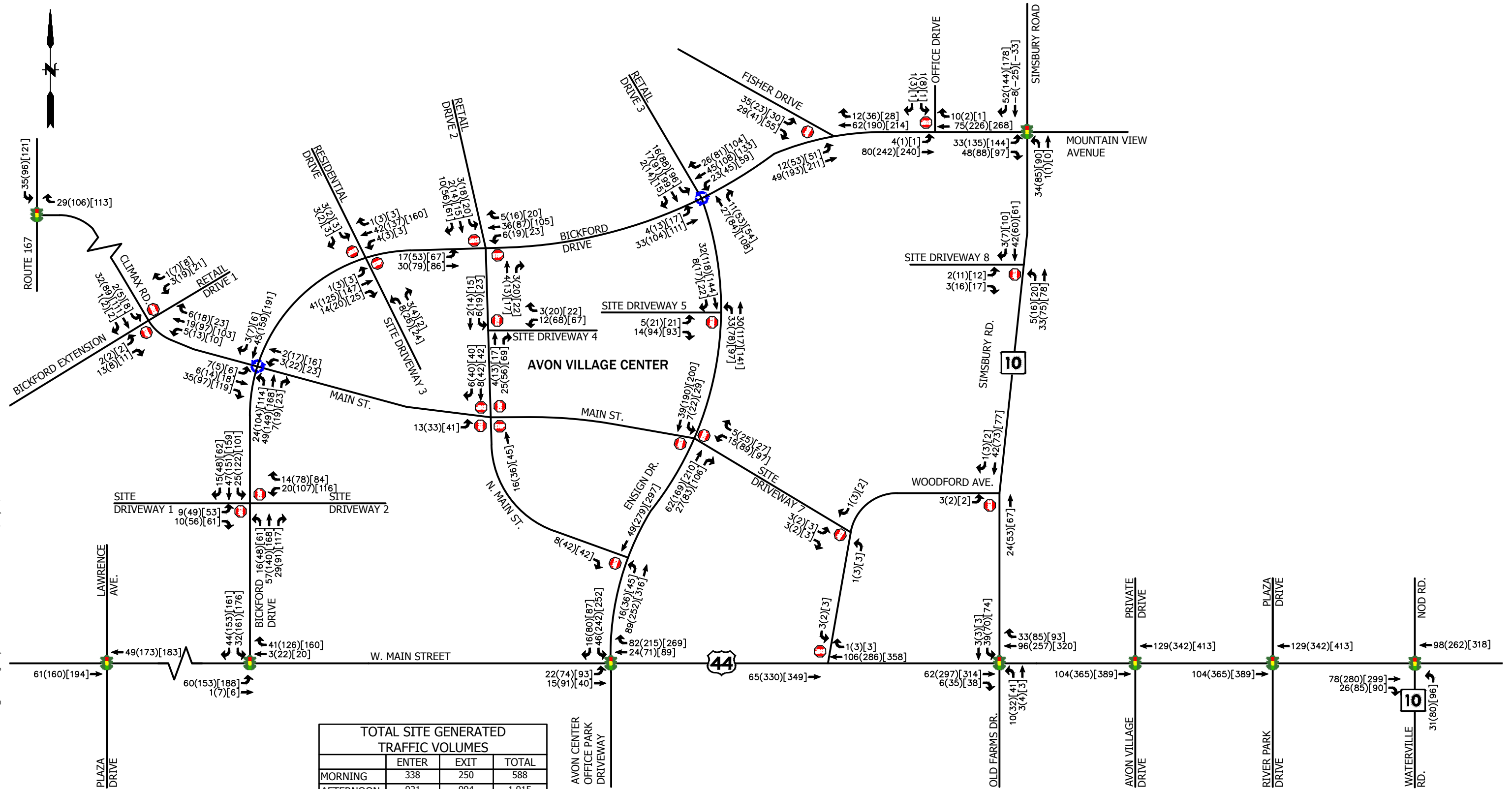
XX(X) = ENTERING TRAFFIC (EXITING TRAFFIC)

File Path: J:\DWG\2014\0986\S10\Civil\PlanMaster\PlanTraffic\20140986S10_TVF05.dwg Layout: FIG. 12 RETAIL PASS-BY ARRIVAL/DEPARTURE DISTRIBUTION Plotted: Mon, May 07, 2018 - 3:12 PM User: MARC MANCINI

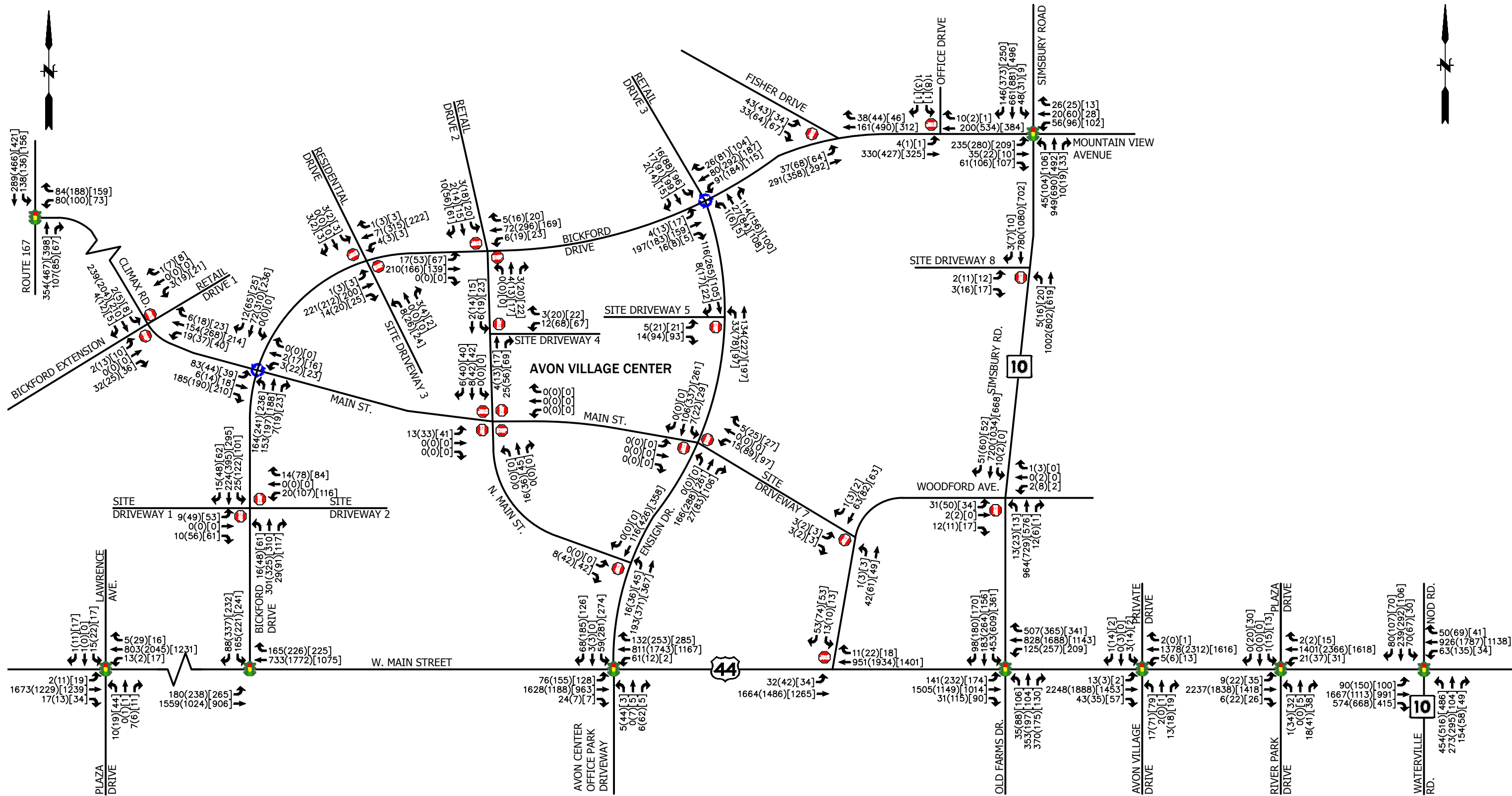


XX(XX) = ENTERING TRAFFIC (EXITING TRAFFIC)

File Path: J:\DWG\2014\0986\S10\Civil\PlanMaster\PlanTraffic\20140986\S10_TV\F05.dwg Layout: FIG. 14 TOTAL GENER Plotted: Mon, May 07, 2018 - 3:12 PM User: MARC MANCINI



XX(XX)[XX] = WEEKDAY AM PEAK HOUR (WEEKDAY PM PEAK HOUR)[SATURDAY PEAK HOUR]



XX(XX)[XX] = WEEKDAY AM PEAK HOUR (WEEKDAY PM PEAK HOUR)[SATURDAY PEAK HOUR]

Appendix C

Intersection Capacity Analysis Worksheets 2020 Background Traffic Volumes Weekday Morning Peak Hour

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1589	548	63	828	50	423	273	154	70	239	80
Future Volume (vph)	90	1589	548	63	828	50	423	273	154	70	239	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		0	300		0	325		0	0		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.992			0.946				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3511	0	3433	1762	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3511	0	3433	1762	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			354		5			20				90
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		779			1254			448			540	
Travel Time (s)		17.7			28.5			10.2			12.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1727	596	68	900	54	460	297	167	76	260	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	1727	596	68	954	0	460	464	0	76	260	87
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Detector Phase	1	6	6	5	2		7 4	7 8		4	8	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	20.0					3.0	5.0	3.0
Minimum Split (s)	9.1	22.0	22.0	9.5	27.0					7.0	26.7	9.1
Total Split (s)	21.3	73.7	73.7	12.6	65.0					10.0	26.7	21.3
Total Split (%)	15.2%	52.6%	52.6%	9.0%	46.4%					7.1%	19.1%	15.2%
Maximum Green (s)	15.2	66.7	66.7	6.1	58.0					6.0	21.0	15.2
Yellow Time (s)	3.1	5.0	5.0	3.5	5.0					3.0	3.3	3.1
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0					1.0	2.4	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Lost Time (s)	6.1	7.0	7.0	6.5	7.0					4.0	5.7	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes	Yes
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Recall Mode	None	C-Min	C-Min	None	C-Min					None	None	None
Walk Time (s)											20.0	
Flash Dont Walk (s)											1.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)	11.4	66.7	66.7	6.5	62.2		23.5	39.8		6.0	20.6	37.7
Actuated g/C Ratio	0.08	0.48	0.48	0.05	0.44		0.17	0.28		0.04	0.15	0.27
v/c Ratio	0.68	1.02	0.63	0.83	0.61		0.80	0.90		1.01	0.95	0.18
Control Delay	85.0	64.5	13.6	125.2	32.2		67.3	67.8		172.0	101.7	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	85.0	64.5	13.6	125.2	32.2		67.3	67.8		172.0	101.7	7.4

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background AM

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	8.5
Total Split (s)	17.0
Total Split (%)	12%
Maximum Green (s)	13.5
Yellow Time (s)	3.0
All-Red Time (s)	0.5
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	1.5
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	E	B	F	C		E	E		F	F	A
Approach Delay		52.8			38.4			67.6			94.9	
Approach LOS		D			D			E			F	
Queue Length 50th (ft)	88	~878	158	63	345		210	392		~71	237	0
Queue Length 95th (ft)	148	#1018	287	#160	437		273	#592		#182	#409	39
Internal Link Dist (ft)		699			1174			368			460	
Turn Bay Length (ft)	285			300			325					
Base Capacity (vph)	192	1686	939	82	1562		576	520		75	279	532
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.51	1.02	0.63	0.83	0.61		0.80	0.89		1.01	0.93	0.16

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 56.3

Intersection LOS: E

Intersection Capacity Utilization 93.0%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4	 Ø7	 Ø8
21.3 s	65 s	10 s	17 s	26.7 s
 Ø5	 Ø6 (R)			
12.6 s	73.7 s			

Lane Group	Ø7
LOS	
Approach Delay	
Approach LOS	
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	

HCM Signalized Intersection Capacity Analysis

1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1589	548	63	828	50	423	273	154	70	239	80
Future Volume (vph)	90	1589	548	63	828	50	423	273	154	70	239	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	7.0	7.0	6.5	7.0		3.5	3.5		4.0	5.7	6.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3509		3433	1762		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3509		3433	1762		1770	1863	1583
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)	98	1727	596	68	900	54	460	297	167	76	260	87
RTOR Reduction (vph)	0	0	185	0	3	0	0	15	0	0	0	67
Lane Group Flow (vph)	98	1727	411	68	951	0	460	449	0	76	260	20
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Actuated Green, G (s)	11.4	66.7	66.7	6.5	62.2		23.5	37.6		6.0	20.6	32.0
Effective Green, g (s)	11.4	66.7	66.7	6.5	62.2		19.5	37.6		6.0	20.6	32.0
Actuated g/C Ratio	0.08	0.48	0.48	0.05	0.44		0.14	0.27		0.04	0.15	0.23
Clearance Time (s)	6.1	7.0	7.0	6.5	7.0					4.0	5.7	6.1
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Lane Grp Cap (vph)	144	1686	754	82	1558		478	473		75	274	361
v/s Ratio Prot	c0.06	c0.49		0.04	0.27		0.13	c0.26		c0.04	0.14	0.00
v/s Ratio Perm			0.26									0.01
v/c Ratio	0.68	1.02	0.54	0.83	0.61		0.96	0.95		1.01	0.95	0.06
Uniform Delay, d1	62.5	36.6	25.9	66.2	29.7		59.9	50.3		67.0	59.2	42.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.1	28.3	2.8	47.1	1.8		31.3	28.8		107.7	39.8	0.0
Delay (s)	72.6	65.0	28.7	113.3	31.5		91.2	79.1		174.7	99.0	42.2
Level of Service	E	E	C	F	C		F	E		F	F	D
Approach Delay (s)		56.4			36.9			85.1			100.9	
Approach LOS		E			D			F			F	
Intersection Summary												
HCM 2000 Control Delay			61.7			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				26.7		
Intersection Capacity Utilization			93.0%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	2133	6	21	1272	2	1	0	18	1	0	0
Future Volume (vph)	9	2133	6	21	1272	2	1	0	18	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	130		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.850				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	0	1770	3539	0	1770	1583	0	1770	1863	0
Flt Permitted	0.184			0.042								
Satd. Flow (perm)	343	3539	0	78	3539	0	1863	1583	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								155				
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		725			1574			243			171	
Travel Time (s)		16.5			35.8			11.0			7.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	2318	7	23	1383	2	1	0	20	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	2325	0	23	1385	0	1	20	0	1	0	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Detector Phase	1	6		5	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	8.1	22.2		20.0	22.2		21.5	21.5		21.5	21.5	
Total Split (s)	15.0	80.0		20.0	80.0		25.0	25.0		25.0	25.0	
Total Split (%)	12.0%	64.0%		16.0%	64.0%		20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	10.9	73.8		16.0	73.8		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.1	4.3		3.0	4.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.9		1.0	1.9		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Act Effct Green (s)	111.3	108.3		113.2	112.3		6.1	6.1		6.1		
Actuated g/C Ratio	0.89	0.87		0.91	0.90		0.05	0.05		0.05		
v/c Ratio	0.03	0.76		0.15	0.44		0.01	0.09		0.01		
Control Delay	1.2	8.6		3.2	2.7		57.0	0.8		57.0		
Queue Delay	0.0	0.8		0.0	0.0		0.0	0.0		0.0		
Total Delay	1.2	9.5		3.2	2.7		57.0	0.8		57.0		
LOS	A	A		A	A		E	A		E		
Approach Delay		9.4			2.7			3.5			57.0	
Approach LOS		A			A			A			E	

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	1	533		2	97		1	0		1		
Queue Length 95th (ft)	2	673		4	221		7	0		7		
Internal Link Dist (ft)		645			1494			163			91	
Turn Bay Length (ft)	150			130								
Base Capacity (vph)	437	3066		287	3179		290	377		290		
Starvation Cap Reductn	0	409		0	0		0	0		0		
Spillback Cap Reductn	0	0		0	0		0	0		0		
Storage Cap Reductn	0	0		0	0		0	0		0		
Reduced v/c Ratio	0.02	0.88		0.08	0.44		0.00	0.05		0.00		

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 125

Offset: 54 (43%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 6.9

Intersection LOS: A

Intersection Capacity Utilization 73.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4
15 s	80 s	25 s
 Ø5	 Ø6 (R)	
20 s	80 s	

HCM Signalized Intersection Capacity Analysis

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	2133	6	21	1272	2	1	0	18	1	0	0
Future Volume (vph)	9	2133	6	21	1272	2	1	0	18	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5		
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00		
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00		
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95		
Satd. Flow (prot)	1770	3538		1770	3538		1770	1583		1770		
Flt Permitted	0.18	1.00		0.04	1.00		1.00	1.00		1.00		
Satd. Flow (perm)	343	3538		78	3538		1863	1583		1863		
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)	10	2318	7	23	1383	2	1	0	20	1	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	19	0	0	0	0
Lane Group Flow (vph)	10	2325	0	23	1385	0	1	1	0	1	0	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Actuated Green, G (s)	103.2	102.0		107.9	104.3		3.7	3.7		3.7		
Effective Green, g (s)	103.2	102.0		107.9	104.3		3.7	3.7		3.7		
Actuated g/C Ratio	0.83	0.82		0.86	0.83		0.03	0.03		0.03		
Clearance Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		
Lane Grp Cap (vph)	296	2887		116	2952		55	46		55		
v/s Ratio Prot	0.00	c0.66		c0.01	0.39			0.00				
v/s Ratio Perm	0.03			0.16			c0.00			0.00		
v/c Ratio	0.03	0.81		0.20	0.47		0.02	0.01		0.02		
Uniform Delay, d1	2.0	6.2		10.9	2.8		58.9	58.9		58.9		
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Incremental Delay, d2	0.0	2.5		0.8	0.5		0.1	0.1		0.1		
Delay (s)	2.1	8.7		11.7	3.4		59.0	59.0		59.0		
Level of Service	A	A		B	A		E	E		E		
Approach Delay (s)		8.7			3.5			59.0			59.0	
Approach LOS		A			A			E			E	
Intersection Summary												
HCM 2000 Control Delay			7.0			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			125.0			Sum of lost time (s)				15.8		
Intersection Capacity Utilization			73.9%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	2144	43	5	1249	2	17	2	13	3	0	1
Future Volume (vph)	13	2144	43	5	1249	2	17	2	13	3	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997							0.850		0.966	
Flt Protected								0.957			0.964	
Satd. Flow (prot)	0	3529	0	0	3539	0	0	1783	1583	0	1735	0
Flt Permitted		0.941			0.940			0.745			0.767	
Satd. Flow (perm)	0	3320	0	0	3327	0	0	1388	1583	0	1380	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3							60		60	
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		725			725			305			168	
Travel Time (s)		16.5			16.5			13.9			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	2330	47	5	1358	2	18	2	14	3	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2391	0	0	1365	0	0	20	14	0	4	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	20.6	20.6		20.6	20.6		12.5	12.5	12.5	12.5	12.5	
Total Split (s)	72.0	72.0		72.0	72.0		24.0	24.0	24.0	24.0	24.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		20.0%	20.0%	20.0%	20.0%	20.0%	
Maximum Green (s)	66.4	66.4		66.4	66.4		18.5	18.5	18.5	18.5	18.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.4	1.4		1.4	1.4		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.6			5.6			5.5	5.5		5.5	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		108.3			108.3			7.9	7.9		7.9	
Actuated g/C Ratio		0.90			0.90			0.07	0.07		0.07	
v/c Ratio		0.80			0.45			0.22	0.09		0.03	
Control Delay		7.0			2.4			58.6	1.1		0.2	
Queue Delay		0.9			0.2			0.0	0.0		0.0	
Total Delay		8.0			2.6			58.6	1.1		0.2	
LOS		A			A			E	A		A	
Approach Delay		8.0			2.6			34.9			0.3	
Approach LOS		A			A			C			A	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	20%
Maximum Green (s)	20.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		388			105			15	0		0	
Queue Length 95th (ft)		594			153			41	0		0	
Internal Link Dist (ft)		645			645			225			88	
Turn Bay Length (ft)												
Base Capacity (vph)		2996			3002			213	294		263	
Starvation Cap Reductn		318			730			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.89			0.60			0.09	0.05		0.02	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 54 (45%), Referenced to phase 2:EBWB, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 6.3

Intersection LOS: A

Intersection Capacity Utilization 86.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

   Ø2 (R)	   Ø3	   Ø4
72 s	24 s	24 s

Lane Group	Ø3
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	

HCM Signalized Intersection Capacity Analysis

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Background AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	2144	43	5	1249	2	17	2	13	3	0	1
Future Volume (vph)	13	2144	43	5	1249	2	17	2	13	3	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6			5.6			5.5	5.5		5.5	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.97	
Flt Protected		1.00			1.00			0.96	1.00		0.96	
Satd. Flow (prot)		3528			3538			1783	1583		1735	
Flt Permitted		0.94			0.94			0.75	1.00		0.77	
Satd. Flow (perm)		3319			3327			1388	1583		1381	
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)	14	2330	47	5	1358	2	18	2	14	3	0	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	13	0	4	0
Lane Group Flow (vph)	0	2391	0	0	1365	0	0	20	1	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		103.8			103.8			5.1	5.1		5.1	
Effective Green, g (s)		103.8			103.8			5.1	5.1		5.1	
Actuated g/C Ratio		0.86			0.86			0.04	0.04		0.04	
Clearance Time (s)		5.6			5.6			5.5	5.5		5.5	
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		2870			2877			58	67		58	
v/s Ratio Prot												
v/s Ratio Perm		c0.72			0.41			c0.01	0.00		0.00	
v/c Ratio		0.83			0.47			0.34	0.01		0.00	
Uniform Delay, d1		3.9			1.9			55.8	55.0		55.0	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		3.0			0.6			3.6	0.1		0.0	
Delay (s)		6.9			2.4			59.4	55.1		55.0	
Level of Service		A			A			E	E		E	
Approach Delay (s)		6.9			2.4			57.6			55.0	
Approach LOS		A			A			E			E	
Intersection Summary												
HCM 2000 Control Delay			5.8									
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			120.0									
Intersection Capacity Utilization			86.5%									
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

Avon Village Center

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	1443	25	125	732	474	25	350	370	414	180	98
Future Volume (vph)	141	1443	25	125	732	474	25	350	370	414	180	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	300		0	150		150	150		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.997			0.941				0.850		0.947	
Flt Protected	0.950			0.950				0.997		0.950		
Satd. Flow (prot)	1770	3529	0	1770	3330	0	0	1857	1583	3433	1764	0
Flt Permitted	0.950			0.950				0.997		0.950		
Satd. Flow (perm)	1770	3529	0	1770	3330	0	0	1857	1583	3433	1764	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			132				47		15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		721			725			671			277	
Travel Time (s)		16.4			16.5			15.3			6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	1568	27	136	796	515	27	380	402	450	196	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	1595	0	136	1311	0	0	407	402	450	303	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	21.0		11.0	21.0		11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	76.0		24.0	87.0		30.0	30.0	24.0	32.0	32.0	
Total Split (%)	8.0%	46.9%		14.8%	53.7%		18.5%	18.5%	14.8%	19.8%	19.8%	
Maximum Green (s)	9.0	70.0		20.0	81.0		26.0	26.0	20.0	28.0	28.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0		0.0	-1.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	1.5	3.0		1.5	3.0		3.0	3.0	1.5	2.5	2.5	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	9.0	74.9		16.1	82.0			26.3	46.4	27.7	27.7	
Actuated g/C Ratio	0.06	0.46		0.10	0.51			0.16	0.29	0.17	0.17	
v/c Ratio	1.56	0.98		0.78	0.75			1.35	0.83	0.77	0.96	
Control Delay	341.0	59.9		98.4	31.5			227.6	62.5	73.6	104.6	
Queue Delay	0.0	0.0		0.0	3.3			0.0	0.0	0.0	0.0	
Total Delay	341.0	59.9		98.4	34.9			227.6	62.5	73.6	104.6	
LOS	F	E		F	C			F	E	E	F	
Approach Delay		84.5			40.9			145.6			86.1	
Approach LOS		F			D			F			F	

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	~228	866		143	521			~566	359	237	309	
Queue Length 95th (ft)	#384	#1089		216	612			#786	486	302	#505	
Internal Link Dist (ft)		641			645			591			197	
Turn Bay Length (ft)	300			300					150	150		
Base Capacity (vph)	98	1632		218	1750			301	523	593	317	
Starvation Cap Reductn	0	0		0	335			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	1.56	0.98		0.62	0.93			1.35	0.77	0.76	0.96	

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 162

Offset: 23 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.56

Intersection Signal Delay: 81.9

Intersection LOS: F

Intersection Capacity Utilization 97.0%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4	 Ø8
24 s	76 s	32 s	30 s
 Ø5	 Ø6 (R)		
13 s	87 s		

HCM Signalized Intersection Capacity Analysis

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	1443	25	125	732	474	25	350	370	414	180	98
Future Volume (vph)	141	1443	25	125	732	474	25	350	370	414	180	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.97	1.00	
Frt	1.00	1.00		1.00	0.94			1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3530		1770	3331			1857	1583	3433	1764	
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3530		1770	3331			1857	1583	3433	1764	
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)	153	1568	27	136	796	515	27	380	402	450	196	107
RTOR Reduction (vph)	0	1	0	0	65	0	0	0	35	0	12	0
Lane Group Flow (vph)	153	1594	0	136	1246	0	0	407	367	450	291	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Actuated Green, G (s)	9.0	73.9		16.1	81.0			26.3	42.4	27.7	27.7	
Effective Green, g (s)	9.0	74.9		16.1	82.0			26.3	42.4	27.7	27.7	
Actuated g/C Ratio	0.06	0.46		0.10	0.51			0.16	0.26	0.17	0.17	
Clearance Time (s)	4.0	6.0		4.0	6.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	3.0		1.5	3.0			3.0	1.5	2.5	2.5	
Lane Grp Cap (vph)	98	1632		175	1686			301	453	587	301	
v/s Ratio Prot	c0.09	c0.45		0.08	0.37			c0.22	c0.08	0.13	c0.16	
v/s Ratio Perm									0.15			
v/c Ratio	1.56	0.98		0.78	0.74			1.35	0.81	0.77	0.97	
Uniform Delay, d1	76.5	42.7		71.2	31.6			67.8	56.0	64.1	66.7	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	296.1	17.4		17.7	2.9			178.8	10.0	5.7	42.1	
Delay (s)	372.6	60.2		88.9	34.5			246.7	66.1	69.8	108.8	
Level of Service	F	E		F	C			F	E	E	F	
Approach Delay (s)		87.5			39.6			156.9			85.5	
Approach LOS		F			D			F			F	
Intersection Summary												
HCM 2000 Control Delay			84.4			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			162.0			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			97.0%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
5: Routes 44/202 (West Main Street) & Woodford Ave

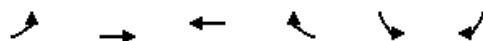
Avon Village Center
2020 Background AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	 		 	
Traffic Volume (vph)	32	1599	845	10	10	53
Future Volume (vph)	32	1599	845	10	10	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.887	
Flt Protected		0.999			0.992	
Satd. Flow (prot)	0	3536	3532	0	1639	0
Flt Permitted		0.999			0.992	
Satd. Flow (perm)	0	3536	3532	0	1639	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		441	721		336	
Travel Time (s)		10.0	14.0		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	1738	918	11	11	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1773	929	0	69	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 77.5%	ICU Level of Service D					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

5: Routes 44/202 (West Main Street) & Woodford Ave

Avon Village Center
2020 Background AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↔	↔↔		↔↔	
Traffic Volume (veh/h)	32	1599	845	10	10	53
Future Volume (Veh/h)	32	1599	845	10	10	53
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	1738	918	11	11	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		441	721			
pX, platoon unblocked	0.80				0.82	0.80
vC, conflicting volume	929				1862	464
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	400				502	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				97	93
cM capacity (veh/h)	920				394	864
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	614	1159	612	317	69	
Volume Left	35	0	0	0	11	
Volume Right	0	0	0	11	58	
cSH	920	1700	1700	1700	726	
Volume to Capacity	0.04	0.68	0.36	0.19	0.10	
Queue Length 95th (ft)	3	0	0	0	8	
Control Delay (s)	1.0	0.0	0.0	0.0	10.5	
Lane LOS	A				B	
Approach Delay (s)	0.3		0.0		10.5	
Approach LOS					B	
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			77.5%		ICU Level of Service	D
Analysis Period (min)			15			

Lanes, Volumes, Timings

Avon Village Center

6: Avon Office Park Drive/Ensign Drive & Routes 44/202 (West Main Street)

2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	1613	24	61	787	50	5	0	6	12	3	52
Future Volume (vph)	54	1613	24	61	787	50	5	0	6	12	3	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		80
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.992			0.921				0.850
Flt Protected		0.998			0.997			0.980			0.961	
Satd. Flow (prot)	0	3442	0	0	3539	0	0	1715	0	0	1782	1599
Flt Permitted		0.891			0.707			0.869			0.758	
Satd. Flow (perm)	0	3073	0	0	2510	0	0	1521	0	0	1406	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			13			121				121
Link Speed (mph)		35			35			25			30	
Link Distance (ft)		1384			441			348			1521	
Travel Time (s)		27.0			8.6			9.5			34.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	0%	0%	0%	3%	0%	1%
Adj. Flow (vph)	59	1753	26	66	855	54	5	0	7	13	3	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1838	0	0	975	0	0	12	0	0	16	57
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Detector Phase	1	1 2 3		2 3	2 3		4	4		4	4	4
Switch Phase												
Minimum Initial (s)	5.0						7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	9.0						11.0	11.0		11.0	11.0	11.0
Total Split (s)	9.0						22.0	22.0		22.0	22.0	22.0
Total Split (%)	10.0%						24.4%	24.4%		24.4%	24.4%	24.4%
Maximum Green (s)	5.0						18.0	18.0		18.0	18.0	18.0
Yellow Time (s)	3.0						3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0						1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)							0.0			0.0		0.0
Total Lost Time (s)							4.0			4.0		4.0
Lead/Lag	Lead						Lag	Lag		Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0						2.0	2.0		2.0	2.0	2.0
Recall Mode	None						None	None		None	None	None
Act Effct Green (s)		75.2			60.7			7.0			7.0	7.0
Actuated g/C Ratio		0.84			0.67			0.08			0.08	0.08
v/c Ratio		0.70			0.57			0.05			0.15	0.24
Control Delay		5.4			10.4			0.5			41.9	2.4
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		5.4			10.4			0.5			41.9	2.4
LOS		A			B			A			D	A

Lane Group	Ø2	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	6.0
Minimum Split (s)	18.0	12.0
Total Split (s)	46.0	13.0
Total Split (%)	51%	14%
Maximum Green (s)	43.0	7.0
Yellow Time (s)	2.0	4.0
All-Red Time (s)	1.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	3.0
Recall Mode	C-Max	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		

Lanes, Volumes, Timings

Avon Village Center

6: Avon Office Park Drive/Ensign Drive & Routes 44/202 (West Main Street)

2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		5.4			10.4			0.5			11.1	
Approach LOS		A			B			A			B	
Queue Length 50th (ft)		101			154			0			9	0
Queue Length 95th (ft)		250			213			0			29	1
Internal Link Dist (ft)		1304			361			268			1441	
Turn Bay Length (ft)												80
Base Capacity (vph)		2630			1698			401			281	416
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.70			0.57			0.03			0.06	0.14

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 7.2

Intersection LOS: A

Intersection Capacity Utilization 87.9%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 6: Avon Office Park Drive/Ensign Drive & Routes 44/202 (West Main Street)



Lane Group	Ø2	Ø3
Approach Delay		
Approach LOS		
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		

HCM Signalized Intersection Capacity Analysis

Avon Village Center

6: Avon Office Park Drive/Ensign Drive & Routes 44/202 (West Main Street)

2020 Background AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	1613	24	61	787	50	5	0	6	12	3	52
Future Volume (vph)	54	1613	24	61	787	50	5	0	6	12	3	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		3.0			2.0			4.0			4.0	4.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frt		1.00			0.99			0.92			1.00	0.85
Flt Protected		1.00			1.00			0.98			0.96	1.00
Satd. Flow (prot)		3443			3537			1715			1782	1599
Flt Permitted		0.89			0.71			0.87			0.76	1.00
Satd. Flow (perm)		3072			2508			1520			1406	1599
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)	59	1753	26	66	855	54	5	0	7	13	3	57
RTOR Reduction (vph)	0	1	0	0	5	0	0	11	0	0	0	53
Lane Group Flow (vph)	0	1837	0	0	970	0	0	1	0	0	16	4
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	0%	0%	0%	3%	0%	1%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Actuated Green, G (s)		70.4			56.0			5.6			5.6	5.6
Effective Green, g (s)		70.4			57.0			5.6			5.6	5.6
Actuated g/C Ratio		0.78			0.63			0.06			0.06	0.06
Clearance Time (s)								4.0			4.0	4.0
Vehicle Extension (s)								2.0			2.0	2.0
Lane Grp Cap (vph)		2466			1588			94			87	99
v/s Ratio Prot		c0.13										
v/s Ratio Perm		c0.46			c0.39			0.00			c0.01	0.00
v/c Ratio		0.74			0.61			0.01			0.18	0.04
Uniform Delay, d1		5.1			9.9			39.6			40.0	39.7
Progression Factor		1.76			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.8			0.7			0.0			0.4	0.1
Delay (s)		9.9			10.6			39.6			40.4	39.7
Level of Service		A			B			D			D	D
Approach Delay (s)		9.9			10.6			39.6			39.9	
Approach LOS		A			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			11.0			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			87.9%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

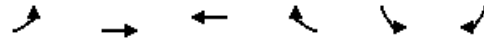
Lanes, Volumes, Timings
7: Routes 44/202 (West Main Street) & Climax Road

Avon Village Center
2020 Background AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	120	1558	730	124	133	44
Future Volume (vph)	120	1558	730	124	133	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	75
Storage Lanes	1			0	1	1
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.978			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3461	0	1770	1583
Flt Permitted	0.274				0.950	
Satd. Flow (perm)	510	3539	3461	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			34			48
Link Speed (mph)		30	30		30	
Link Distance (ft)		2387	1384		840	
Travel Time (s)		54.3	31.5		19.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1693	793	135	145	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	130	1693	928	0	145	48
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2					4
Detector Phase	1	2	2		4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0		7.0	7.0
Minimum Split (s)	8.1	22.3	22.3		11.5	11.5
Total Split (s)	11.0	56.0	56.0		23.0	23.0
Total Split (%)	12.2%	62.2%	62.2%		25.6%	25.6%
Maximum Green (s)	7.9	48.7	48.7		18.5	18.5
Yellow Time (s)	3.0	4.2	4.2		3.0	3.0
All-Red Time (s)	0.1	3.1	3.1		1.5	1.5
Lost Time Adjust (s)	0.0	-1.2	-1.2		0.0	0.0
Total Lost Time (s)	3.1	6.1	6.1		4.5	4.5
Lead/Lag	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	1.5	1.5		2.0	2.0
Recall Mode	None	C-Max	C-Max		None	None
Act Effct Green (s)	67.4	57.0	57.0		11.9	11.9
Actuated g/C Ratio	0.75	0.63	0.63		0.13	0.13
v/c Ratio	0.27	0.75	0.42		0.62	0.19
Control Delay	2.7	7.3	15.2		47.9	11.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	2.7	7.3	15.2		47.9	11.7
LOS	A	A	B		D	B
Approach Delay		7.0	15.2		38.9	
Approach LOS		A	B		D	

Lanes, Volumes, Timings
 7: Routes 44/202 (West Main Street) & Climax Road

Avon Village Center
 2020 Background AM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 50th (ft)	6	65	178		79	0
Queue Length 95th (ft)	m14	120	261		132	29
Internal Link Dist (ft)		2307	1304		760	
Turn Bay Length (ft)	125					75
Base Capacity (vph)	500	2243	2206		363	363
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.26	0.75	0.42		0.40	0.13

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 11.7
 Intersection Capacity Utilization 59.3%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

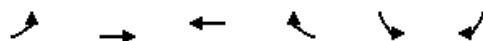
Splits and Phases: 7: Routes 44/202 (West Main Street) & Climax Road

Ø1	Ø2 (R)	Ø4
11 s	56 s	23 s

HCM Signalized Intersection Capacity Analysis

7: Routes 44/202 (West Main Street) & Climax Road

Avon Village Center
2020 Background AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	120	1558	730	124	133	44
Future Volume (vph)	120	1558	730	124	133	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	6.1	6.1		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3462		1770	1583
Flt Permitted	0.27	1.00	1.00		0.95	1.00
Satd. Flow (perm)	510	3539	3462		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	130	1693	793	135	145	48
RTOR Reduction (vph)	0	0	12	0	0	42
Lane Group Flow (vph)	130	1693	916	0	145	6
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2					4
Actuated Green, G (s)	63.2	55.8	55.8		11.9	11.9
Effective Green, g (s)	63.2	57.0	57.0		11.9	11.9
Actuated g/C Ratio	0.70	0.63	0.63		0.13	0.13
Clearance Time (s)	3.1	7.3	7.3		4.5	4.5
Vehicle Extension (s)	3.0	1.5	1.5		2.0	2.0
Lane Grp Cap (vph)	461	2241	2192		234	209
v/s Ratio Prot	c0.02	c0.48	0.26		c0.08	
v/s Ratio Perm	0.17					0.00
v/c Ratio	0.28	0.76	0.42		0.62	0.03
Uniform Delay, d1	4.6	11.6	8.2		36.9	34.0
Progression Factor	0.62	0.42	1.70		1.00	1.00
Incremental Delay, d2	0.2	1.7	0.5		3.4	0.0
Delay (s)	3.1	6.5	14.5		40.3	34.0
Level of Service	A	A	B		D	C
Approach Delay (s)		6.3	14.5		38.8	
Approach LOS		A	B		D	
Intersection Summary						
HCM 2000 Control Delay			11.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.69			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.7
Intersection Capacity Utilization			59.3%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings

Avon Village Center

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1612	17	13	754	5	10	0	7	15	1	1
Future Volume (vph)	2	1612	17	13	754	5	10	0	7	15	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.999				0.850		0.992	
Flt Protected					0.999			0.950			0.957	
Satd. Flow (prot)	0	3532	0	0	3532	0	0	1770	1583	0	1768	0
Flt Permitted		0.954			0.923			0.870			0.821	
Satd. Flow (perm)	0	3370	0	0	3263	0	0	1621	1583	0	1517	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1				78		1	
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		753			2387			175			290	
Travel Time (s)		17.1			54.3			8.0			13.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1752	18	14	820	5	11	0	8	16	1	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1772	0	0	839	0	0	11	8	0	18	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		1	1 2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	20.4	20.4		11.0			9.3	9.3	9.3	9.3	9.3	
Total Split (s)	57.0	57.0		11.0			22.0	22.0	22.0	22.0	22.0	
Total Split (%)	63.3%	63.3%		12.2%			24.4%	24.4%	24.4%	24.4%	24.4%	
Maximum Green (s)	51.6	51.6		7.0			17.7	17.7	17.7	17.7	17.7	
Yellow Time (s)	4.1	4.1		3.0			3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.3	1.3		1.0			1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0						0.0	0.0		0.0	
Total Lost Time (s)		5.4						4.3	4.3		4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None			None	None	None	None	None	
Act Effct Green (s)		63.3			74.9			6.9	6.9		6.9	
Actuated g/C Ratio		0.70			0.83			0.08	0.08		0.08	
v/c Ratio		0.75			0.31			0.09	0.04		0.15	
Control Delay		13.3			2.2			39.5	0.4		39.8	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		13.3			2.2			39.5	0.4		39.8	
LOS		B			A			D	A		D	
Approach Delay		13.3			2.2			23.0			39.8	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)		347			56			6	0		9	
Queue Length 95th (ft)		534			61			22	0		30	
Internal Link Dist (ft)		673			2307			95			210	

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		2369			2744			318	373		299	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.75			0.31			0.03	0.02		0.06	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 85 (94%), Referenced to phase 2:EBWB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 10.0

Intersection LOS: B

Intersection Capacity Utilization 65.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)



HCM Signalized Intersection Capacity Analysis

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Background AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1612	17	13	754	5	10	0	7	15	1	1
Future Volume (vph)	2	1612	17	13	754	5	10	0	7	15	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4			4.0			4.3	4.3		4.3	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.99	
Flt Protected		1.00			1.00			0.95	1.00		0.96	
Satd. Flow (prot)		3534			3533			1770	1583		1770	
Flt Permitted		0.95			0.92			0.87	1.00		0.82	
Satd. Flow (perm)		3373			3263			1620	1583		1518	
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)	2	1752	18	14	820	5	11	0	8	16	1	1
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	8	0	1	0
Lane Group Flow (vph)	0	1771	0	0	839	0	0	11	0	0	17	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		61.5			71.7			4.6	4.6		4.6	
Effective Green, g (s)		61.5			71.7			4.6	4.6		4.6	
Actuated g/C Ratio		0.68			0.80			0.05	0.05		0.05	
Clearance Time (s)		5.4						4.3	4.3		4.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		2304			2630			82	80		77	
v/s Ratio Prot					c0.04							
v/s Ratio Perm		c0.53			0.22			0.01	0.00		c0.01	
v/c Ratio		0.77			0.32			0.13	0.01		0.22	
Uniform Delay, d1		9.5			2.5			40.8	40.5		41.0	
Progression Factor		1.00			1.30			1.00	1.00		1.00	
Incremental Delay, d2		2.5			0.1			0.7	0.0		1.5	
Delay (s)		12.0			3.3			41.5	40.6		42.4	
Level of Service		B			A			D	D		D	
Approach Delay (s)		12.0			3.3			41.1			42.4	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			9.7									HCM 2000 Level of Service A
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			90.0									Sum of lost time (s) 13.7
Intersection Capacity Utilization			65.2%									ICU Level of Service C
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
9: Climax Road & Bickford Drive

Avon Village Center
2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2	17	27	2	7	12	128	104	74	133	3
Future Volume (vph)	0	2	17	27	2	7	12	128	104	74	133	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.878			0.972			0.942			0.998	
Flt Protected					0.964			0.998			0.983	
Satd. Flow (prot)	0	1635	0	0	1745	0	0	1751	0	0	1827	0
Flt Permitted					0.964			0.998			0.983	
Satd. Flow (perm)	0	1635	0	0	1745	0	0	1751	0	0	1827	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		690			1363			840			2084	
Travel Time (s)		15.7			31.0			19.1			47.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2	18	29	2	8	13	139	113	80	145	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	39	0	0	265	0	0	228	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 43.7%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

9: Climax Road & Bickford Drive

Avon Village Center
2020 Background AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	17	27	2	7	12	128	104	74	133	3
Future Volume (Veh/h)	0	2	17	27	2	7	12	128	104	74	133	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2	18	29	2	8	13	139	113	80	145	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								840				
pX, platoon unblocked												
vC, conflicting volume	537	584	146	547	530	196	148			252		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	537	584	146	547	530	196	148			252		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	98	93	100	99	99			94		
cM capacity (veh/h)	425	394	901	414	423	846	1434			1313		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	20	39	265	228								
Volume Left	0	29	13	80								
Volume Right	18	8	113	3								
cSH	798	463	1434	1313								
Volume to Capacity	0.03	0.08	0.01	0.06								
Queue Length 95th (ft)	2	7	1	5								
Control Delay (s)	9.6	13.5	0.4	3.1								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.6	13.5	0.4	3.1								
Approach LOS	A	B										
Intersection Summary												
Average Delay			2.8									
Intersection Capacity Utilization			43.7%	ICU Level of Service						A		
Analysis Period (min)			15									

Lanes, Volumes, Timings

10: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center

2020 Background AM

							Ø1	Ø2
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Lane Configurations								
Traffic Volume (vph)	80	55	354	107	103	289		
Future Volume (vph)	80	55	354	107	103	289		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	0.945		0.969					
Flt Protected	0.971					0.987		
Satd. Flow (prot)	1709	0	1805	0	0	1839		
Flt Permitted	0.971					0.783		
Satd. Flow (perm)	1709	0	1805	0	0	1459		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR)	30		24					
Link Speed (mph)	30		30			30		
Link Distance (ft)	2084		500			483		
Travel Time (s)	47.4		11.4			11.0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	87	60	385	116	112	314		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	147	0	501	0	0	426		
Turn Type	Prot		NA		D.P+P	NA		
Protected Phases	4		1 2		8	1 2 8	1	2
Permitted Phases					1 2			
Detector Phase	4		1 2		8	1 2 8		
Switch Phase								
Minimum Initial (s)	6.0				2.0		2.0	15.0
Minimum Split (s)	20.0				19.0		19.0	20.0
Total Split (s)	22.0				20.0		20.0	39.0
Total Split (%)	21.8%				19.8%		20%	39%
Maximum Green (s)	18.0				17.0		17.0	35.0
Yellow Time (s)	3.0				2.0		2.0	3.0
All-Red Time (s)	1.0				1.0		1.0	1.0
Lost Time Adjust (s)	0.0							
Total Lost Time (s)	4.0							
Lead/Lag	Lag				Lead		Lag	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes
Vehicle Extension (s)	1.5				2.0		2.0	5.0
Recall Mode	None				None		Min	C-Min
Walk Time (s)	5.0				5.0		5.0	5.0
Flash Dont Walk (s)	11.0				11.0		11.0	11.0
Pedestrian Calls (#/hr)	0				0		0	0
Act Effct Green (s)	11.0		71.2			80.0		
Actuated g/C Ratio	0.11		0.70			0.79		
v/c Ratio	0.69		0.39			0.36		
Control Delay	50.3		8.3			3.4		
Queue Delay	0.0		0.0			0.0		
Total Delay	50.3		8.3			3.4		
LOS	D		A			A		
Approach Delay	50.3		8.3			3.4		
Approach LOS	D		A			A		

Lanes, Volumes, Timings
 10: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
 2020 Background AM

	↙	↖	↑	↗	↘	↓		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Queue Length 50th (ft)	73		88			46		
Queue Length 95th (ft)	131		247			99		
Internal Link Dist (ft)	2004		420			403		
Turn Bay Length (ft)								
Base Capacity (vph)	329		1272			1251		
Starvation Cap Reductn	0		0			0		
Spillback Cap Reductn	0		0			0		
Storage Cap Reductn	0		0			0		
Reduced v/c Ratio	0.45		0.39			0.34		

Intersection Summary

Area Type: Other
 Cycle Length: 101
 Actuated Cycle Length: 101
 Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 12.1
 Intersection Capacity Utilization 63.8%
 Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B

Splits and Phases: 10: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

↙ Ø8	↖ Ø1	↑ Ø2 (R)	↘ Ø4
20 s	20 s	39 s	22 s

HCM Signalized Intersection Capacity Analysis

10: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Background AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	80	55	354	107	103	289
Future Volume (vph)	80	55	354	107	103	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		3.0			3.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.94		0.97			1.00
Flt Protected	0.97		1.00			0.99
Satd. Flow (prot)	1710		1805			1839
Flt Permitted	0.97		1.00			0.78
Satd. Flow (perm)	1710		1805			1459
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	60	385	116	112	314
RTOR Reduction (vph)	27	0	7	0	0	0
Lane Group Flow (vph)	120	0	494	0	0	426
Turn Type	Prot		NA		D.P+P	NA
Protected Phases	4		1 2		8	1 2 8
Permitted Phases					1 2	
Actuated Green, G (s)	11.0		70.2			79.0
Effective Green, g (s)	11.0		70.2			79.0
Actuated g/C Ratio	0.11		0.70			0.78
Clearance Time (s)	4.0					
Vehicle Extension (s)	1.5					
Lane Grp Cap (vph)	186		1254			1174
v/s Ratio Prot	c0.07		c0.27			c0.03
v/s Ratio Perm						0.25
v/c Ratio	0.65		0.39			0.36
Uniform Delay, d1	43.1		6.5			3.3
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	5.7		0.1			0.1
Delay (s)	48.8		6.5			3.4
Level of Service	D		A			A
Approach Delay (s)	48.8		6.5			3.4
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			11.1		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.44			
Actuated Cycle Length (s)			101.0		Sum of lost time (s)	14.0
Intersection Capacity Utilization			63.8%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
11: Ensign Drive & Bickford Drive

Avon Village Center
2020 Background AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	164	16	1	103	68	35
Future Volume (vph)	164	16	1	103	68	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988				0.954	
Flt Protected	0.956					
Satd. Flow (prot)	1759	0	0	1863	1777	0
Flt Permitted	0.956					
Satd. Flow (perm)	1759	0	0	1863	1777	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1363			1521	767	
Travel Time (s)	31.0			34.6	17.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	178	17	1	112	74	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	195	0	0	113	112	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

11: Ensign Drive & Bickford Drive

Avon Village Center
2020 Background AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	164	16	1	103	68	35
Future Volume (Veh/h)	164	16	1	103	68	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	178	17	1	112	74	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	207	93	112			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	207	93	112			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	77	98	100			
cM capacity (veh/h)	781	964	1478			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	195	113	112			
Volume Left	178	1	0			
Volume Right	17	0	38			
cSH	794	1478	1700			
Volume to Capacity	0.25	0.00	0.07			
Queue Length 95th (ft)	24	0	0			
Control Delay (s)	11.0	0.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.0	0.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		5.1				
Intersection Capacity Utilization		22.9%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
12: Ensign Drive & Fisher Drive

Avon Village Center
2020 Background AM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	8	4	99	26	25	242
Future Volume (vph)	8	4	99	26	25	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.958				0.878	
Flt Protected				0.962	0.995	
Satd. Flow (prot)	1785	0	0	1792	1627	0
Flt Permitted				0.962	0.995	
Satd. Flow (perm)	1785	0	0	1792	1627	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	465			1084	767	
Travel Time (s)	10.6			24.6	17.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	4	108	28	27	263
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	136	290	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	36.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

12: Ensign Drive & Fisher Drive

Avon Village Center
2020 Background AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	8	4	99	26	25	242
Future Volume (Veh/h)	8	4	99	26	25	242
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	4	108	28	27	263
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1084		
pX, platoon unblocked						
vC, conflicting volume			13		255	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			13		255	11
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		96	75
cM capacity (veh/h)			1606		684	1070
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	13	136	290			
Volume Left	0	108	27			
Volume Right	4	0	263			
cSH	1700	1606	1017			
Volume to Capacity	0.01	0.07	0.29			
Queue Length 95th (ft)	0	5	30			
Control Delay (s)	0.0	6.0	9.9			
Lane LOS		A	A			
Approach Delay (s)	0.0	6.0	9.9			
Approach LOS			A			
Intersection Summary						
Average Delay			8.4			
Intersection Capacity Utilization			36.5%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings

13: Routes 10/202 (Simsbury Road) & Fisher Drive/Mountain View Ave

Avon Village Center

2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	35	13	56	20	26	11	948	10	48	669	94
Future Volume (vph)	202	35	13	56	20	26	11	948	10	48	669	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			50			50		
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
Frt		0.993			0.916			0.998			0.982	
Flt Protected		0.961		0.950			0.950			0.950		
Satd. Flow (prot)	0	1778	0	1770	1706	0	1770	1859	0	1770	1829	0
Flt Permitted		0.733		0.682			0.154			0.080		
Satd. Flow (perm)	0	1356	0	1270	1706	0	287	1859	0	149	1829	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			28			1			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1084			225			1618			665	
Travel Time (s)		24.6			5.1			36.8			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	38	14	61	22	28	12	1030	11	52	727	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	272	0	61	50	0	12	1041	0	52	829	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		3.0	25.0		3.0	25.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		8.0	31.0		8.0	31.0	
Total Split (s)	31.0	31.0		31.0	31.0		8.0	51.0		8.0	51.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		8.9%	56.7%		8.9%	56.7%	
Maximum Green (s)	27.0	27.0		27.0	27.0		4.0	47.0		4.0	47.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	
Recall Mode	Min	Min		Min	Min		None	Min		None	Min	
Act Effct Green (s)		25.8		25.8	25.8		49.4	47.1		51.0	50.2	
Actuated g/C Ratio		0.30		0.30	0.30		0.58	0.55		0.60	0.59	
v/c Ratio		0.66		0.16	0.09		0.05	1.02		0.32	0.77	
Control Delay		35.6		24.4	13.5		7.4	54.5		12.1	20.3	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		35.6		24.4	13.5		7.4	54.5		12.1	20.3	
LOS		D		C	B		A	D		B	C	
Approach Delay		35.6			19.5			54.0			19.8	
Approach LOS		D			B			D			B	

Lanes, Volumes, Timings

13: Routes 10/202 (Simsbury Road) & Fisher Drive/Mountain View Ave

Avon Village Center

2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		133		25	9		2	~636		10	280	
Queue Length 95th (ft)		223		56	35		9	#907		25	#638	
Internal Link Dist (ft)		1004			145			1538			585	
Turn Bay Length (ft)							100			125		
Base Capacity (vph)		430		401	558		235	1024		164	1077	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.63		0.15	0.09		0.05	1.02		0.32	0.77	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 85.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 37.2

Intersection LOS: D

Intersection Capacity Utilization 78.0%

ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 13: Routes 10/202 (Simsbury Road) & Fisher Drive/Mountain View Ave

 Ø1	 Ø2	 Ø4
8 s	51 s	31 s
 Ø5	 Ø6	
8 s	51 s	

HCM Signalized Intersection Capacity Analysis

13: Routes 10/202 (Simsbury Road) & Fisher Drive/Mountain View Ave

Avon Village Center
2020 Background AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	35	13	56	20	26	11	948	10	48	669	94
Future Volume (vph)	202	35	13	56	20	26	11	948	10	48	669	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.99		1.00	0.92		1.00	1.00		1.00	0.98	
Flt Protected		0.96		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1778		1770	1706		1770	1860		1770	1828	
Flt Permitted		0.73		0.68	1.00		0.15	1.00		0.08	1.00	
Satd. Flow (perm)		1356		1270	1706		287	1860		148	1828	
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)	220	38	14	61	22	28	12	1030	11	52	727	102
RTOR Reduction (vph)	0	2	0	0	20	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	270	0	61	30	0	12	1041	0	52	824	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		25.8		25.8	25.8		49.5	48.7		52.5	50.2	
Effective Green, g (s)		25.8		25.8	25.8		49.5	48.7		52.5	50.2	
Actuated g/C Ratio		0.29		0.29	0.29		0.56	0.55		0.59	0.57	
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		5.0		5.0	5.0		1.5	5.0		1.5	5.0	
Lane Grp Cap (vph)		393		368	495		173	1020		129	1033	
v/s Ratio Prot					0.02		0.00	c0.56		c0.01	0.45	
v/s Ratio Perm		c0.20		0.05			0.04			0.23		
v/c Ratio		0.69		0.17	0.06		0.07	1.02		0.40	0.80	
Uniform Delay, d1		27.9		23.5	22.8		13.1	20.0		20.0	15.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.3		0.4	0.1		0.1	33.4		0.8	5.0	
Delay (s)		34.2		23.9	22.9		13.1	53.4		20.8	20.3	
Level of Service		C		C	C		B	D		C	C	
Approach Delay (s)		34.2			23.4			52.9			20.3	
Approach LOS		C			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			36.9			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			88.8			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			78.0%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
14: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Background AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	2	12	2	0	1	13	940	12	10	678	50
Future Volume (vph)	28	2	12	2	0	1	13	940	12	10	678	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.955			0.998			0.991	
Flt Protected		0.968			0.968			0.999			0.999	
Satd. Flow (prot)	0	1733	0	0	1722	0	0	1857	0	0	1844	0
Flt Permitted		0.968			0.968			0.999			0.999	
Satd. Flow (perm)	0	1733	0	0	1722	0	0	1857	0	0	1844	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		526			234			198			1618	
Travel Time (s)		12.0			5.3			4.5			36.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	2	13	2	0	1	14	1022	13	11	737	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	3	0	0	1049	0	0	802	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 67.6%

ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

14: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Background AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	2	12	2	0	1	13	940	12	10	678	50
Future Volume (Veh/h)	28	2	12	2	0	1	13	940	12	10	678	50
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	2	13	2	0	1	14	1022	13	11	737	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)							664					
pX, platoon unblocked	0.84	0.84		0.84	0.84	0.84				0.84		
vC, conflicting volume	1844	1849	764	1856	1870	1028	791			1035		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1908	1914	764	1923	1939	940	791			948		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	29	96	97	95	100	100	98			98		
cM capacity (veh/h)	42	55	404	39	53	269	829			610		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	45	3	1049	802								
Volume Left	30	2	14	11								
Volume Right	13	1	13	54								
cSH	58	55	829	610								
Volume to Capacity	0.78	0.05	0.02	0.02								
Queue Length 95th (ft)	84	4	1	1								
Control Delay (s)	172.4	74.7	0.5	0.5								
Lane LOS	F	F	A	A								
Approach Delay (s)	172.4	74.7	0.5	0.5								
Approach LOS	F	F										
Intersection Summary												
Average Delay				4.7								
Intersection Capacity Utilization				67.6%	ICU Level of Service				C			
Analysis Period (min)				15								

Appendix C

Intersection Capacity Analysis Worksheets 2020 Combined Traffic Volumes Weekday Morning Peak Hour

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1667	574	63	926	50	454	273	154	70	239	80
Future Volume (vph)	90	1667	574	63	926	50	454	273	154	70	239	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		0	300		0	325		0	0		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.992			0.946				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3511	0	3433	1762	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3511	0	3433	1762	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			356		5			19				95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			1189			682			591	
Travel Time (s)		20.0			27.0			15.5			13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1812	624	68	1007	54	493	297	167	76	260	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	1812	624	68	1061	0	493	464	0	76	260	87
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Detector Phase	1	6	6	5	2		7 4	7 8		4	8	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	20.0					3.0	5.0	3.0
Minimum Split (s)	9.1	22.0	22.0	9.1	27.0					7.0	26.7	9.1
Total Split (s)	21.9	81.3	81.3	12.4	71.8					10.0	26.7	21.9
Total Split (%)	14.6%	54.2%	54.2%	8.3%	47.9%					6.7%	17.8%	14.6%
Maximum Green (s)	15.8	74.3	74.3	6.3	64.8					6.0	21.0	15.8
Yellow Time (s)	3.1	5.0	5.0	3.1	5.0					3.0	3.3	3.1
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0					1.0	2.4	3.0
Lost Time Adjust (s)	-2.1	-3.0	-3.0	-2.1	-3.0					0.0	-1.7	-2.1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes	Yes
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Recall Mode	None	Min	Min	None	Min					None	None	None
Walk Time (s)											20.0	
Flash Dont Walk (s)											1.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)	14.0	77.3	77.3	8.4	71.7		25.6	42.1		6.0	22.5	40.5
Actuated g/C Ratio	0.09	0.52	0.52	0.06	0.48		0.17	0.28		0.04	0.15	0.27
v/c Ratio	0.59	0.99	0.63	0.69	0.63		0.84	0.91		1.09	0.93	0.18
Control Delay	79.3	55.1	13.3	101.7	31.6		73.9	73.3		195.4	101.4	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	79.3	55.1	13.3	101.7	31.6		73.9	73.3		195.4	101.4	6.7

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined AM

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	10.1
Total Split (s)	19.6
Total Split (%)	13%
Maximum Green (s)	14.5
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	1.5
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	E	B	F	C		E	E		F	F	A
Approach Delay		45.7			35.9			73.6			98.8	
Approach LOS		D			D			E			F	
Queue Length 50th (ft)	93	905	181	67	402		243	426		~82	255	0
Queue Length 95th (ft)	154	#1097	310	#145	500		#326	#634		#194	#426	36
Internal Link Dist (ft)		799			1109			602			511	
Turn Bay Length (ft)	285			300			325					
Base Capacity (vph)	211	1826	989	99	1682		586	511		70	282	535
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.46	0.99	0.63	0.69	0.63		0.84	0.91		1.09	0.92	0.16

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 149.8

Natural Cycle: 130

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 53.3

Intersection LOS: D

Intersection Capacity Utilization 90.5%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

 Ø1	 Ø2	 Ø4	 Ø7	 Ø8
21.9 s	71.8 s	10 s	19.6 s	26.7 s
 Ø5	 Ø6			
12.4 s	81.3 s			

Lane Group	Ø7
LOS	
Approach Delay	
Approach LOS	
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	

HCM Signalized Intersection Capacity Analysis

1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1667	574	63	926	50	454	273	154	70	239	80
Future Volume (vph)	90	1667	574	63	926	50	454	273	154	70	239	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3512		3433	1762		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3512		3433	1762		1770	1863	1583
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)	98	1812	624	68	1007	54	493	297	167	76	260	87
RTOR Reduction (vph)	0	0	172	0	3	0	0	14	0	0	0	66
Lane Group Flow (vph)	98	1812	452	68	1058	0	493	450	0	76	260	21
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Actuated Green, G (s)	11.9	74.3	74.3	6.3	68.7		24.5	40.4		6.0	20.8	32.7
Effective Green, g (s)	14.0	77.3	77.3	8.4	71.7		22.7	41.5		6.0	22.5	36.9
Actuated g/C Ratio	0.09	0.52	0.52	0.06	0.48		0.15	0.28		0.04	0.15	0.25
Clearance Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Lane Grp Cap (vph)	165	1826	816	99	1680		520	488		70	279	389
v/s Ratio Prot	c0.06	c0.51		0.04	0.30		c0.14	c0.26		0.04	0.14	0.01
v/s Ratio Perm			0.29									0.01
v/c Ratio	0.59	0.99	0.55	0.69	0.63		0.95	0.92		1.09	0.93	0.06
Uniform Delay, d1	65.2	36.0	24.6	69.4	29.1		63.0	52.6		71.9	62.9	43.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.8	19.2	0.7	18.0	1.1		26.4	22.8		133.0	35.7	0.0
Delay (s)	69.0	55.1	25.2	87.4	30.2		89.4	75.4		204.9	98.6	43.2
Level of Service	E	E	C	F	C		F	E		F	F	D
Approach Delay (s)		48.3			33.7			82.6			106.3	
Approach LOS		D			C			F			F	
Intersection Summary												
HCM 2000 Control Delay			56.4			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			149.8			Sum of lost time (s)			20.6			
Intersection Capacity Utilization			90.5%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	2237	6	21	1401	2	1	0	18	1	0	0
Future Volume (vph)	9	2237	6	21	1401	2	1	0	18	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	130		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.850				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	0	1770	3539	0	1770	1583	0	1770	1863	0
Flt Permitted	0.155			0.038			0.769			0.769		
Satd. Flow (perm)	289	3539	0	71	3539	0	1432	1583	0	1432	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								155				
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		724			1561			285			144	
Travel Time (s)		16.5			35.5			13.0			6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	2432	7	23	1523	2	1	0	20	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	2439	0	23	1525	0	1	20	0	1	0	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Detector Phase	1	6		5	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	8.1	22.2		8.0	22.2		21.5	21.5		21.5	21.5	
Total Split (s)	15.0	80.0		20.0	80.0		25.0	25.0		25.0	25.0	
Total Split (%)	12.0%	64.0%		16.0%	64.0%		20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	10.9	73.8		16.0	73.8		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.1	4.3		3.0	4.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.9		1.0	1.9		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	-0.1	-2.2		0.0	-2.2		-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Act Effct Green (s)	111.5	109.6		113.2	113.6		7.6	7.6		7.6		
Actuated g/C Ratio	0.89	0.88		0.91	0.91		0.06	0.06		0.06		
v/c Ratio	0.03	0.79		0.16	0.47		0.01	0.08		0.01		
Control Delay	1.2	8.6		3.5	2.5		55.0	0.7		55.0		
Queue Delay	0.0	1.0		0.0	0.0		0.0	0.0		0.0		
Total Delay	1.2	9.7		3.5	2.5		55.0	0.7		55.0		
LOS	A	A		A	A		D	A		D		
Approach Delay		9.6			2.5			3.3			55.0	
Approach LOS		A			A			A			D	

Lanes, Volumes, Timings
2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	1	554		2	93		1	0		1		
Queue Length 95th (ft)	2	708		4	233		7	0		7		
Internal Link Dist (ft)		644			1481			205			64	
Turn Bay Length (ft)	150			130								
Base Capacity (vph)	394	3103		282	3216		240	394		240		
Starvation Cap Reductn	0	383		0	0		0	0		0		
Spillback Cap Reductn	0	0		0	0		0	0		0		
Storage Cap Reductn	0	0		0	0		0	0		0		
Reduced v/c Ratio	0.03	0.90		0.08	0.47		0.00	0.05		0.00		

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 125

Offset: 54 (43%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 6.9

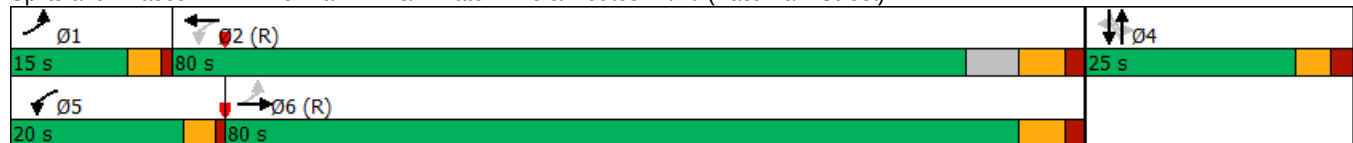
Intersection LOS: A

Intersection Capacity Utilization 73.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)



HCM Signalized Intersection Capacity Analysis

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	2237	6	21	1401	2	1	0	18	1	0	0
Future Volume (vph)	9	2237	6	21	1401	2	1	0	18	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00		
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00		
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95		
Satd. Flow (prot)	1770	3538		1770	3539		1770	1583		1770		
Flt Permitted	0.15	1.00		0.04	1.00		0.77	1.00		0.77		
Satd. Flow (perm)	288	3538		71	3539		1433	1583		1433		
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)	10	2432	7	23	1523	2	1	0	20	1	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	19	0	0	0	0
Lane Group Flow (vph)	10	2439	0	23	1525	0	1	1	0	1	0	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Actuated Green, G (s)	103.2	102.0		107.9	104.3		3.7	3.7		3.7		
Effective Green, g (s)	103.4	104.2		107.9	106.5		5.2	5.2		5.2		
Actuated g/C Ratio	0.83	0.83		0.86	0.85		0.04	0.04		0.04		
Clearance Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		
Lane Grp Cap (vph)	253	2949		110	3015		59	65		59		
v/s Ratio Prot	0.00	c0.69		c0.01	0.43			0.00				
v/s Ratio Perm	0.03			0.17			c0.00			0.00		
v/c Ratio	0.04	0.83		0.21	0.51		0.02	0.01		0.02		
Uniform Delay, d1	2.2	5.6		13.2	2.4		57.4	57.4		57.4		
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Incremental Delay, d2	0.1	2.8		0.9	0.6		0.1	0.1		0.1		
Delay (s)	2.2	8.4		14.2	3.0		57.6	57.5		57.6		
Level of Service	A	A		B	A		E	E		E		
Approach Delay (s)		8.4			3.2			57.5			57.6	
Approach LOS		A			A			E			E	
Intersection Summary												
HCM 2000 Control Delay			6.6			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			125.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			73.7%			ICU Level of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	2248	43	5	1378	2	17	2	13	3	0	1
Future Volume (vph)	13	2248	43	5	1378	2	17	2	13	3	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997							0.850		0.966	
Flt Protected								0.957			0.964	
Satd. Flow (prot)	0	3529	0	0	3539	0	0	1783	1583	0	1735	0
Flt Permitted		0.939			0.940			0.745			0.773	
Satd. Flow (perm)	0	3313	0	0	3327	0	0	1388	1583	0	1391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3							60		60	
Link Speed (mph)		30			30			15			30	
Link Distance (ft)		691			724			207			170	
Travel Time (s)		15.7			16.5			9.4			3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	2443	47	5	1498	2	18	2	14	3	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2504	0	0	1505	0	0	20	14	0	4	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	20.6	20.6		20.6	20.6		12.5	12.5	12.5	12.5	12.5	
Total Split (s)	72.0	72.0		72.0	72.0		24.0	24.0	24.0	24.0	24.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		20.0%	20.0%	20.0%	20.0%	20.0%	
Maximum Green (s)	66.4	66.4		66.4	66.4		18.5	18.5	18.5	18.5	18.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.4	1.4		1.4	1.4		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		-1.6			-1.6			-1.5	-1.5		-1.5	
Total Lost Time (s)		4.0			4.0			4.0	4.0		4.0	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		109.2			109.2			9.4	9.4		9.4	
Actuated g/C Ratio		0.91			0.91			0.08	0.08		0.08	
v/c Ratio		0.83			0.50			0.19	0.08		0.02	
Control Delay		7.6			2.3			55.4	0.8		0.2	
Queue Delay		1.3			0.2			0.0	0.0		0.0	
Total Delay		8.9			2.6			55.4	0.8		0.2	
LOS		A			A			E	A		A	
Approach Delay		8.9			2.6			32.9			0.3	
Approach LOS		A			A			C			A	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	20%
Maximum Green (s)	20.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		406			108			15	0		0	
Queue Length 95th (ft)		653			162			40	0		0	
Internal Link Dist (ft)		611			644			127			90	
Turn Bay Length (ft)												
Base Capacity (vph)		3016			3028			231	313		281	
Starvation Cap Reductn		291			698			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.92			0.65			0.09	0.04		0.01	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 54 (45%), Referenced to phase 2:EBWB, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 6.7

Intersection LOS: A

Intersection Capacity Utilization 85.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

   Ø2 (R)	   Ø3	   Ø4
72 s	24 s	24 s

Lane Group	Ø3
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	

HCM Signalized Intersection Capacity Analysis

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	2248	43	5	1378	2	17	2	13	3	0	1
Future Volume (vph)	13	2248	43	5	1378	2	17	2	13	3	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.97	
Flt Protected		1.00			1.00			0.96	1.00		0.96	
Satd. Flow (prot)		3528			3538			1783	1583		1735	
Flt Permitted		0.94			0.94			0.74	1.00		0.77	
Satd. Flow (perm)		3314			3327			1387	1583		1391	
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)	14	2443	47	5	1498	2	18	2	14	3	0	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	13	0	4	0
Lane Group Flow (vph)	0	2504	0	0	1505	0	0	20	1	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		103.8			103.8			5.1	5.1		5.1	
Effective Green, g (s)		105.4			105.4			6.6	6.6		6.6	
Actuated g/C Ratio		0.88			0.88			0.05	0.05		0.05	
Clearance Time (s)		5.6			5.6			5.5	5.5		5.5	
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		2910			2922			76	87		76	
v/s Ratio Prot												
v/s Ratio Perm		c0.76			0.45			c0.01	0.00		0.00	
v/c Ratio		0.86			0.52			0.26	0.01		0.00	
Uniform Delay, d1		3.6			1.6			54.4	53.6		53.6	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		3.6			0.7			1.9	0.0		0.0	
Delay (s)		7.2			2.3			56.2	53.6		53.6	
Level of Service		A			A			E	D		D	
Approach Delay (s)		7.2			2.3			55.2			53.6	
Approach LOS		A			A			E			D	
Intersection Summary												
HCM 2000 Control Delay			5.8									
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			120.0									
Intersection Capacity Utilization			85.6%									
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	1505	31	125	828	507	35	353	370	453	183	98
Future Volume (vph)	141	1505	31	125	828	507	35	353	370	453	183	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	300		0	150		150	150		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.997			0.943				0.850		0.948	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1770	3529	0	1770	3337	0	0	1855	1583	3433	1766	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1770	3529	0	1770	3337	0	0	1855	1583	3433	1766	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			116				47		14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		738			691			688			488	
Travel Time (s)		16.8			15.7			15.6			11.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	1636	34	136	900	551	38	384	402	492	199	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	1670	0	136	1451	0	0	422	402	492	306	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	21.0		11.0	21.0		11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	76.0		24.0	87.0		30.0	30.0	24.0	32.0	32.0	
Total Split (%)	8.0%	46.9%		14.8%	53.7%		18.5%	18.5%	14.8%	19.8%	19.8%	
Maximum Green (s)	9.0	70.0		20.0	81.0		26.0	26.0	20.0	28.0	28.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0		0.0	-1.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	1.5	3.0		1.5	3.0		3.0	3.0	1.5	2.5	2.5	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	9.0	74.9		16.1	82.0			26.0	46.1	28.0	28.0	
Actuated g/C Ratio	0.06	0.46		0.10	0.51			0.16	0.28	0.17	0.17	
v/c Ratio	1.56	1.02		0.78	0.83			1.42	0.83	0.83	0.97	
Control Delay	341.0	70.6		98.4	36.3			254.2	63.0	77.5	105.4	
Queue Delay	0.0	0.0		0.0	20.1			0.0	0.0	0.0	0.0	
Total Delay	341.0	70.6		98.4	56.5			254.2	63.0	77.5	105.4	
LOS	F	E		F	E			F	E	E	F	
Approach Delay		93.3			60.1			160.9			88.2	
Approach LOS		F			E			F			F	

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	~228	~991		143	634			~600	359	263	314	
Queue Length 95th (ft)	#384	#1174		216	739			#821	486	#335	#515	
Internal Link Dist (ft)		658			611			608			408	
Turn Bay Length (ft)	300			300					150	150		
Base Capacity (vph)	98	1632		218	1746			297	521	593	316	
Starvation Cap Reductn	0	0		0	337			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	1.56	1.02		0.62	1.03			1.42	0.77	0.83	0.97	

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 162

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

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.56

Intersection Signal Delay: 93.1

Intersection LOS: F

Intersection Capacity Utilization 99.8%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4	 Ø8
24 s	76 s	32 s	30 s
 Ø5	 Ø6 (R)		
13 s	87 s		

HCM Signalized Intersection Capacity Analysis

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	1505	31	125	828	507	35	353	370	453	183	98
Future Volume (vph)	141	1505	31	125	828	507	35	353	370	453	183	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.97	1.00	
Frt	1.00	1.00		1.00	0.94			1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3528		1770	3338			1854	1583	3433	1765	
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3528		1770	3338			1854	1583	3433	1765	
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)	153	1636	34	136	900	551	38	384	402	492	199	107
RTOR Reduction (vph)	0	1	0	0	57	0	0	0	35	0	12	0
Lane Group Flow (vph)	153	1669	0	136	1394	0	0	422	367	492	294	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Actuated Green, G (s)	9.0	73.9		16.1	81.0			26.0	42.1	28.0	28.0	
Effective Green, g (s)	9.0	74.9		16.1	82.0			26.0	42.1	28.0	28.0	
Actuated g/C Ratio	0.06	0.46		0.10	0.51			0.16	0.26	0.17	0.17	
Clearance Time (s)	4.0	6.0		4.0	6.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	3.0		1.5	3.0			3.0	1.5	2.5	2.5	
Lane Grp Cap (vph)	98	1631		175	1689			297	450	593	305	
v/s Ratio Prot	c0.09	c0.47		0.08	0.42			c0.23	c0.08	0.14	c0.17	
v/s Ratio Perm									0.15			
v/c Ratio	1.56	1.02		0.78	0.83			1.42	0.82	0.83	0.97	
Uniform Delay, d1	76.5	43.5		71.2	33.9			68.0	56.3	64.7	66.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	296.1	28.4		17.7	4.7			208.0	10.4	9.2	41.8	
Delay (s)	372.6	71.9		88.9	38.7			276.0	66.7	73.9	108.3	
Level of Service	F	E		F	D			F	E	E	F	
Approach Delay (s)		97.2			43.0			173.9			87.1	
Approach LOS		F			D			F			F	
Intersection Summary												
HCM 2000 Control Delay			91.0			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.10									
Actuated Cycle Length (s)			162.0			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			99.8%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
5: Routes 44/202 (West Main Street) & Woodford Ave

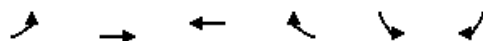
Avon Village Center
2020 Combined AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	 		 	
Traffic Volume (vph)	32	1664	951	11	13	53
Future Volume (vph)	32	1664	951	11	13	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.891	
Flt Protected		0.999			0.990	
Satd. Flow (prot)	0	3536	3532	0	1643	0
Flt Permitted		0.999			0.990	
Satd. Flow (perm)	0	3536	3532	0	1643	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		455	738		205	
Travel Time (s)		10.3	14.4		4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	1809	1034	12	14	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1844	1046	0	72	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 79.4%	ICU Level of Service D					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

5: Routes 44/202 (West Main Street) & Woodford Ave

Avon Village Center
2020 Combined AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↔	↔↔		↔↔	
Traffic Volume (veh/h)	32	1664	951	11	13	53
Future Volume (Veh/h)	32	1664	951	11	13	53
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	1809	1034	12	14	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		455	738			
pX, platoon unblocked	0.71				0.78	0.71
vC, conflicting volume	1046				2014	523
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	235				48	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				98	92
cM capacity (veh/h)	940				719	766
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	638	1206	689	357	72	
Volume Left	35	0	0	0	14	
Volume Right	0	0	0	12	58	
cSH	940	1700	1700	1700	756	
Volume to Capacity	0.04	0.71	0.41	0.21	0.10	
Queue Length 95th (ft)	3	0	0	0	8	
Control Delay (s)	1.0	0.0	0.0	0.0	10.3	
Lane LOS	A				B	
Approach Delay (s)	0.3		0.0		10.3	
Approach LOS					B	
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			79.4%		ICU Level of Service	D
Analysis Period (min)			15			

Lanes, Volumes, Timings

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↑		↑	↑	↑
Traffic Volume (vph)	76	1628	24	61	811	132	5	0	6	59	3	68
Future Volume (vph)	76	1628	24	61	811	132	5	0	6	59	3	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		80
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.998			0.980			0.921				0.850
Flt Protected		0.998			0.997			0.980			0.954	
Satd. Flow (prot)	0	3440	0	0	3490	0	0	1715	0	1770	1688	1583
Flt Permitted		0.810			0.691			0.882			0.727	
Satd. Flow (perm)	0	2792	0	0	2419	0	0	1543	0	1770	1287	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			33			109				109
Link Speed (mph)		35			35			25			30	
Link Distance (ft)		1357			455			348			203	
Travel Time (s)		26.4			8.9			9.5			4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	83	1770	26	66	882	143	5	0	7	64	3	74
Shared Lane Traffic (%)										100%		
Lane Group Flow (vph)	0	1879	0	0	1091	0	0	12	0	0	67	74
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Detector Phase	1	1 2 3		2 3	2 3		4	4		4	4	4
Switch Phase												
Minimum Initial (s)	5.0						7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	8.0						11.0	11.0		11.0	11.0	11.0
Total Split (s)	9.0						22.0	22.0		22.0	22.0	22.0
Total Split (%)	10.0%						24.4%	24.4%		24.4%	24.4%	24.4%
Maximum Green (s)	6.0						18.0	18.0		18.0	18.0	18.0
Yellow Time (s)	3.0						3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	0.0						1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)								0.0		0.0	0.0	0.0
Total Lost Time (s)								4.0		4.0	4.0	4.0
Lead/Lag	Lead						Lag	Lag		Lag	Lag	Lag
Lead-Lag Optimize?	Yes						Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0						2.0	2.0		2.0	2.0	2.0
Recall Mode	None						None	None		None	None	None
Act Effct Green (s)		68.8			54.0			9.4			9.4	9.4
Actuated g/C Ratio		0.76			0.60			0.10			0.10	0.10
v/c Ratio		0.84			0.75			0.05			0.50	0.28
Control Delay		11.1			16.6			0.4			50.2	5.8
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		11.1			16.6			0.4			50.2	5.8
LOS		B			B			A			D	A

Lanes, Volumes, Timings
6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center
2020 Combined AM

Lane Group	Ø2	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	6.0
Minimum Split (s)	18.0	12.0
Total Split (s)	46.0	13.0
Total Split (%)	51%	14%
Maximum Green (s)	43.0	7.0
Yellow Time (s)	2.0	4.0
All-Red Time (s)	1.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	3.0
Recall Mode	C-Max	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		

Lanes, Volumes, Timings

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		11.1			16.6			0.4			26.9	
Approach LOS		B			B			A			C	
Queue Length 50th (ft)		206			210			0			38	0
Queue Length 95th (ft)		#270			294			0			78	19
Internal Link Dist (ft)		1277			375			268			123	
Turn Bay Length (ft)												80
Base Capacity (vph)		2241			1464			395			257	403
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.84			0.75			0.03			0.26	0.18

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 13.7

Intersection LOS: B

Intersection Capacity Utilization 93.9%

ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)



Lane Group	Ø2	Ø3
Approach Delay		
Approach LOS		
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		

HCM Signalized Intersection Capacity Analysis

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center
2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	1628	24	61	811	132	5	0	6	59	3	68
Future Volume (vph)	76	1628	24	61	811	132	5	0	6	59	3	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		5.0			5.0			4.0			4.0	4.0
Lane Util. Factor		0.95			0.95			1.00			0.95	1.00
Frt		1.00			0.98			0.92			1.00	0.85
Flt Protected		1.00			1.00			0.98			0.95	1.00
Satd. Flow (prot)		3439			3491			1715			1689	1583
Flt Permitted		0.81			0.69			0.88			0.73	1.00
Satd. Flow (perm)		2791			2419			1543			1287	1583
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)	83	1770	26	66	882	143	5	0	7	64	3	74
RTOR Reduction (vph)	0	1	0	0	15	0	0	11	0	0	0	67
Lane Group Flow (vph)	0	1878	0	0	1076	0	0	1	0	0	67	7
Heavy Vehicles (%)	2%	1%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Actuated Green, G (s)		69.0			52.2			8.0			8.0	8.0
Effective Green, g (s)		65.0			50.2			8.0			8.0	8.0
Actuated g/C Ratio		0.72			0.56			0.09			0.09	0.09
Clearance Time (s)								4.0			4.0	4.0
Vehicle Extension (s)								2.0			2.0	2.0
Lane Grp Cap (vph)		2122			1349			137			114	140
v/s Ratio Prot		c0.15										
v/s Ratio Perm		c0.49			0.45			0.00			c0.05	0.00
v/c Ratio		0.89			0.80			0.01			0.59	0.05
Uniform Delay, d1		9.6			15.9			37.4			39.4	37.5
Progression Factor		1.07			1.00			1.00			1.00	1.00
Incremental Delay, d2		3.6			3.4			0.0			4.9	0.1
Delay (s)		13.9			19.2			37.4			44.3	37.6
Level of Service		B			B			D			D	D
Approach Delay (s)		13.9			19.2			37.4			40.8	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			17.1			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			22.0			
Intersection Capacity Utilization			93.9%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

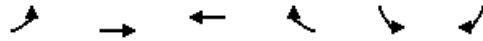
Lanes, Volumes, Timings
7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	180	1559	733	165	165	88
Future Volume (vph)	180	1559	733	165	165	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11
Storage Length (ft)	125			100	215	300
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Frt			0.972			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3440	0	3319	1531
Flt Permitted	0.262				0.950	
Satd. Flow (perm)	488	3539	3440	0	3319	1531
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			48			96
Link Speed (mph)		30	30		30	
Link Distance (ft)		2398	1357		443	
Travel Time (s)		54.5	30.8		10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	1695	797	179	179	96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	196	1695	976	0	179	96
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2					4
Detector Phase	1	2	2		4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0		7.0	7.0
Minimum Split (s)	8.0	22.3	22.3		11.5	11.5
Total Split (s)	11.0	56.0	56.0		23.0	23.0
Total Split (%)	12.2%	62.2%	62.2%		25.6%	25.6%
Maximum Green (s)	8.0	48.7	48.7		18.5	18.5
Yellow Time (s)	3.0	4.2	4.2		3.0	3.0
All-Red Time (s)	0.0	3.1	3.1		1.5	1.5
Lost Time Adjust (s)	1.0	-1.2	-1.2		-0.5	-0.5
Total Lost Time (s)	4.0	6.1	6.1		4.0	4.0
Lead/Lag	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	1.5	1.5		1.5	1.5
Recall Mode	None	C-Max	C-Max		None	None
Act Effct Green (s)	68.4	59.3	59.3		9.6	9.6
Actuated g/C Ratio	0.76	0.66	0.66		0.11	0.11
v/c Ratio	0.42	0.73	0.43		0.51	0.39
Control Delay	4.0	6.4	14.9		42.7	12.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	4.0	6.4	14.9		42.7	12.8
LOS	A	A	B		D	B
Approach Delay		6.2	14.9		32.3	

Lanes, Volumes, Timings
 7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
 2020 Combined AM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach LOS		A	B		C	
Queue Length 50th (ft)	13	74	203		50	0
Queue Length 95th (ft)	m27	135	277		80	43
Internal Link Dist (ft)		2318	1277		363	
Turn Bay Length (ft)	125				215	300
Base Capacity (vph)	480	2330	2282		700	398
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.41	0.73	0.43		0.26	0.24

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 11.2
 Intersection Capacity Utilization 57.3%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

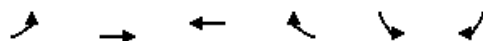
Splits and Phases: 7: Routes 44/202 (West Main Street) & Bickford Dr.



HCM Signalized Intersection Capacity Analysis

7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	180	1559	733	165	165	88
Future Volume (vph)	180	1559	733	165	165	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	11
Total Lost time (s)	4.0	6.1	6.1		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		0.97	1.00
Flt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3442		3319	1531
Flt Permitted	0.26	1.00	1.00		0.95	1.00
Satd. Flow (perm)	488	3539	3442		3319	1531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	1695	797	179	179	96
RTOR Reduction (vph)	0	0	16	0	0	86
Lane Group Flow (vph)	196	1695	960	0	179	10
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2					4
Actuated Green, G (s)	66.1	58.1	58.1		9.1	9.1
Effective Green, g (s)	64.1	59.3	59.3		9.6	9.6
Actuated g/C Ratio	0.71	0.66	0.66		0.11	0.11
Clearance Time (s)	3.0	7.3	7.3		4.5	4.5
Vehicle Extension (s)	3.0	1.5	1.5		1.5	1.5
Lane Grp Cap (vph)	447	2331	2267		354	163
v/s Ratio Prot	c0.03	c0.48	0.28		c0.05	
v/s Ratio Perm	0.28					0.01
v/c Ratio	0.44	0.73	0.42		0.51	0.06
Uniform Delay, d1	4.5	10.1	7.3		38.0	36.2
Progression Factor	0.94	0.46	1.96		1.00	1.00
Incremental Delay, d2	0.5	1.3	0.4		0.4	0.1
Delay (s)	4.7	6.0	14.7		38.4	36.2
Level of Service	A	A	B		D	D
Approach Delay (s)		5.9	14.7		37.6	
Approach LOS		A	B		D	
Intersection Summary						
HCM 2000 Control Delay			11.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	14.1
Intersection Capacity Utilization			57.3%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

Avon Village Center

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1673	17	13	803	5	10	0	7	15	1	1
Future Volume (vph)	2	1673	17	13	803	5	10	0	7	15	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.999			0.999				0.850		0.992	
Fl _t Protected					0.999			0.950			0.957	
Satd. Flow (prot)	0	3536	0	0	3532	0	0	1770	1583	0	1768	0
Fl _t Permitted		0.954			0.923			0.816			0.771	
Satd. Flow (perm)	0	3373	0	0	3263	0	0	1520	1583	0	1425	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1				78		1	
Link Speed (mph)		30			30			15			25	
Link Distance (ft)		769			2398			132			221	
Travel Time (s)		17.5			54.5			6.0			6.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1818	18	14	873	5	11	0	8	16	1	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1838	0	0	892	0	0	11	8	0	18	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		1	1 2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	21.4	21.4		11.0			20.3	20.3	20.3	20.3	20.3	
Total Split (s)	57.0	57.0		11.0			22.0	22.0	22.0	22.0	22.0	
Total Split (%)	63.3%	63.3%		12.2%			24.4%	24.4%	24.4%	24.4%	24.4%	
Maximum Green (s)	51.6	51.6		7.0			17.7	17.7	17.7	17.7	17.7	
Yellow Time (s)	4.1	4.1		3.0			3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.3	1.3		1.0			1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		-1.4						-0.3	-0.3		-0.3	
Total Lost Time (s)		4.0						4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None			None	None	None	None	None	
Act Effct Green (s)		64.4			74.9			7.2	7.2		7.2	
Actuated g/C Ratio		0.72			0.83			0.08	0.08		0.08	
v/c Ratio		0.76			0.32			0.09	0.04		0.16	
Control Delay		13.3			2.0			39.3	0.4		39.6	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		13.3			2.0			39.3	0.4		39.6	
LOS		B			A			D	A		D	
Approach Delay		13.3			2.0			22.9			39.6	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)		361			52			6	0		9	
Queue Length 95th (ft)		#568			55			22	0		30	
Internal Link Dist (ft)		689			2318			52			141	

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		2412			2745			304	379		285	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.76			0.32			0.04	0.02		0.06	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 85 (94%), Referenced to phase 2:EBWB, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 9.9

Intersection LOS: A

Intersection Capacity Utilization 65.2%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

 Ø1	 Ø2 (R)	 Ø4
11 s	57 s	22 s

HCM Signalized Intersection Capacity Analysis

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	2	1673	17	13	803	5	10	0	7	15	1	1	
Future Volume (vph)	2	1673	17	13	803	5	10	0	7	15	1	1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0			4.0			4.0		4.0			
Lane Util. Factor		0.95			0.95			1.00		1.00			
Frt		1.00			1.00			1.00		0.85			
Flt Protected		1.00			1.00			0.95		1.00			
Satd. Flow (prot)		3534			3533			1770		1583			
Flt Permitted		0.95			0.92			0.82		1.00			
Satd. Flow (perm)		3373			3263			1521		1583			
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)	2	1818	18	14	873	5	11	0	8	16	1	1	
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	8	0	1	0	
Lane Group Flow (vph)	0	1837	0	0	892	0	0	11	0	0	17	0	
Turn Type	Perm	NA		D.P+P		NA		Perm		NA	Perm	Perm	NA
Protected Phases		2		1		1 2		4			4		
Permitted Phases	2		2				4		4		4		
Actuated Green, G (s)		61.2				71.7		4.6		4.6		4.6	
Effective Green, g (s)		62.6				71.7		4.9		4.9		4.9	
Actuated g/C Ratio		0.70				0.80		0.05		0.05		0.05	
Clearance Time (s)		5.4						4.3		4.3		4.3	
Vehicle Extension (s)		3.0						3.0		3.0		3.0	
Lane Grp Cap (vph)		2346				2631		82		86		77	
v/s Ratio Prot						c0.04							
v/s Ratio Perm		c0.54				0.23		0.01		0.00		c0.01	
v/c Ratio		0.78				0.34		0.13		0.01		0.22	
Uniform Delay, d1		9.2				2.5		40.5		40.2		40.7	
Progression Factor		1.00				1.15		1.00		1.00		1.00	
Incremental Delay, d2		2.7				0.1		0.7		0.0		1.5	
Delay (s)		11.9				3.0		41.3		40.3		42.2	
Level of Service		B				A		D		D		D	
Approach Delay (s)		11.9				3.0		40.9				42.2	
Approach LOS		B				A		D				D	
Intersection Summary													
HCM 2000 Control Delay		9.4		HCM 2000 Level of Service				A					
HCM 2000 Volume to Capacity ratio		0.70											
Actuated Cycle Length (s)		90.0		Sum of lost time (s)				13.4					
Intersection Capacity Utilization		65.2%		ICU Level of Service				C					
Analysis Period (min)		15											

c Critical Lane Group

Lanes, Volumes, Timings
 9: Bickford Dr. & Site Driveway #1/Site Driveway #2

Avon Village Center
 2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	0	10	20	0	14	16	301	29	25	224	15
Future Volume (vph)	9	0	10	20	0	14	16	301	29	25	224	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	125		0
Storage Lanes	0		0	0		0	1		1	1		0
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
Frt		0.929			0.945				0.850		0.991	
Flt Protected		0.977			0.971		0.950			0.950		
Satd. Flow (prot)	0	1691	0	0	1709	0	1770	1863	1583	1770	1846	0
Flt Permitted		0.977			0.971		0.950			0.950		
Satd. Flow (perm)	0	1691	0	0	1709	0	1770	1863	1583	1770	1846	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			181			443			384	
Travel Time (s)		4.0			4.1			10.1			8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	0	11	22	0	15	17	327	32	27	243	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	37	0	17	327	32	27	259	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 30.8%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

9: Bickford Dr. & Site Driveway #1/Site Driveway #2

Avon Village Center
2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	0	10	20	0	14	16	301	29	25	224	15
Future Volume (Veh/h)	9	0	10	20	0	14	16	301	29	25	224	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	0	11	22	0	15	17	327	32	27	243	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								443				
pX, platoon unblocked												
vC, conflicting volume	681	698	251	669	674	327	259			359		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	681	698	251	669	674	327	259			359		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	94	100	98	99			98		
cM capacity (veh/h)	347	352	788	356	363	714	1306			1200		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	21	37	17	327	32	27	259					
Volume Left	10	22	17	0	0	27	0					
Volume Right	11	15	0	0	32	0	16					
cSH	491	447	1306	1700	1700	1200	1700					
Volume to Capacity	0.04	0.08	0.01	0.19	0.02	0.02	0.15					
Queue Length 95th (ft)	3	7	1	0	0	2	0					
Control Delay (s)	12.7	13.8	7.8	0.0	0.0	8.1	0.0					
Lane LOS	B	B	A			A						
Approach Delay (s)	12.7	13.8	0.4			0.8						
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			30.8%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
10: Bickford Dr. & Climax Road/Main St.

Avon Village Center
2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	6	185	3	2	0	164	153	7	0	72	12
Future Volume (vph)	83	6	185	3	2	0	164	153	7	0	72	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	100		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
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
Frt		0.909						0.997			0.981	
Flt Protected		0.985			0.971			0.975				
Satd. Flow (prot)	0	1668	0	0	1809	0	0	1811	0	0	1827	0
Flt Permitted		0.985			0.971			0.975				
Satd. Flow (perm)	0	1668	0	0	1809	0	0	1811	0	0	1827	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		271			628			384			208	
Travel Time (s)		6.2			14.3			8.7			4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	7	201	3	2	0	178	166	8	0	78	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	298	0	0	5	0	0	352	0	0	91	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 47.7%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
10: Bickford Dr. & Climax Road/Main St.

Avon Village Center
2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	83	6	185	3	2	0	164	153	7	0	72	12
Future Volume (veh/h)	83	6	185	3	2	0	164	153	7	0	72	12
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
Hourly flow rate (vph)	90	7	201	3	2	0	178	166	8	0	78	13
Approach Volume (veh/h)	298			5			352			91		
Crossing Volume (veh/h)	81			434			97			183		
High Capacity (veh/h)	1300			984			1284			1200		
High v/c (veh/h)	0.23			0.01			0.27			0.08		
Low Capacity (veh/h)	1084			799			1069			993		
Low v/c (veh/h)	0.27			0.01			0.33			0.09		
Intersection Summary												
Maximum v/c High	0.27											
Maximum v/c Low	0.33											
Intersection Capacity Utilization	47.7%			ICU Level of Service			A					

Intersection				
Intersection Delay, s/veh	6.6			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	298	5	352	91
Demand Flow Rate, veh/h	304	5	359	93
Vehicles Circulating, veh/h	83	443	99	187
Vehicles Exiting, veh/h	197	15	288	261
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	5.1	7.3	4.8
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	304	5	359	93
Cap Entry Lane, veh/h	1040	726	1023	937
Entry HV Adj Factor	0.980	0.992	0.980	0.983
Flow Entry, veh/h	298	5	352	91
Cap Entry, veh/h	1019	720	1003	921
V/C Ratio	0.292	0.007	0.351	0.099
Control Delay, s/veh	6.4	5.1	7.3	4.8
LOS	A	A	A	A
95th %tile Queue, veh	1	0	2	0

Lanes, Volumes, Timings
11: Climax Road & Bickford Ave. Ext.

Avon Village Center
2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	32	3	0	1	19	154	6	2	239	4
Future Volume (vph)	2	0	32	3	0	1	19	154	6	2	239	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.872			0.966			0.995			0.998	
Flt Protected		0.997			0.964			0.995				
Satd. Flow (prot)	0	1619	0	0	1735	0	0	1844	0	0	1859	0
Flt Permitted		0.997			0.964			0.995				
Satd. Flow (perm)	0	1619	0	0	1735	0	0	1844	0	0	1859	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		343			134			271			1156	
Travel Time (s)		7.8			3.0			6.2			26.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	0	35	3	0	1	21	167	7	2	260	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	4	0	0	195	0	0	266	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 31.6%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

11: Climax Road & Bickford Ave. Ext.

Avon Village Center

2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	32	3	0	1	19	154	6	2	239	4
Future Volume (Veh/h)	2	0	32	3	0	1	19	154	6	2	239	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	35	3	0	1	21	167	7	2	260	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage (veh)								2			2	
Upstream signal (ft)											1156	
pX, platoon unblocked												
vC, conflicting volume	480	482	262	514	480	170	264			174		
vC1, stage 1 conf vol	266	266		212	212							
vC2, stage 2 conf vol	214	216		301	268							
vCu, unblocked vol	480	482	262	514	480	170	264			174		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	95	99	100	100	98			100		
cM capacity (veh/h)	650	609	777	598	602	873	1300			1403		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	37	4	195	266								
Volume Left	2	3	21	2								
Volume Right	35	1	7	4								
cSH	769	649	1300	1403								
Volume to Capacity	0.05	0.01	0.02	0.00								
Queue Length 95th (ft)	4	0	1	0								
Control Delay (s)	9.9	10.6	1.0	0.1								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.9	10.6	1.0	0.1								
Approach LOS	A	B										
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			31.6%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Combined AM

							Ø1	Ø2
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Lane Configurations	W	W	T	T	L	L		
Traffic Volume (vph)	80	84	354	107	138	289		
Future Volume (vph)	80	84	354	107	138	289		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	0.931		0.969					
Flt Protected	0.976					0.984		
Satd. Flow (prot)	1693	0	1805	0	0	1833		
Flt Permitted	0.976					0.689		
Satd. Flow (perm)	1693	0	1805	0	0	1283		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR)	45		24					
Link Speed (mph)	35		40			40		
Link Distance (ft)	1156		405			551		
Travel Time (s)	22.5		6.9			9.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	87	91	385	116	150	314		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	178	0	501	0	0	464		
Turn Type	Prot		NA		D.P+P	NA		
Protected Phases	4		1 2		8	1 2 8	1	2
Permitted Phases					1 2			
Detector Phase	4		1 2		8	1 2 8		
Switch Phase								
Minimum Initial (s)	6.0				2.0		2.0	15.0
Minimum Split (s)	20.0				19.0		19.0	20.0
Total Split (s)	22.0				20.0		20.0	39.0
Total Split (%)	21.8%				19.8%		20%	39%
Maximum Green (s)	18.0				17.0		17.0	35.0
Yellow Time (s)	3.0				2.0		2.0	3.0
All-Red Time (s)	1.0				1.0		1.0	1.0
Lost Time Adjust (s)	0.0							
Total Lost Time (s)	4.0							
Lead/Lag	Lag				Lead		Lag	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes
Vehicle Extension (s)	1.5				2.0		2.0	5.0
Recall Mode	None				None		Min	Min
Walk Time (s)	5.0				5.0		5.0	5.0
Flash Dont Walk (s)	11.0				11.0		11.0	11.0
Pedestrian Calls (#/hr)	0				0		0	0
Act Effct Green (s)	10.9		48.0			56.3		
Actuated g/C Ratio	0.14		0.60			0.71		
v/c Ratio	0.66		0.46			0.48		
Control Delay	38.9		11.0			5.4		
Queue Delay	0.0		0.0			0.0		
Total Delay	38.9		11.0			5.4		
LOS	D		B			A		
Approach Delay	38.9		11.0			5.4		
Approach LOS	D		B			A		

Lanes, Volumes, Timings
 12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
 2020 Combined AM

	↖	↗	↑	↘	↙	↓		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Queue Length 50th (ft)	67		113			56		
Queue Length 95th (ft)	145		263			127		
Internal Link Dist (ft)	1076		325			471		
Turn Bay Length (ft)								
Base Capacity (vph)	434		1276			1191		
Starvation Cap Reductn	0		0			0		
Spillback Cap Reductn	0		0			0		
Storage Cap Reductn	0		0			0		
Reduced v/c Ratio	0.41		0.39			0.39		

Intersection Summary

Area Type: Other
 Cycle Length: 101
 Actuated Cycle Length: 79.8
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 13.1
 Intersection Capacity Utilization 67.6%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

↖ Ø8	↕ Ø1	↕ Ø2	↘ Ø4
20 s	20 s	39 s	22 s

HCM Signalized Intersection Capacity Analysis

12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Combined AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	80	84	354	107	138	289
Future Volume (vph)	80	84	354	107	138	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.93		0.97			1.00
Flt Protected	0.98		1.00			0.98
Satd. Flow (prot)	1693		1805			1833
Flt Permitted	0.98		1.00			0.69
Satd. Flow (perm)	1693		1805			1284
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	91	385	116	150	314
RTOR Reduction (vph)	39	0	10	0	0	0
Lane Group Flow (vph)	139	0	491	0	0	464
Turn Type	Prot		NA		D.P+P	NA
Protected Phases	4		1 2		8	1 2 8
Permitted Phases					1 2	
Actuated Green, G (s)	10.9		47.9			57.3
Effective Green, g (s)	10.9		46.9			55.3
Actuated g/C Ratio	0.14		0.59			0.70
Clearance Time (s)	4.0					
Vehicle Extension (s)	1.5					
Lane Grp Cap (vph)	233		1068			954
v/s Ratio Prot	c0.08		0.27			c0.05
v/s Ratio Perm						c0.29
v/c Ratio	0.60		0.46			0.49
Uniform Delay, d1	32.1		9.1			5.5
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	2.7		0.1			0.1
Delay (s)	34.8		9.2			5.6
Level of Service	C		A			A
Approach Delay (s)	34.8		9.2			5.6
Approach LOS	C		A			A
Intersection Summary						
HCM 2000 Control Delay			11.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			79.2		Sum of lost time (s)	17.0
Intersection Capacity Utilization			67.6%		ICU Level of Service	C
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings
13: Site Driveway #3/Residential Drive & Bickford Dr.

Avon Village Center
2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	221	14	4	71	1	8	0	3	3	0	3
Future Volume (vph)	1	221	14	4	71	1	8	0	3	3	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.998			0.966			0.932	
Flt Protected					0.998			0.964			0.976	
Satd. Flow (prot)	0	1848	0	0	1855	0	0	1735	0	0	1694	0
Flt Permitted					0.998			0.964			0.976	
Satd. Flow (perm)	0	1848	0	0	1855	0	0	1735	0	0	1694	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			328			185			396	
Travel Time (s)		4.4			7.5			4.2			9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	240	15	4	77	1	9	0	3	3	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	256	0	0	82	0	0	12	0	0	6	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 22.8%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 13: Site Driveway #3/Residential Drive & Bickford Dr.

Avon Village Center
2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	221	14	4	71	1	8	0	3	3	0	3
Future Volume (Veh/h)	1	221	14	4	71	1	8	0	3	3	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	240	15	4	77	1	9	0	3	3	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	78			255			338	336	248	338	342	78
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	78			255			338	336	248	338	342	78
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1520			1310			612	583	791	612	578	983
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	256	82	12	6								
Volume Left	1	4	9	3								
Volume Right	15	1	3	3								
cSH	1520	1310	649	754								
Volume to Capacity	0.00	0.00	0.02	0.01								
Queue Length 95th (ft)	0	0	1	1								
Control Delay (s)	0.0	0.4	10.7	9.8								
Lane LOS	A	A	B	A								
Approach Delay (s)	0.0	0.4	10.7	9.8								
Approach LOS			B	A								
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			22.8%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
14: N. Main St./Retail Drive #2 & Bickford Dr.

Avon Village Center
2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	210	0	6	72	5	0	4	3	3	2	10
Future Volume (vph)	17	210	0	6	72	5	0	4	3	3	2	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
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
Frt					0.991			0.942			0.907	
Flt Protected		0.996		0.950							0.991	
Satd. Flow (prot)	0	1855	0	1770	1846	0	0	1755	0	0	1674	0
Flt Permitted		0.996		0.950							0.991	
Satd. Flow (perm)	0	1855	0	1770	1846	0	0	1755	0	0	1674	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		328			250			360			304	
Travel Time (s)		7.5			5.7			8.2			6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	228	0	7	78	5	0	4	3	3	2	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	246	0	7	83	0	0	7	0	0	16	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 28.9%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

14: N. Main St./Retail Drive #2 & Bickford Dr.

Avon Village Center
2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	210	0	6	72	5	0	4	3	3	2	10
Future Volume (Veh/h)	17	210	0	6	72	5	0	4	3	3	2	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	228	0	7	78	5	0	4	3	3	2	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	83			228			368	361	228	364	358	80
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	83			228			368	361	228	364	358	80
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			100	99	100	99	100	99
cM capacity (veh/h)	1514			1340			573	556	811	579	558	980
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	246	7	83	7	16							
Volume Left	18	7	0	0	3							
Volume Right	0	0	5	3	11							
cSH	1514	1340	1700	643	800							
Volume to Capacity	0.01	0.01	0.05	0.01	0.02							
Queue Length 95th (ft)	1	0	0	1	2							
Control Delay (s)	0.6	7.7	0.0	10.7	9.6							
Lane LOS	A	A		B	A							
Approach Delay (s)	0.6	0.6		10.7	9.6							
Approach LOS				B	A							
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			28.9%		ICU Level of Service			A				
Analysis Period (min)			15									

Lanes, Volumes, Timings
15: N. Main St. & Site Driveway #4

Avon Village Center
2020 Combined AM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	3	4	25	6	2
Future Volume (vph)	12	3	4	25	6	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.975		0.882			
Flt Protected	0.961					0.963
Satd. Flow (prot)	1745	0	1643	0	0	1794
Flt Permitted	0.961					0.963
Satd. Flow (perm)	1745	0	1643	0	0	1794
Link Speed (mph)	30		30			30
Link Distance (ft)	248		233			360
Travel Time (s)	5.6		5.3			8.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	3	4	27	7	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	31	0	0	9
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 15.3%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

15: N. Main St. & Site Driveway #4

Avon Village Center
2020 Combined AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	3	4	25	6	2
Future Volume (Veh/h)	12	3	4	25	6	2
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	3	4	27	7	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	34	18			31	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	34	18			31	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	975	1061			1582	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	16	31	9			
Volume Left	13	0	7			
Volume Right	3	27	0			
cSH	990	1700	1582			
Volume to Capacity	0.02	0.02	0.00			
Queue Length 95th (ft)	1	0	0			
Control Delay (s)	8.7	0.0	5.7			
Lane LOS	A		A			
Approach Delay (s)	8.7	0.0	5.7			
Approach LOS	A					
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			15.3%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
16: N. Main St. & Main St.

Avon Village Center
2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	0	0	0	0	0	0	16	0	0	8	6
Future Volume (vph)	13	0	0	0	0	0	0	16	0	0	8	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.941											
Flt Protected	0.950											
Satd. Flow (prot)	0	1770	0	0	1863	0	0	1863	0	0	1753	0
Flt Permitted	0.950											
Satd. Flow (perm)	0	1770	0	0	1863	0	0	1863	0	0	1753	0
Link Speed (mph)	30											
Link Distance (ft)	628											
Travel Time (s)	14.3											
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	0	0	0	0	0	0	17	0	0	9	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	0	0	0	17	0	0	16	0
Sign Control	Free											

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 13.3% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

16: N. Main St. & Main St.

Avon Village Center

2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	0	0	0	0	0	0	16	0	0	8	6
Future Volume (Veh/h)	13	0	0	0	0	0	0	16	0	0	8	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	0	0	0	0	0	0	17	0	0	9	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0			0			40	28	0	36	28	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			40	28	0	36	28	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	98	100	100	99	99
cM capacity (veh/h)	1623			1623			945	858	1085	948	858	1085
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	0	17	16								
Volume Left	14	0	0	0								
Volume Right	0	0	0	7								
cSH	1623	1700	858	944								
Volume to Capacity	0.01	0.00	0.02	0.02								
Queue Length 95th (ft)	1	0	2	1								
Control Delay (s)	7.2	0.0	9.3	8.9								
Lane LOS	A		A	A								
Approach Delay (s)	7.2	0.0	9.3	8.9								
Approach LOS			A	A								
Intersection Summary												
Average Delay				8.5								
Intersection Capacity Utilization				13.3%	ICU Level of Service				A			
Analysis Period (min)				15								

Lanes, Volumes, Timings
17: Ensign Drive & N. Main St.

Avon Village Center
2020 Combined AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	8	16	193	116	0
Future Volume (vph)	0	8	16	193	116	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1770	1863	1863	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1770	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	636			203	406	
Travel Time (s)	14.5			4.6	9.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	9	17	210	126	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	0	17	210	126	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 20.2%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

17: Ensign Drive & N. Main St.

Avon Village Center

2020 Combined AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	8	16	193	116	0
Future Volume (Veh/h)	0	8	16	193	116	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	9	17	210	126	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)				203		
pX, platoon unblocked						
vC, conflicting volume	370	126	126			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	370	126	126			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	623	924	1460			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	9	17	210	126		
Volume Left	0	17	0	0		
Volume Right	9	0	0	0		
cSH	924	1460	1700	1700		
Volume to Capacity	0.01	0.01	0.12	0.07		
Queue Length 95th (ft)	1	1	0	0		
Control Delay (s)	8.9	7.5	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s)	8.9	0.6		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			20.2%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
18: Ensign Drive & Main St./Site Driveway #7

Avon Village Center
2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	15	0	5	0	166	27	7	106	0
Future Volume (vph)	0	0	0	15	0	5	0	166	27	7	106	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.968			0.981				
Flt Protected					0.963						0.997	
Satd. Flow (prot)	0	1863	0	0	1736	0	0	1827	0	0	1857	0
Flt Permitted					0.963						0.997	
Satd. Flow (perm)	0	1863	0	0	1736	0	0	1827	0	0	1857	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		692			210			406			373	
Travel Time (s)		15.7			4.8			9.2			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	16	0	5	0	180	29	8	115	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	21	0	0	209	0	0	123	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.3%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 18: Ensign Drive & Main St./Site Driveway #7

Avon Village Center
2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	15	0	5	0	166	27	7	106	0
Future Volume (Veh/h)	0	0	0	15	0	5	0	166	27	7	106	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	16	0	5	0	180	29	8	115	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								609				
pX, platoon unblocked												
vC, conflicting volume	330	340	115	326	326	194	115			209		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	330	340	115	326	326	194	115			209		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	97	100	99	100			99		
cM capacity (veh/h)	616	578	937	625	589	847	1474			1362		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	21	209	123								
Volume Left	0	16	0	8								
Volume Right	0	5	29	0								
cSH	1700	666	1474	1362								
Volume to Capacity	0.00	0.03	0.00	0.01								
Queue Length 95th (ft)	0	2	0	0								
Control Delay (s)	0.0	10.6	0.0	0.5								
Lane LOS	A	B		A								
Approach Delay (s)	0.0	10.6	0.0	0.5								
Approach LOS	A	B										
Intersection Summary												
Average Delay			0.8									
Intersection Capacity Utilization			21.3%	ICU Level of Service						A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
19: Ensign Drive & Site Driveway #5

Avon Village Center
2020 Combined AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	14	33	134	116	8
Future Volume (vph)	5	14	33	134	116	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899				0.991	
Flt Protected	0.988			0.990		
Satd. Flow (prot)	1655	0	0	1844	1846	0
Flt Permitted	0.988			0.990		
Satd. Flow (perm)	1655	0	0	1844	1846	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	280			373	494	
Travel Time (s)	6.4			8.5	11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	15	36	146	126	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	182	135	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 28.8%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

19: Ensign Drive & Site Driveway #5

Avon Village Center

2020 Combined AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	14	33	134	116	8
Future Volume (Veh/h)	5	14	33	134	116	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	15	36	146	126	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				982		
pX, platoon unblocked						
vC, conflicting volume	348	130	135			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	348	130	135			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	98	98			
cM capacity (veh/h)	632	919	1449			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	20	182	135			
Volume Left	5	36	0			
Volume Right	15	0	9			
cSH	826	1449	1700			
Volume to Capacity	0.02	0.02	0.08			
Queue Length 95th (ft)	2	2	0			
Control Delay (s)	9.5	1.7	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.5	1.7	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			28.8%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
20: Ensign Drive/Retail Drive #3 & Bickford Dr.

Avon Village Center
2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	197	16	91	80	26	1	27	114	16	17	2
Future Volume (vph)	4	197	16	91	80	26	1	27	114	16	17	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.982			0.891			0.993	
Flt Protected		0.999			0.977						0.978	
Satd. Flow (prot)	0	1842	0	0	1787	0	0	1660	0	0	1809	0
Flt Permitted		0.999			0.977						0.978	
Satd. Flow (perm)	0	1842	0	0	1787	0	0	1660	0	0	1809	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			734			494			296	
Travel Time (s)		8.1			16.7			11.2			6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	214	17	99	87	28	1	29	124	17	18	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	235	0	0	214	0	0	154	0	0	37	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 46.0% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
20: Ensign Drive/Retail Drive #3 & Bickford Dr.

Avon Village Center
2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	4	197	16	91	80	26	1	27	114	16	17	2
Future Volume (veh/h)	4	197	16	91	80	26	1	27	114	16	17	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
Hourly flow rate (vph)	4	214	17	99	87	28	1	29	124	17	18	2
Approach Volume (veh/h)	235			214			154			37		
Crossing Volume (veh/h)	134			34			235			187		
High Capacity (veh/h)	1247			1348			1152			1196		
High v/c (veh/h)	0.19			0.16			0.13			0.03		
Low Capacity (veh/h)	1036			1128			950			990		
Low v/c (veh/h)	0.23			0.19			0.16			0.04		
Intersection Summary												
Maximum v/c High	0.19											
Maximum v/c Low	0.23											
Intersection Capacity Utilization	46.0%			ICU Level of Service					A			

Intersection				
Intersection Delay, s/veh	5.7			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	235	214	154	37
Demand Flow Rate, veh/h	239	219	157	37
Vehicles Circulating, veh/h	136	35	239	191
Vehicles Exiting, veh/h	92	361	136	63
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.1	5.2	5.9	4.3
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	239	219	157	37
Cap Entry Lane, veh/h	986	1091	890	933
Entry HV Adj Factor	0.982	0.978	0.984	0.990
Flow Entry, veh/h	235	214	154	37
Cap Entry, veh/h	969	1067	875	925
V/C Ratio	0.242	0.201	0.176	0.040
Control Delay, s/veh	6.1	5.2	5.9	4.3
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	0

Lanes, Volumes, Timings
21: Bickford Dr. & Fisher Drive

Avon Village Center
2020 Combined AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	37	291	161	38	43	33
Future Volume (vph)	37	291	161	38	43	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			100	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850	0.941	
Flt Protected	0.950	0.999			0.972	
Satd. Flow (prot)	1681	1768	1863	1583	1704	0
Flt Permitted	0.950	0.999			0.972	
Satd. Flow (perm)	1681	1768	1863	1583	1704	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		734	305		171	
Travel Time (s)		16.7	6.9		3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	316	175	41	47	36
Shared Lane Traffic (%)	11%					
Lane Group Flow (vph)	36	320	175	41	83	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 34.3% ICU Level of Service A
Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

21: Bickford Dr. & Fisher Drive

Avon Village Center
2020 Combined AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	37	291	161	38	43	33
Future Volume (Veh/h)	37	291	161	38	43	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	316	175	41	47	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			637			
pX, platoon unblocked						
vC, conflicting volume	216				571	175
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	216				571	175
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				90	96
cM capacity (veh/h)	1354				468	868
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	27	329	175	41	83	
Volume Left	27	13	0	0	47	
Volume Right	0	0	0	41	36	
cSH	1354	1354	1700	1700	585	
Volume to Capacity	0.03	0.03	0.10	0.02	0.14	
Queue Length 95th (ft)	2	2	0	0	12	
Control Delay (s)	7.7	0.6	0.0	0.0	12.2	
Lane LOS	A	A			B	
Approach Delay (s)	1.1		0.0		12.2	
Approach LOS					B	
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			34.3%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
22: Bickford Dr. & Office Drive

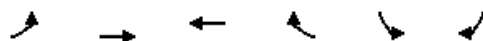
Avon Village Center
2020 Combined AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	330	200	10	1	1
Future Volume (vph)	4	330	200	10	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.932	
Flt Protected		0.999			0.976	
Satd. Flow (prot)	0	1861	1850	0	1694	0
Flt Permitted		0.999			0.976	
Satd. Flow (perm)	0	1861	1850	0	1694	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		305	332		317	
Travel Time (s)		6.9	7.5		7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	359	217	11	1	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	363	228	0	2	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	30.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

22: Bickford Dr. & Office Drive

Avon Village Center
2020 Combined AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	330	200	10	1	1
Future Volume (Veh/h)	4	330	200	10	1	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	359	217	11	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			332			
pX, platoon unblocked						
vC, conflicting volume	228				590	222
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	228				590	222
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1340				469	817
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	363	228	2			
Volume Left	4	0	1			
Volume Right	0	11	1			
cSH	1340	1700	596			
Volume to Capacity	0.00	0.13	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.1	0.0	11.1			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	11.1			
Approach LOS			B			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			30.6%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center

2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	35	61	56	20	26	45	949	10	48	661	146
Future Volume (vph)	235	35	61	56	20	26	45	949	10	48	661	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	100		0	100		100
Storage Lanes	1		0	1		0	1		0	1		0
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
Frt		0.905			0.916			0.998			0.973	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1686	0	1770	1706	0	1770	1859	0	1770	1812	0
Flt Permitted	0.724			0.690			0.093			0.085		
Satd. Flow (perm)	1349	1686	0	1285	1706	0	173	1859	0	158	1812	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		66			28			1			19	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		332			231			526			680	
Travel Time (s)		7.5			5.3			12.0			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	38	66	61	22	28	49	1032	11	52	718	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	255	104	0	61	50	0	49	1043	0	52	877	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		3.0	25.0		3.0	25.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		8.0	31.0		8.0	31.0	
Total Split (s)	31.0	31.0		31.0	31.0		8.0	51.0		8.0	51.0	
Total Split (%)	34.4%	34.4%		34.4%	34.4%		8.9%	56.7%		8.9%	56.7%	
Maximum Green (s)	27.0	27.0		27.0	27.0		4.0	47.0		4.0	47.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	
Recall Mode	Min	Min		Min	Min		None	Min		None	Min	
Act Effct Green (s)	25.8	25.8		25.8	25.8		49.4	47.1		49.4	47.1	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.58	0.55		0.58	0.55	
v/c Ratio	0.63	0.19		0.16	0.09		0.28	1.02		0.31	0.87	
Control Delay	34.5	11.4		24.4	13.5		11.1	55.1		12.0	29.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	34.5	11.4		24.4	13.5		11.1	55.1		12.0	29.1	
LOS	C	B		C	B		B	E		B	C	
Approach Delay		27.8			19.5			53.1			28.1	
Approach LOS		C			B			D			C	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	124	15		25	9		9	~639		10	404	
Queue Length 95th (ft)	209	53		56	35		24	#910		25	#702	
Internal Link Dist (ft)		252			151			446			600	
Turn Bay Length (ft)	200						100			100		
Base Capacity (vph)	426	578		406	558		174	1024		166	1006	
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	0.60	0.18		0.15	0.09		0.28	1.02		0.31	0.87	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 85.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 38.6

Intersection LOS: D

Intersection Capacity Utilization 78.1%

ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

 Ø1	 Ø2	 Ø4
8 s	51 s	31 s
 Ø5	 Ø6	
8 s	51 s	

HCM Signalized Intersection Capacity Analysis

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center
2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	35	61	56	20	26	45	949	10	48	661	146
Future Volume (vph)	235	35	61	56	20	26	45	949	10	48	661	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.92		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1685		1770	1706		1770	1860		1770	1812	
Flt Permitted	0.72	1.00		0.69	1.00		0.09	1.00		0.08	1.00	
Satd. Flow (perm)	1349	1685		1285	1706		174	1860		158	1812	
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)	255	38	66	61	22	28	49	1032	11	52	718	159
RTOR Reduction (vph)	0	46	0	0	20	0	0	0	0	0	9	0
Lane Group Flow (vph)	255	58	0	61	30	0	49	1043	0	52	868	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Actuated Green, G (s)	25.8	25.8		25.8	25.8		49.4	47.1		49.4	47.1	
Effective Green, g (s)	25.8	25.8		25.8	25.8		49.4	47.1		49.4	47.1	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.57	0.54		0.57	0.54	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	
Lane Grp Cap (vph)	399	498		380	504		140	1004		132	978	
v/s Ratio Prot		0.03			0.02		0.01	c0.56		c0.01	0.48	
v/s Ratio Perm	c0.19			0.05			0.19			0.21		
v/c Ratio	0.64	0.12		0.16	0.06		0.35	1.04		0.39	0.89	
Uniform Delay, d1	26.7	22.4		22.7	22.0		15.7	20.1		19.4	17.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.6	0.2		0.4	0.1		0.6	38.8		0.7	10.6	
Delay (s)	31.3	22.6		23.1	22.1		16.2	58.9		20.1	28.3	
Level of Service	C	C		C	C		B	E		C	C	
Approach Delay (s)		28.8			22.7			57.0			27.8	
Approach LOS		C			C			E			C	
Intersection Summary												
HCM 2000 Control Delay			40.5			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			87.2			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			78.1%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
 24: Routes 10/202 (Simsbury Road) & Site Driveway #8

Avon Village Center
 2020 Combined AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	3	5	1002	780	3
Future Volume (vph)	2	3	5	1002	780	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.919					
Flt Protected	0.980					
Satd. Flow (prot)	1678	0	0	1863	1863	0
Flt Permitted	0.980					
Satd. Flow (perm)	1678	0	0	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	357			1053	526	
Travel Time (s)	8.1			23.9	12.0	
Confl. Peds. (#/hr)			3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	3	5	1089	848	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	0	1094	851	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 66.7%	ICU Level of Service C					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis
 24: Routes 10/202 (Simsbury Road) & Site Driveway #8

Avon Village Center
 2020 Combined AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	3	5	1002	780	3
Future Volume (Veh/h)	2	3	5	1002	780	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	3	5	1089	848	3
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					526	
pX, platoon unblocked	0.57	0.57	0.57			
vC, conflicting volume	1952	852	854			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2286	372	375			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	99	99			
cM capacity (veh/h)	25	386	678			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	5	1094	851			
Volume Left	2	5	0			
Volume Right	3	0	3			
cSH	56	678	1700			
Volume to Capacity	0.09	0.01	0.50			
Queue Length 95th (ft)	7	1	0			
Control Delay (s)	75.1	0.3	0.0			
Lane LOS	F	A				
Approach Delay (s)	75.1	0.3	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization		66.7%		ICU Level of Service		C
Analysis Period (min)		15				

Lanes, Volumes, Timings
25: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Combined AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	2	12	2	0	1	13	964	12	10	720	51
Future Volume (vph)	31	2	12	2	0	1	13	964	12	10	720	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.964			0.955			0.998			0.991	
Flt Protected		0.966			0.968			0.999			0.999	
Satd. Flow (prot)	0	1735	0	0	1722	0	0	1857	0	0	1844	0
Flt Permitted		0.966			0.968			0.999			0.999	
Satd. Flow (perm)	0	1735	0	0	1722	0	0	1857	0	0	1844	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		582			275			237			1053	
Travel Time (s)		13.2			6.3			5.4			23.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	2	13	2	0	1	14	1048	13	11	783	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	3	0	0	1075	0	0	849	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 69.0%

ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 25: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Combined AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	2	12	2	0	1	13	964	12	10	720	51
Future Volume (Veh/h)	31	2	12	2	0	1	13	964	12	10	720	51
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	2	13	2	0	1	14	1048	13	11	783	55
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								725				
pX, platoon unblocked	0.84	0.84		0.84	0.84	0.84				0.84		
vC, conflicting volume	1916	1922	810	1929	1942	1054	838			1061		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1992	1999	810	2008	2024	973	838			980		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	8	96	97	94	100	100	98			98		
cM capacity (veh/h)	37	49	380	34	47	259	796			595		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	49	3	1075	849								
Volume Left	34	2	14	11								
Volume Right	13	1	13	55								
cSH	49	48	796	595								
Volume to Capacity	0.99	0.06	0.02	0.02								
Queue Length 95th (ft)	107	5	1	1								
Control Delay (s)	257.8	85.5	0.6	0.5								
Lane LOS	F	F	A	A								
Approach Delay (s)	257.8	85.5	0.6	0.5								
Approach LOS	F	F										
Intersection Summary												
Average Delay			7.1									
Intersection Capacity Utilization			69.0%		ICU Level of Service					C		
Analysis Period (min)			15									

Lanes, Volumes, Timings
26: Woodford Ave & Site Driveway #7

Avon Village Center
2020 Combined AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	3	1	42	63	1
Future Volume (vph)	3	3	1	42	63	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.998	
Flt Protected	0.976			0.999		
Satd. Flow (prot)	1694	0	0	1861	1859	0
Flt Permitted	0.976			0.999		
Satd. Flow (perm)	1694	0	0	1861	1859	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			205	88	
Travel Time (s)	4.0			4.7	2.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	3	1	46	68	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	0	47	69	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 13.4%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

26: Woodford Ave & Site Driveway #7

Avon Village Center
2020 Combined AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	3	1	42	63	1
Future Volume (Veh/h)	3	3	1	42	63	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	3	1	46	68	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	116	68	69			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	116	68	69			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	879	995	1532			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	6	47	69			
Volume Left	3	1	0			
Volume Right	3	0	1			
cSH	933	1532	1700			
Volume to Capacity	0.01	0.00	0.04			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	8.9	0.2	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.9	0.2	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization		13.4%		ICU Level of Service		A
Analysis Period (min)		15				

Appendix C

Intersection Capacity Analysis Worksheets 2020 Combined Improved Traffic Volumes Weekday Morning Peak Hour

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1667	574	63	926	50	454	273	154	70	239	80
Future Volume (vph)	90	1667	574	63	926	50	454	273	154	70	239	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		0	300		0	325		0	0		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.992			0.946				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3511	0	3433	1762	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3511	0	3433	1762	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			355		5			19				95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			1189			682			591	
Travel Time (s)		20.0			27.0			15.5			13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	1812	624	68	1007	54	493	297	167	76	260	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	1812	624	68	1061	0	493	464	0	76	260	87
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Detector Phase	1	6	6	5	2		7 4	7 8		4	8	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	20.0					3.0	5.0	3.0
Minimum Split (s)	9.1	22.0	22.0	9.1	27.0					7.0	26.7	9.1
Total Split (s)	19.8	81.1	81.1	10.8	72.1					11.0	26.7	19.8
Total Split (%)	13.2%	54.1%	54.1%	7.2%	48.1%					7.3%	17.8%	13.2%
Maximum Green (s)	13.7	74.1	74.1	4.7	65.1					7.0	21.0	13.7
Yellow Time (s)	3.1	5.0	5.0	3.1	5.0					3.0	3.3	3.1
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0					1.0	2.4	3.0
Lost Time Adjust (s)	-2.1	-3.0	-3.0	-2.1	-3.0					0.0	-1.7	-2.1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes	Yes
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Recall Mode	None	Min	Min	None	Min					None	None	None
Walk Time (s)											20.0	
Flash Dont Walk (s)											1.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)	13.5	77.1	77.1	6.8	70.4		27.4	42.9		7.0	22.5	39.9
Actuated g/C Ratio	0.09	0.51	0.51	0.05	0.47		0.18	0.29		0.05	0.15	0.27
v/c Ratio	0.62	0.99	0.63	0.85	0.64		0.79	0.90		0.93	0.93	0.18
Control Delay	82.1	55.8	13.4	134.4	32.6		68.3	70.3		149.1	101.4	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	82.1	55.8	13.4	134.4	32.6		68.3	70.3		149.1	101.4	6.9

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. AM

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	10.1
Total Split (s)	20.4
Total Split (%)	14%
Maximum Green (s)	15.3
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	1.5
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	E	B	F	C		E	E		F	F	A
Approach Delay		46.4			38.7			69.3			90.6	
Approach LOS		D			D			E			F	
Queue Length 50th (ft)	93	908	182	67	411		240	422		76	255	0
Queue Length 95th (ft)	157	#1100	312	#164	497		306	#625		#182	#426	37
Internal Link Dist (ft)		799			1109			602			511	
Turn Bay Length (ft)	285			300			325					
Base Capacity (vph)	186	1822	987	80	1653		628	520		82	282	514
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.53	0.99	0.63	0.85	0.64		0.79	0.89		0.93	0.92	0.17

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 149.8

Natural Cycle: 130

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 52.7

Intersection LOS: D

Intersection Capacity Utilization 90.5%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

 Ø1	 Ø2	 Ø4	 Ø7	 Ø8
19.8 s	72.1 s	11 s	20.4 s	26.7 s
 Ø5	 Ø6			
10.8 s	81.1 s			

Lane Group	Ø7
LOS	
Approach Delay	
Approach LOS	
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	

HCM Signalized Intersection Capacity Analysis

1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1667	574	63	926	50	454	273	154	70	239	80
Future Volume (vph)	90	1667	574	63	926	50	454	273	154	70	239	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3512		3433	1762		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3512		3433	1762		1770	1863	1583
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)	98	1812	624	68	1007	54	493	297	167	76	260	87
RTOR Reduction (vph)	0	0	172	0	3	0	0	14	0	0	0	66
Lane Group Flow (vph)	98	1812	452	68	1058	0	493	450	0	76	260	21
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Actuated Green, G (s)	11.4	74.1	74.1	4.7	67.4		26.3	41.2		7.0	20.8	32.2
Effective Green, g (s)	13.5	77.1	77.1	6.8	70.4		24.5	42.3		7.0	22.5	36.4
Actuated g/C Ratio	0.09	0.51	0.51	0.05	0.47		0.16	0.28		0.05	0.15	0.24
Clearance Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Lane Grp Cap (vph)	159	1821	814	80	1650		561	497		82	279	384
v/s Ratio Prot	0.06	c0.51		c0.04	0.30		c0.14	c0.26		0.04	0.14	0.00
v/s Ratio Perm			0.29									0.01
v/c Ratio	0.62	1.00	0.55	0.85	0.64		0.88	0.91		0.93	0.93	0.06
Uniform Delay, d1	65.7	36.2	24.7	71.0	30.1		61.2	51.8		71.1	62.9	43.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.9	19.8	0.7	53.1	1.2		14.1	19.6		73.6	35.7	0.0
Delay (s)	70.6	55.9	25.4	124.1	31.3		75.3	71.4		144.7	98.6	43.5
Level of Service	E	E	C	F	C		E	E		F	F	D
Approach Delay (s)		49.0			36.9			73.4			95.5	
Approach LOS		D			D			E			F	
Intersection Summary												
HCM 2000 Control Delay			54.8				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			149.8				Sum of lost time (s)			20.6		
Intersection Capacity Utilization			90.5%				ICU Level of Service			E		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	2237	6	21	1401	2	1	0	18	1	0	0
Future Volume (vph)	9	2237	6	21	1401	2	1	0	18	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	130		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt								0.850				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	0	1770	3539	0	1770	1583	0	1770	1863	0
Flt Permitted	0.155			0.038			0.769			0.769		
Satd. Flow (perm)	289	3539	0	71	3539	0	1432	1583	0	1432	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								155				
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		724			1561			285			144	
Travel Time (s)		16.5			35.5			13.0			6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	2432	7	23	1523	2	1	0	20	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	2439	0	23	1525	0	1	20	0	1	0	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Detector Phase	1	6		5	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	8.1	22.2		8.0	22.2		21.5	21.5		21.5	21.5	
Total Split (s)	15.0	80.0		20.0	80.0		25.0	25.0		25.0	25.0	
Total Split (%)	12.0%	64.0%		16.0%	64.0%		20.0%	20.0%		20.0%	20.0%	
Maximum Green (s)	10.9	73.8		16.0	73.8		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.1	4.3		3.0	4.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.9		1.0	1.9		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	-0.1	-2.2		0.0	-2.2		-1.5	-1.5		-1.5	-1.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Act Effct Green (s)	111.5	109.6		113.2	113.6		7.6	7.6		7.6		
Actuated g/C Ratio	0.89	0.88		0.91	0.91		0.06	0.06		0.06		
v/c Ratio	0.03	0.79		0.16	0.47		0.01	0.08		0.01		
Control Delay	1.2	8.6		3.5	2.5		55.0	0.7		55.0		
Queue Delay	0.0	1.0		0.0	0.0		0.0	0.0		0.0		
Total Delay	1.2	9.7		3.5	2.5		55.0	0.7		55.0		
LOS	A	A		A	A		D	A		D		
Approach Delay		9.6			2.5			3.3			55.0	
Approach LOS		A			A			A			D	

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	1	554		2	93		1	0		1		
Queue Length 95th (ft)	2	708		4	233		7	0		7		
Internal Link Dist (ft)		644			1481			205			64	
Turn Bay Length (ft)	150			130								
Base Capacity (vph)	394	3103		282	3216		240	394		240		
Starvation Cap Reductn	0	383		0	0		0	0		0		
Spillback Cap Reductn	0	0		0	0		0	0		0		
Storage Cap Reductn	0	0		0	0		0	0		0		
Reduced v/c Ratio	0.03	0.90		0.08	0.47		0.00	0.05		0.00		

Intersection Summary

Area Type: Other

Cycle Length: 125

Actuated Cycle Length: 125

Offset: 54 (43%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 6.9

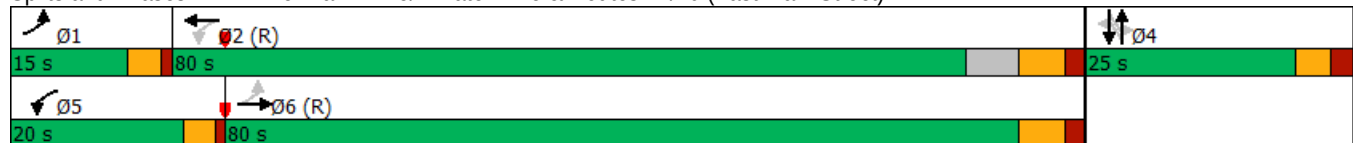
Intersection LOS: A

Intersection Capacity Utilization 73.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)



HCM Signalized Intersection Capacity Analysis

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	2237	6	21	1401	2	1	0	18	1	0	0
Future Volume (vph)	9	2237	6	21	1401	2	1	0	18	1	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00		
Frt	1.00	1.00		1.00	1.00		1.00	0.85		1.00		
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95		
Satd. Flow (prot)	1770	3538		1770	3539		1770	1583		1770		
Flt Permitted	0.15	1.00		0.04	1.00		0.77	1.00		0.77		
Satd. Flow (perm)	288	3538		71	3539		1433	1583		1433		
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)	10	2432	7	23	1523	2	1	0	20	1	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	19	0	0	0	0
Lane Group Flow (vph)	10	2439	0	23	1525	0	1	1	0	1	0	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm		
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Actuated Green, G (s)	103.2	102.0		107.9	104.3		3.7	3.7		3.7		
Effective Green, g (s)	103.4	104.2		107.9	106.5		5.2	5.2		5.2		
Actuated g/C Ratio	0.83	0.83		0.86	0.85		0.04	0.04		0.04		
Clearance Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		
Lane Grp Cap (vph)	253	2949		110	3015		59	65		59		
v/s Ratio Prot	0.00	c0.69		c0.01	0.43			0.00				
v/s Ratio Perm	0.03			0.17			c0.00			0.00		
v/c Ratio	0.04	0.83		0.21	0.51		0.02	0.01		0.02		
Uniform Delay, d1	2.2	5.6		13.2	2.4		57.4	57.4		57.4		
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Incremental Delay, d2	0.1	2.8		0.9	0.6		0.1	0.1		0.1		
Delay (s)	2.2	8.4		14.2	3.0		57.6	57.5		57.6		
Level of Service	A	A		B	A		E	E		E		
Approach Delay (s)		8.4			3.2			57.5			57.6	
Approach LOS		A			A			E			E	
Intersection Summary												
HCM 2000 Control Delay			6.6			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			125.0			Sum of lost time (s)			12.0			
Intersection Capacity Utilization			73.7%			ICU Level of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	2248	43	5	1378	2	17	2	13	3	0	1
Future Volume (vph)	13	2248	43	5	1378	2	17	2	13	3	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997							0.850		0.966	
Flt Protected								0.957			0.964	
Satd. Flow (prot)	0	3529	0	0	3539	0	0	1783	1583	0	1735	0
Flt Permitted		0.939			0.940			0.745			0.773	
Satd. Flow (perm)	0	3313	0	0	3327	0	0	1388	1583	0	1391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3							60		60	
Link Speed (mph)		30			30			15			30	
Link Distance (ft)		691			724			207			170	
Travel Time (s)		15.7			16.5			9.4			3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	2443	47	5	1498	2	18	2	14	3	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2504	0	0	1505	0	0	20	14	0	4	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	20.6	20.6		20.6	20.6		12.5	12.5	12.5	12.5	12.5	
Total Split (s)	72.0	72.0		72.0	72.0		24.0	24.0	24.0	24.0	24.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		20.0%	20.0%	20.0%	20.0%	20.0%	
Maximum Green (s)	66.4	66.4		66.4	66.4		18.5	18.5	18.5	18.5	18.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.4	1.4		1.4	1.4		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		-1.6			-1.6			-1.5	-1.5		-1.5	
Total Lost Time (s)		4.0			4.0			4.0	4.0		4.0	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		109.2			109.2			9.4	9.4		9.4	
Actuated g/C Ratio		0.91			0.91			0.08	0.08		0.08	
v/c Ratio		0.83			0.50			0.19	0.08		0.02	
Control Delay		7.6			2.3			55.4	0.8		0.2	
Queue Delay		1.3			0.2			0.0	0.0		0.0	
Total Delay		8.9			2.6			55.4	0.8		0.2	
LOS		A			A			E	A		A	
Approach Delay		8.9			2.6			32.9			0.3	
Approach LOS		A			A			C			A	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	20.5
Total Split (s)	24.0
Total Split (%)	20%
Maximum Green (s)	20.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		406			108			15	0		0	
Queue Length 95th (ft)		653			162			40	0		0	
Internal Link Dist (ft)		611			644			127			90	
Turn Bay Length (ft)												
Base Capacity (vph)		3016			3028			231	313		281	
Starvation Cap Reductn		291			698			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.92			0.65			0.09	0.04		0.01	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 54 (45%), Referenced to phase 2:EBWB, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 6.7

Intersection LOS: A

Intersection Capacity Utilization 85.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

   02 (R)	   03	   04
72 s	24 s	24 s

Lane Group	Ø3
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	

HCM Signalized Intersection Capacity Analysis

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	2248	43	5	1378	2	17	2	13	3	0	1
Future Volume (vph)	13	2248	43	5	1378	2	17	2	13	3	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0		
Lane Util. Factor		0.95			0.95			1.00		1.00		
Frt		1.00			1.00			1.00		0.85		
Flt Protected		1.00			1.00			0.96		1.00		
Satd. Flow (prot)		3528			3538			1783		1583		
Flt Permitted		0.94			0.94			0.74		1.00		
Satd. Flow (perm)		3314			3327			1387		1583		
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)	14	2443	47	5	1498	2	18	2	14	3	0	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	13	0	4	0
Lane Group Flow (vph)	0	2504	0	0	1505	0	0	20	1	0	0	0
Turn Type	Perm	NA			Perm	NA			Perm	NA	Perm	NA
Protected Phases		2			2			4			4	
Permitted Phases	2				2			4			4	
Actuated Green, G (s)		103.8			103.8			5.1		5.1		
Effective Green, g (s)		105.4			105.4			6.6		6.6		
Actuated g/C Ratio		0.88			0.88			0.05		0.05		
Clearance Time (s)		5.6			5.6			5.5		5.5		
Vehicle Extension (s)		3.0			3.0			3.0		3.0		
Lane Grp Cap (vph)		2910			2922			76		87		
v/s Ratio Prot												
v/s Ratio Perm		c0.76			0.45			c0.01		0.00		
v/c Ratio		0.86			0.52			0.26		0.01		
Uniform Delay, d1		3.6			1.6			54.4		53.6		
Progression Factor		1.00			1.00			1.00		1.00		
Incremental Delay, d2		3.6			0.7			1.9		0.0		
Delay (s)		7.2			2.3			56.2		53.6		
Level of Service		A			A			E		D		
Approach Delay (s)		7.2			2.3			55.2				
Approach LOS		A			A			E				
Intersection Summary												
HCM 2000 Control Delay		5.8			HCM 2000 Level of Service				A			
HCM 2000 Volume to Capacity ratio		0.86										
Actuated Cycle Length (s)		120.0			Sum of lost time (s)				12.0			
Intersection Capacity Utilization		85.6%			ICU Level of Service				E			
Analysis Period (min)		15										

c Critical Lane Group

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	1505	31	125	828	507	35	353	370	453	183	98
Future Volume (vph)	141	1505	31	125	828	507	35	353	370	453	183	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	300		0	150		150	150		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.997			0.943				0.850		0.948	
Flt Protected	0.950			0.950				0.996		0.950		
Satd. Flow (prot)	1770	3529	0	1770	3337	0	0	1855	1583	3433	1766	0
Flt Permitted	0.950			0.950				0.996		0.950		
Satd. Flow (perm)	1770	3529	0	1770	3337	0	0	1855	1583	3433	1766	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			116				47		14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		738			691			688			488	
Travel Time (s)		16.8			15.7			15.6			11.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	1636	34	136	900	551	38	384	402	492	199	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	1670	0	136	1451	0	0	422	402	492	306	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	21.0		11.0	21.0		11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	76.0		24.0	87.0		30.0	30.0	24.0	32.0	32.0	
Total Split (%)	8.0%	46.9%		14.8%	53.7%		18.5%	18.5%	14.8%	19.8%	19.8%	
Maximum Green (s)	9.0	70.0		20.0	81.0		26.0	26.0	20.0	28.0	28.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0		0.0	-1.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	1.5	3.0		1.5	3.0		3.0	3.0	1.5	2.5	2.5	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effct Green (s)	9.0	74.9		16.1	82.0			26.0	46.1	28.0	28.0	
Actuated g/C Ratio	0.06	0.46		0.10	0.51			0.16	0.28	0.17	0.17	
v/c Ratio	1.56	1.02		0.78	0.83			1.42	0.83	0.83	0.97	
Control Delay	341.0	70.6		98.4	36.3			254.2	63.0	77.5	105.4	
Queue Delay	0.0	0.0		0.0	20.1			0.0	0.0	0.0	0.0	
Total Delay	341.0	70.6		98.4	56.5			254.2	63.0	77.5	105.4	
LOS	F	E		F	E			F	E	E	F	
Approach Delay		93.3			60.1			160.9			88.2	
Approach LOS		F			E			F			F	

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	~228	~991		143	634			~600	359	263	314	
Queue Length 95th (ft)	#384	#1174		216	739			#821	486	#335	#515	
Internal Link Dist (ft)		658			611			608			408	
Turn Bay Length (ft)	300			300					150	150		
Base Capacity (vph)	98	1632		218	1746			297	521	593	316	
Starvation Cap Reductn	0	0		0	337			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	1.56	1.02		0.62	1.03			1.42	0.77	0.83	0.97	

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 162

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

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.56

Intersection Signal Delay: 93.1

Intersection LOS: F

Intersection Capacity Utilization 99.8%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4	 Ø8
24 s	76 s	32 s	30 s
 Ø5	 Ø6 (R)		
13 s	87 s		

HCM Signalized Intersection Capacity Analysis

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	1505	31	125	828	507	35	353	370	453	183	98
Future Volume (vph)	141	1505	31	125	828	507	35	353	370	453	183	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.97	1.00	
Frt	1.00	1.00		1.00	0.94			1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3528		1770	3338			1854	1583	3433	1765	
Flt Permitted	0.95	1.00		0.95	1.00			1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3528		1770	3338			1854	1583	3433	1765	
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)	153	1636	34	136	900	551	38	384	402	492	199	107
RTOR Reduction (vph)	0	1	0	0	57	0	0	0	35	0	12	0
Lane Group Flow (vph)	153	1669	0	136	1394	0	0	422	367	492	294	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Actuated Green, G (s)	9.0	73.9		16.1	81.0			26.0	42.1	28.0	28.0	
Effective Green, g (s)	9.0	74.9		16.1	82.0			26.0	42.1	28.0	28.0	
Actuated g/C Ratio	0.06	0.46		0.10	0.51			0.16	0.26	0.17	0.17	
Clearance Time (s)	4.0	6.0		4.0	6.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	3.0		1.5	3.0			3.0	1.5	2.5	2.5	
Lane Grp Cap (vph)	98	1631		175	1689			297	450	593	305	
v/s Ratio Prot	c0.09	c0.47		0.08	0.42			c0.23	c0.08	0.14	c0.17	
v/s Ratio Perm									0.15			
v/c Ratio	1.56	1.02		0.78	0.83			1.42	0.82	0.83	0.97	
Uniform Delay, d1	76.5	43.5		71.2	33.9			68.0	56.3	64.7	66.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	296.1	28.4		17.7	4.7			208.0	10.4	9.2	41.8	
Delay (s)	372.6	71.9		88.9	38.7			276.0	66.7	73.9	108.3	
Level of Service	F	E		F	D			F	E	E	F	
Approach Delay (s)		97.2			43.0			173.9			87.1	
Approach LOS		F			D			F			F	
Intersection Summary												
HCM 2000 Control Delay			91.0			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.10									
Actuated Cycle Length (s)			162.0			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			99.8%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
5: Routes 44/202 (West Main Street) & Woodford Ave

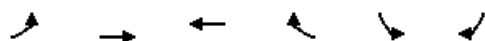
Avon Village Center
2020 Combined Imp. AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	 		 	
Traffic Volume (vph)	32	1664	951	11	13	53
Future Volume (vph)	32	1664	951	11	13	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.891	
Flt Protected		0.999			0.990	
Satd. Flow (prot)	0	3536	3532	0	1643	0
Flt Permitted		0.999			0.990	
Satd. Flow (perm)	0	3536	3532	0	1643	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		455	738		205	
Travel Time (s)		10.3	14.4		4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	1809	1034	12	14	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1844	1046	0	72	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 79.4%	ICU Level of Service D					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

5: Routes 44/202 (West Main Street) & Woodford Ave

Avon Village Center
2020 Combined Imp. AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↕↕	
Traffic Volume (veh/h)	32	1664	951	11	13	53
Future Volume (Veh/h)	32	1664	951	11	13	53
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	1809	1034	12	14	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		455	738			
pX, platoon unblocked	0.71				0.84	0.71
vC, conflicting volume	1046				2014	523
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	235				389	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				97	92
cM capacity (veh/h)	940				476	766
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	638	1206	689	357	72	
Volume Left	35	0	0	0	14	
Volume Right	0	0	0	12	58	
cSH	940	1700	1700	1700	685	
Volume to Capacity	0.04	0.71	0.41	0.21	0.11	
Queue Length 95th (ft)	3	0	0	0	9	
Control Delay (s)	1.0	0.0	0.0	0.0	10.9	
Lane LOS	A				B	
Approach Delay (s)	0.3		0.0		10.9	
Approach LOS					B	
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			79.4%		ICU Level of Service	D
Analysis Period (min)			15			

Lanes, Volumes, Timings

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	1628	24	61	811	132	5	0	6	59	3	68
Future Volume (vph)	76	1628	24	61	811	132	5	0	6	59	3	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	100		0	50		0	0		0	0		80
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	50			50			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.979			0.921				0.850
Flt Protected	0.950			0.950				0.980			0.954	
Satd. Flow (prot)	1770	3449	0	1805	3494	0	0	1715	0	0	1777	1583
Flt Permitted	0.229			0.128				0.873			0.727	
Satd. Flow (perm)	427	3449	0	243	3494	0	0	1528	0	0	1354	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			38			109				109
Link Speed (mph)		35			35			25			30	
Link Distance (ft)		1357			455			348			203	
Travel Time (s)		26.4			8.9			9.5			4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	83	1770	26	66	882	143	5	0	7	64	3	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	83	1796	0	66	1025	0	0	12	0	0	67	74
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Detector Phase	1	1 2 3		2 3	2 3		4	4		4	4	4
Switch Phase												
Minimum Initial (s)	5.0						7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	8.0						11.0	11.0		11.0	11.0	11.0
Total Split (s)	15.0						14.0	14.0		14.0	14.0	14.0
Total Split (%)	16.7%						15.6%	15.6%		15.6%	15.6%	15.6%
Maximum Green (s)	12.0						10.0	10.0		10.0	10.0	10.0
Yellow Time (s)	3.0						3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	0.0						1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	1.0							0.0			0.0	0.0
Total Lost Time (s)	4.0							4.0			4.0	4.0
Lead/Lag	Lead						Lag	Lag		Lag	Lag	Lag
Lead-Lag Optimize?	Yes						Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0						2.0	2.0		2.0	2.0	2.0
Recall Mode	None						None	None		None	None	None
Act Effct Green (s)	71.6	75.6		59.6	58.6			8.6			8.6	8.6
Actuated g/C Ratio	0.80	0.84		0.66	0.65			0.10			0.10	0.10
v/c Ratio	0.16	0.62		0.41	0.45			0.05			0.52	0.30
Control Delay	2.9	4.5		18.2	8.7			0.4			53.2	6.5
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	2.9	4.5		18.2	8.7			0.4			53.2	6.5
LOS	A	A		B	A			A			D	A

Lanes, Volumes, Timings
6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center
2020 Combined Imp. AM

Lane Group	Ø2	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	6.0
Minimum Split (s)	18.0	12.0
Total Split (s)	49.0	12.0
Total Split (%)	54%	13%
Maximum Green (s)	46.0	6.0
Yellow Time (s)	2.0	4.0
All-Red Time (s)	1.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	3.0
Recall Mode	C-Max	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		

Lanes, Volumes, Timings

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		4.4			9.3			0.4			28.7	
Approach LOS		A			A			A			C	
Queue Length 50th (ft)	8	121		17	142			0			37	0
Queue Length 95th (ft)	m16	242		58	185			0			78	20
Internal Link Dist (ft)		1277			375			268			123	
Turn Bay Length (ft)	100			50								80
Base Capacity (vph)	519	2898		160	2287			266			150	272
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.16	0.62		0.41	0.45			0.05			0.45	0.27

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 7.2

Intersection LOS: A

Intersection Capacity Utilization 75.5%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

 Ø1	 Ø2 (R)	 Ø3	 Ø4
15 s	49 s	12 s	14 s

Lane Group	Ø2	Ø3
Approach Delay		
Approach LOS		
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		

HCM Signalized Intersection Capacity Analysis

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	1628	24	61	811	132	5	0	6	59	3	68
Future Volume (vph)	76	1628	24	61	811	132	5	0	6	59	3	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Flt	1.00	1.00		1.00	0.98			0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.95	1.00
Satd. Flow (prot)	1770	3448		1805	3495			1715			1778	1583
Flt Permitted	0.23	1.00		0.13	1.00			0.87			0.73	1.00
Satd. Flow (perm)	427	3448		242	3495			1529			1354	1583
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)	83	1770	26	66	882	143	5	0	7	64	3	74
RTOR Reduction (vph)	0	1	0	0	15	0	0	11	0	0	0	68
Lane Group Flow (vph)	83	1795	0	66	1010	0	0	1	0	0	67	6
Heavy Vehicles (%)	2%	1%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Actuated Green, G (s)	69.8	72.8		56.8	56.8			7.2			7.2	7.2
Effective Green, g (s)	67.8	70.8		55.8	54.8			7.2			7.2	7.2
Actuated g/C Ratio	0.75	0.79		0.62	0.61			0.08			0.08	0.08
Clearance Time (s)	3.0							4.0			4.0	4.0
Vehicle Extension (s)	3.0							2.0			2.0	2.0
Lane Grp Cap (vph)	500	2712		150	2128			122			108	126
v/s Ratio Prot	0.02	c0.52			0.29							
v/s Ratio Perm	0.10			0.27				0.00			c0.05	0.00
v/c Ratio	0.17	0.66		0.44	0.47			0.01			0.62	0.05
Uniform Delay, d1	3.5	4.3		8.9	9.7			38.1			40.1	38.2
Progression Factor	1.29	1.08		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.1	0.4		2.1	0.2			0.0			7.7	0.1
Delay (s)	4.7	5.1		11.0	9.8			38.1			47.8	38.3
Level of Service	A	A		B	A			D			D	D
Approach Delay (s)		5.1			9.9			38.1			42.8	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			8.6									
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			90.0									
Intersection Capacity Utilization			75.5%									
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined Imp. AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	180	1559	733	165	165	88
Future Volume (vph)	180	1559	733	165	165	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11
Storage Length (ft)	125			100	215	300
Storage Lanes	1			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3539	1583	3319	1531
Flt Permitted	0.334				0.950	
Satd. Flow (perm)	622	3539	3539	1583	3319	1531
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				179		96
Link Speed (mph)		30	30		30	
Link Distance (ft)		2398	1357		443	
Travel Time (s)		54.5	30.8		10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	1695	797	179	179	96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	196	1695	797	179	179	96
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2			2		4
Detector Phase	1	2	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	7.0	7.0
Minimum Split (s)	8.0	22.3	22.3	22.3	11.5	11.5
Total Split (s)	10.0	66.0	66.0	66.0	14.0	14.0
Total Split (%)	11.1%	73.3%	73.3%	73.3%	15.6%	15.6%
Maximum Green (s)	7.0	58.7	58.7	58.7	9.5	9.5
Yellow Time (s)	3.0	4.2	4.2	4.2	3.0	3.0
All-Red Time (s)	0.0	3.1	3.1	3.1	1.5	1.5
Lost Time Adjust (s)	1.0	-1.2	-1.2	0.0	-0.5	-0.5
Total Lost Time (s)	4.0	6.1	6.1	7.3	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	1.5	1.5	1.5	1.5	1.5
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	69.0	60.8	60.8	59.6	9.0	9.0
Actuated g/C Ratio	0.77	0.68	0.68	0.66	0.10	0.10
v/c Ratio	0.35	0.71	0.33	0.16	0.54	0.40
Control Delay	2.9	5.9	7.3	2.4	44.6	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.9	5.9	7.3	2.4	44.6	13.6
LOS	A	A	A	A	D	B
Approach Delay		5.6	6.4		33.8	

Lanes, Volumes, Timings
 7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
 2020 Combined Imp. AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach LOS		A	A		C	
Queue Length 50th (ft)	13	74	91	0	50	0
Queue Length 95th (ft)	m27	134	145	36	82	45
Internal Link Dist (ft)		2318	1277		363	
Turn Bay Length (ft)	125			100	215	300
Base Capacity (vph)	556	2392	2392	1109	368	255
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	0.35	0.71	0.33	0.16	0.49	0.38

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 8.3
 Intersection Capacity Utilization 57.3%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

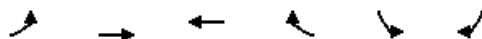
Splits and Phases: 7: Routes 44/202 (West Main Street) & Bickford Dr.



HCM Signalized Intersection Capacity Analysis

7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined Imp. AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	180	1559	733	165	165	88
Future Volume (vph)	180	1559	733	165	165	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	11
Total Lost time (s)	4.0	6.1	6.1	7.3	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3319	1531
Flt Permitted	0.33	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	622	3539	3539	1583	3319	1531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	1695	797	179	179	96
RTOR Reduction (vph)	0	0	0	60	0	86
Lane Group Flow (vph)	196	1695	797	119	179	10
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2			2		4
Actuated Green, G (s)	66.7	59.7	59.7	59.7	8.5	8.5
Effective Green, g (s)	64.7	60.9	60.9	59.7	9.0	9.0
Actuated g/C Ratio	0.72	0.68	0.68	0.66	0.10	0.10
Clearance Time (s)	3.0	7.3	7.3	7.3	4.5	4.5
Vehicle Extension (s)	3.0	1.5	1.5	1.5	1.5	1.5
Lane Grp Cap (vph)	523	2394	2394	1050	331	153
v/s Ratio Prot	c0.02	c0.48	0.23		c0.05	
v/s Ratio Perm	0.24			0.07		0.01
v/c Ratio	0.37	0.71	0.33	0.11	0.54	0.06
Uniform Delay, d1	4.1	9.0	6.1	5.5	38.5	36.7
Progression Factor	0.83	0.49	1.11	2.13	1.00	1.00
Incremental Delay, d2	0.3	1.2	0.3	0.2	1.0	0.1
Delay (s)	3.7	5.7	7.1	11.9	39.5	36.7
Level of Service	A	A	A	B	D	D
Approach Delay (s)		5.5	8.0		38.5	
Approach LOS		A	A		D	
Intersection Summary						
HCM 2000 Control Delay			9.1		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	14.1
Intersection Capacity Utilization			57.3%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1673	17	13	803	5	10	0	7	15	1	1
Future Volume (vph)	2	1673	17	13	803	5	10	0	7	15	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.999				0.850		0.992	
Flt Protected					0.999			0.950			0.957	
Satd. Flow (prot)	0	3536	0	0	3532	0	0	1770	1583	0	1768	0
Flt Permitted		0.954			0.923			0.816			0.771	
Satd. Flow (perm)	0	3373	0	0	3263	0	0	1520	1583	0	1425	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1				78		1	
Link Speed (mph)		30			30			15			25	
Link Distance (ft)		769			2398			132			221	
Travel Time (s)		17.5			54.5			6.0			6.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1818	18	14	873	5	11	0	8	16	1	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1838	0	0	892	0	0	11	8	0	18	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		1	1 2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	21.4	21.4		11.0			20.3	20.3	20.3	20.3	20.3	
Total Split (s)	57.0	57.0		11.0			22.0	22.0	22.0	22.0	22.0	
Total Split (%)	63.3%	63.3%		12.2%			24.4%	24.4%	24.4%	24.4%	24.4%	
Maximum Green (s)	51.6	51.6		7.0			17.7	17.7	17.7	17.7	17.7	
Yellow Time (s)	4.1	4.1		3.0			3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.3	1.3		1.0			1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		-1.4						-0.3	-0.3		-0.3	
Total Lost Time (s)		4.0						4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None			None	None	None	None	None	
Act Effct Green (s)		64.4			74.9			7.2	7.2		7.2	
Actuated g/C Ratio		0.72			0.83			0.08	0.08		0.08	
v/c Ratio		0.76			0.32			0.09	0.04		0.16	
Control Delay		13.3			3.0			39.3	0.4		39.6	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		13.3			3.0			39.3	0.4		39.6	
LOS		B			A			D	A		D	
Approach Delay		13.3			3.0			22.9			39.6	
Approach LOS		B			A			C			D	
Queue Length 50th (ft)		361			64			6	0		9	
Queue Length 95th (ft)		#568			86			22	0		30	
Internal Link Dist (ft)		689			2318			52			141	

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		2412			2745			304	379		285	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.76			0.32			0.04	0.02		0.06	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 85 (94%), Referenced to phase 2:EBWB, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 10.2

Intersection LOS: B

Intersection Capacity Utilization 65.2%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

 Ø1	 Ø2 (R)	 Ø4
11 s	57 s	22 s

HCM Signalized Intersection Capacity Analysis

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1673	17	13	803	5	10	0	7	15	1	1
Future Volume (vph)	2	1673	17	13	803	5	10	0	7	15	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.99	
Flt Protected		1.00			1.00			0.95	1.00		0.96	
Satd. Flow (prot)		3534			3533			1770	1583		1770	
Flt Permitted		0.95			0.92			0.82	1.00		0.77	
Satd. Flow (perm)		3373			3263			1521	1583		1425	
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)	2	1818	18	14	873	5	11	0	8	16	1	1
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	8	0	1	0
Lane Group Flow (vph)	0	1837	0	0	892	0	0	11	0	0	17	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		61.2			71.7			4.6	4.6		4.6	
Effective Green, g (s)		62.6			71.7			4.9	4.9		4.9	
Actuated g/C Ratio		0.70			0.80			0.05	0.05		0.05	
Clearance Time (s)		5.4						4.3	4.3		4.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		2346			2631			82	86		77	
v/s Ratio Prot					c0.04							
v/s Ratio Perm		c0.54			0.23			0.01	0.00		c0.01	
v/c Ratio		0.78			0.34			0.13	0.01		0.22	
Uniform Delay, d1		9.2			2.5			40.5	40.2		40.7	
Progression Factor		1.00			1.77			1.00	1.00		1.00	
Incremental Delay, d2		2.7			0.1			0.7	0.0		1.5	
Delay (s)		11.9			4.6			41.3	40.3		42.2	
Level of Service		B			A			D	D		D	
Approach Delay (s)		11.9			4.6			40.9			42.2	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			9.9									
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			90.0									
Intersection Capacity Utilization			65.2%									
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
 9: Bickford Dr. & Site Driveway #1/Site Driveway #2

Avon Village Center
 2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	0	10	20	0	14	16	301	29	25	224	15
Future Volume (vph)	9	0	10	20	0	14	16	301	29	25	224	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	125		0
Storage Lanes	0		0	0		0	1		1	1		0
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
Frt		0.929			0.945				0.850		0.991	
Flt Protected		0.977			0.971		0.950			0.950		
Satd. Flow (prot)	0	1691	0	0	1709	0	1770	1863	1583	1770	1846	0
Flt Permitted		0.977			0.971		0.950			0.950		
Satd. Flow (perm)	0	1691	0	0	1709	0	1770	1863	1583	1770	1846	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			181			443			384	
Travel Time (s)		4.0			4.1			10.1			8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	0	11	22	0	15	17	327	32	27	243	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	37	0	17	327	32	27	259	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 30.8%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

9: Bickford Dr. & Site Driveway #1/Site Driveway #2

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	0	10	20	0	14	16	301	29	25	224	15
Future Volume (Veh/h)	9	0	10	20	0	14	16	301	29	25	224	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	0	11	22	0	15	17	327	32	27	243	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								443				
pX, platoon unblocked												
vC, conflicting volume	681	698	251	669	674	327	259			359		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	681	698	251	669	674	327	259			359		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	99	94	100	98	99			98		
cM capacity (veh/h)	347	352	788	356	363	714	1306			1200		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	21	37	17	327	32	27	259					
Volume Left	10	22	17	0	0	27	0					
Volume Right	11	15	0	0	32	0	16					
cSH	491	447	1306	1700	1700	1200	1700					
Volume to Capacity	0.04	0.08	0.01	0.19	0.02	0.02	0.15					
Queue Length 95th (ft)	3	7	1	0	0	2	0					
Control Delay (s)	12.7	13.8	7.8	0.0	0.0	8.1	0.0					
Lane LOS	B	B	A			A						
Approach Delay (s)	12.7	13.8	0.4			0.8						
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			30.8%	ICU Level of Service					A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
10: Bickford Dr. & Climax Road/Main St.

Avon Village Center
2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	6	185	3	2	0	164	153	7	0	72	12
Future Volume (vph)	83	6	185	3	2	0	164	153	7	0	72	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	100		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
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
Frt		0.909						0.997			0.981	
Flt Protected		0.985			0.971			0.975				
Satd. Flow (prot)	0	1668	0	0	1809	0	0	1811	0	0	1827	0
Flt Permitted		0.985			0.971			0.975				
Satd. Flow (perm)	0	1668	0	0	1809	0	0	1811	0	0	1827	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		271			628			384			208	
Travel Time (s)		6.2			14.3			8.7			4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	7	201	3	2	0	178	166	8	0	78	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	298	0	0	5	0	0	352	0	0	91	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 47.7%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
10: Bickford Dr. & Climax Road/Main St.

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	83	6	185	3	2	0	164	153	7	0	72	12
Future Volume (veh/h)	83	6	185	3	2	0	164	153	7	0	72	12
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
Hourly flow rate (vph)	90	7	201	3	2	0	178	166	8	0	78	13
Approach Volume (veh/h)	298			5			352			91		
Crossing Volume (veh/h)	81			434			97			183		
High Capacity (veh/h)	1300			984			1284			1200		
High v/c (veh/h)	0.23			0.01			0.27			0.08		
Low Capacity (veh/h)	1084			799			1069			993		
Low v/c (veh/h)	0.27			0.01			0.33			0.09		
Intersection Summary												
Maximum v/c High	0.27											
Maximum v/c Low	0.33											
Intersection Capacity Utilization	47.7%			ICU Level of Service			A					

Intersection				
Intersection Delay, s/veh	6.6			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	298	5	352	91
Demand Flow Rate, veh/h	304	5	359	93
Vehicles Circulating, veh/h	83	443	99	187
Vehicles Exiting, veh/h	197	15	288	261
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	5.1	7.3	4.8
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	304	5	359	93
Cap Entry Lane, veh/h	1040	726	1023	937
Entry HV Adj Factor	0.980	0.992	0.980	0.983
Flow Entry, veh/h	298	5	352	91
Cap Entry, veh/h	1019	720	1003	921
V/C Ratio	0.292	0.007	0.351	0.099
Control Delay, s/veh	6.4	5.1	7.3	4.8
LOS	A	A	A	A
95th %tile Queue, veh	1	0	2	0

Lanes, Volumes, Timings
11: Climax Road & Bickford Ave. Ext.

Avon Village Center
2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	32	3	0	1	19	154	6	2	239	4
Future Volume (vph)	2	0	32	3	0	1	19	154	6	2	239	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.872			0.966			0.995			0.998	
Flt Protected		0.997			0.964			0.995				
Satd. Flow (prot)	0	1619	0	0	1735	0	0	1844	0	0	1859	0
Flt Permitted		0.997			0.964			0.995				
Satd. Flow (perm)	0	1619	0	0	1735	0	0	1844	0	0	1859	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		343			134			271			1156	
Travel Time (s)		7.8			3.0			6.2			26.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	0	35	3	0	1	21	167	7	2	260	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	4	0	0	195	0	0	266	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 31.6%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

11: Climax Road & Bickford Ave. Ext.

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	32	3	0	1	19	154	6	2	239	4
Future Volume (Veh/h)	2	0	32	3	0	1	19	154	6	2	239	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	35	3	0	1	21	167	7	2	260	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)											1156	
pX, platoon unblocked												
vC, conflicting volume	480	482	262	514	480	170	264			174		
vC1, stage 1 conf vol	266	266		212	212							
vC2, stage 2 conf vol	214	216		301	268							
vCu, unblocked vol	480	482	262	514	480	170	264			174		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	95	99	100	100	98			100		
cM capacity (veh/h)	650	609	777	598	602	873	1300			1403		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	37	4	195	266								
Volume Left	2	3	21	2								
Volume Right	35	1	7	4								
cSH	769	649	1300	1403								
Volume to Capacity	0.05	0.01	0.02	0.00								
Queue Length 95th (ft)	4	0	1	0								
Control Delay (s)	9.9	10.6	1.0	0.1								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.9	10.6	1.0	0.1								
Approach LOS	A	B										
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			31.6%	ICU Level of Service						A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Combined Imp. AM

							Ø1	Ø2
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Lane Configurations	W	W	T	T	L	L		
Traffic Volume (vph)	80	84	354	107	138	289		
Future Volume (vph)	80	84	354	107	138	289		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	0.931		0.969					
Flt Protected	0.976					0.984		
Satd. Flow (prot)	1693	0	1805	0	0	1833		
Flt Permitted	0.976					0.689		
Satd. Flow (perm)	1693	0	1805	0	0	1283		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR)	45		24					
Link Speed (mph)	35		40			40		
Link Distance (ft)	1156		405			551		
Travel Time (s)	22.5		6.9			9.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	87	91	385	116	150	314		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	178	0	501	0	0	464		
Turn Type	Prot		NA		D.P+P	NA		
Protected Phases	4		1 2		8	1 2 8	1	2
Permitted Phases					1 2			
Detector Phase	4		1 2		8	1 2 8		
Switch Phase								
Minimum Initial (s)	6.0				2.0		2.0	15.0
Minimum Split (s)	20.0				19.0		19.0	20.0
Total Split (s)	22.0				20.0		20.0	39.0
Total Split (%)	21.8%				19.8%		20%	39%
Maximum Green (s)	18.0				17.0		17.0	35.0
Yellow Time (s)	3.0				2.0		2.0	3.0
All-Red Time (s)	1.0				1.0		1.0	1.0
Lost Time Adjust (s)	0.0							
Total Lost Time (s)	4.0							
Lead/Lag	Lag				Lead		Lag	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes
Vehicle Extension (s)	1.5				2.0		2.0	5.0
Recall Mode	None				None		Min	Min
Walk Time (s)	5.0				5.0		5.0	5.0
Flash Dont Walk (s)	11.0				11.0		11.0	11.0
Pedestrian Calls (#/hr)	0				0		0	0
Act Effct Green (s)	10.9		48.0			56.3		
Actuated g/C Ratio	0.14		0.60			0.71		
v/c Ratio	0.66		0.46			0.48		
Control Delay	38.9		11.0			5.4		
Queue Delay	0.0		0.0			0.0		
Total Delay	38.9		11.0			5.4		
LOS	D		B			A		
Approach Delay	38.9		11.0			5.4		
Approach LOS	D		B			A		

Lanes, Volumes, Timings
 12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
 2020 Combined Imp. AM

	↙	↖	↑	↗	↘	↓		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Queue Length 50th (ft)	67		113			56		
Queue Length 95th (ft)	145		263			127		
Internal Link Dist (ft)	1076		325			471		
Turn Bay Length (ft)								
Base Capacity (vph)	434		1276			1191		
Starvation Cap Reductn	0		0			0		
Spillback Cap Reductn	0		0			0		
Storage Cap Reductn	0		0			0		
Reduced v/c Ratio	0.41		0.39			0.39		

Intersection Summary

Area Type: Other
 Cycle Length: 101
 Actuated Cycle Length: 79.8
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 13.1 Intersection LOS: B
 Intersection Capacity Utilization 67.6% ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

↙ Ø8	↕ Ø1	↕ Ø2	↘ Ø4
20 s	20 s	39 s	22 s

HCM Signalized Intersection Capacity Analysis

12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Combined Imp. AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	80	84	354	107	138	289
Future Volume (vph)	80	84	354	107	138	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.93		0.97			1.00
Flt Protected	0.98		1.00			0.98
Satd. Flow (prot)	1693		1805			1833
Flt Permitted	0.98		1.00			0.69
Satd. Flow (perm)	1693		1805			1284
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	87	91	385	116	150	314
RTOR Reduction (vph)	39	0	10	0	0	0
Lane Group Flow (vph)	139	0	491	0	0	464
Turn Type	Prot		NA		D.P+P	NA
Protected Phases	4		1 2		8	1 2 8
Permitted Phases					1 2	
Actuated Green, G (s)	10.9		47.9			57.3
Effective Green, g (s)	10.9		46.9			55.3
Actuated g/C Ratio	0.14		0.59			0.70
Clearance Time (s)	4.0					
Vehicle Extension (s)	1.5					
Lane Grp Cap (vph)	233		1068			954
v/s Ratio Prot	c0.08		0.27			c0.05
v/s Ratio Perm						c0.29
v/c Ratio	0.60		0.46			0.49
Uniform Delay, d1	32.1		9.1			5.5
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	2.7		0.1			0.1
Delay (s)	34.8		9.2			5.6
Level of Service	C		A			A
Approach Delay (s)	34.8		9.2			5.6
Approach LOS	C		A			A
Intersection Summary						
HCM 2000 Control Delay			11.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			79.2		Sum of lost time (s)	17.0
Intersection Capacity Utilization			67.6%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
13: Site Driveway #3/Residential Drive & Bickford Dr.

Avon Village Center
2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	221	14	4	71	1	8	0	3	3	0	3
Future Volume (vph)	1	221	14	4	71	1	8	0	3	3	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992			0.998			0.966			0.932	
Flt Protected					0.998			0.964			0.976	
Satd. Flow (prot)	0	1848	0	0	1855	0	0	1735	0	0	1694	0
Flt Permitted					0.998			0.964			0.976	
Satd. Flow (perm)	0	1848	0	0	1855	0	0	1735	0	0	1694	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			328			185			396	
Travel Time (s)		4.4			7.5			4.2			9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	240	15	4	77	1	9	0	3	3	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	256	0	0	82	0	0	12	0	0	6	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 22.8%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 13: Site Driveway #3/Residential Drive & Bickford Dr.

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	221	14	4	71	1	8	0	3	3	0	3
Future Volume (Veh/h)	1	221	14	4	71	1	8	0	3	3	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	240	15	4	77	1	9	0	3	3	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	78			255			338	336	248	338	342	78
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	78			255			338	336	248	338	342	78
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	100
cM capacity (veh/h)	1520			1310			612	583	791	612	578	983
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	256	82	12	6								
Volume Left	1	4	9	3								
Volume Right	15	1	3	3								
cSH	1520	1310	649	754								
Volume to Capacity	0.00	0.00	0.02	0.01								
Queue Length 95th (ft)	0	0	1	1								
Control Delay (s)	0.0	0.4	10.7	9.8								
Lane LOS	A	A	B	A								
Approach Delay (s)	0.0	0.4	10.7	9.8								
Approach LOS			B	A								
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			22.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
14: N. Main St./Retail Drive #2 & Bickford Dr.

Avon Village Center
2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	210	0	6	72	5	0	4	3	3	2	10
Future Volume (vph)	17	210	0	6	72	5	0	4	3	3	2	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
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
Frt					0.991			0.942			0.907	
Flt Protected		0.996		0.950							0.991	
Satd. Flow (prot)	0	1855	0	1770	1846	0	0	1755	0	0	1674	0
Flt Permitted		0.996		0.950							0.991	
Satd. Flow (perm)	0	1855	0	1770	1846	0	0	1755	0	0	1674	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		328			250			360			304	
Travel Time (s)		7.5			5.7			8.2			6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	228	0	7	78	5	0	4	3	3	2	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	246	0	7	83	0	0	7	0	0	16	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 28.9%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

14: N. Main St./Retail Drive #2 & Bickford Dr.

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	210	0	6	72	5	0	4	3	3	2	10
Future Volume (Veh/h)	17	210	0	6	72	5	0	4	3	3	2	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	228	0	7	78	5	0	4	3	3	2	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None					None						
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	83			228			368	361	228	364	358	80
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	83			228			368	361	228	364	358	80
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			100	99	100	99	100	99
cM capacity (veh/h)	1514			1340			573	556	811	579	558	980
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	246	7	83	7	16							
Volume Left	18	7	0	0	3							
Volume Right	0	0	5	3	11							
cSH	1514	1340	1700	643	800							
Volume to Capacity	0.01	0.01	0.05	0.01	0.02							
Queue Length 95th (ft)	1	0	0	1	2							
Control Delay (s)	0.6	7.7	0.0	10.7	9.6							
Lane LOS	A	A		B	A							
Approach Delay (s)	0.6	0.6		10.7	9.6							
Approach LOS				B	A							
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			28.9%	ICU Level of Service					A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
15: N. Main St. & Site Driveway #4

Avon Village Center
2020 Combined Imp. AM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	3	4	25	6	2
Future Volume (vph)	12	3	4	25	6	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.975		0.882			
Flt Protected	0.961					0.963
Satd. Flow (prot)	1745	0	1643	0	0	1794
Flt Permitted	0.961					0.963
Satd. Flow (perm)	1745	0	1643	0	0	1794
Link Speed (mph)	30		30			30
Link Distance (ft)	248		233			360
Travel Time (s)	5.6		5.3			8.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	3	4	27	7	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	31	0	0	9
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 15.3%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

15: N. Main St. & Site Driveway #4

Avon Village Center
2020 Combined Imp. AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	3	4	25	6	2
Future Volume (Veh/h)	12	3	4	25	6	2
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	3	4	27	7	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	34	18			31	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	34	18			31	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	975	1061			1582	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	16	31	9			
Volume Left	13	0	7			
Volume Right	3	27	0			
cSH	990	1700	1582			
Volume to Capacity	0.02	0.02	0.00			
Queue Length 95th (ft)	1	0	0			
Control Delay (s)	8.7	0.0	5.7			
Lane LOS	A		A			
Approach Delay (s)	8.7	0.0	5.7			
Approach LOS	A					
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			15.3%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
16: N. Main St. & Main St.

Avon Village Center
2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	0	0	0	0	0	0	16	0	0	8	6
Future Volume (vph)	13	0	0	0	0	0	0	16	0	0	8	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.941											
Flt Protected	0.950											
Satd. Flow (prot)	0	1770	0	0	1863	0	0	1863	0	0	1753	0
Flt Permitted	0.950											
Satd. Flow (perm)	0	1770	0	0	1863	0	0	1863	0	0	1753	0
Link Speed (mph)	30											
Link Distance (ft)	628											
Travel Time (s)	14.3											
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	0	0	0	0	0	0	17	0	0	9	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	0	0	0	0	0	17	0	0	16	0
Sign Control	Free											

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 13.3% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

16: N. Main St. & Main St.

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	0	0	0	0	0	0	16	0	0	8	6
Future Volume (Veh/h)	13	0	0	0	0	0	0	16	0	0	8	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	0	0	0	0	0	0	17	0	0	9	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0			0			40	28	0	36	28	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			40	28	0	36	28	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	98	100	100	99	99
cM capacity (veh/h)	1623			1623			945	858	1085	948	858	1085
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	0	17	16								
Volume Left	14	0	0	0								
Volume Right	0	0	0	7								
cSH	1623	1700	858	944								
Volume to Capacity	0.01	0.00	0.02	0.02								
Queue Length 95th (ft)	1	0	2	1								
Control Delay (s)	7.2	0.0	9.3	8.9								
Lane LOS	A		A	A								
Approach Delay (s)	7.2	0.0	9.3	8.9								
Approach LOS			A	A								
Intersection Summary												
Average Delay				8.5								
Intersection Capacity Utilization				13.3%	ICU Level of Service				A			
Analysis Period (min)				15								

Lanes, Volumes, Timings
17: Ensign Drive & N. Main St.

Avon Village Center
2020 Combined Imp. AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	8	16	193	116	0
Future Volume (vph)	0	8	16	193	116	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1770	1863	1863	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1770	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	636			203	406	
Travel Time (s)	14.5			4.6	9.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	9	17	210	126	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	0	17	210	126	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 20.2%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

17: Ensign Drive & N. Main St.

Avon Village Center
2020 Combined Imp. AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	8	16	193	116	0
Future Volume (Veh/h)	0	8	16	193	116	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	9	17	210	126	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)				203		
pX, platoon unblocked	1.00					
vC, conflicting volume	370	126	126			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	370	126	126			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	623	924	1460			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	9	17	210	126		
Volume Left	0	17	0	0		
Volume Right	9	0	0	0		
cSH	924	1460	1700	1700		
Volume to Capacity	0.01	0.01	0.12	0.07		
Queue Length 95th (ft)	1	1	0	0		
Control Delay (s)	8.9	7.5	0.0	0.0		
Lane LOS	A	A				
Approach Delay (s)	8.9	0.6		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			20.2%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
18: Ensign Drive & Main St./Site Driveway #7

Avon Village Center
2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	15	0	5	0	166	27	7	106	0
Future Volume (vph)	0	0	0	15	0	5	0	166	27	7	106	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.968			0.981				
Flt Protected					0.963						0.997	
Satd. Flow (prot)	0	1863	0	0	1736	0	0	1827	0	0	1857	0
Flt Permitted					0.963						0.997	
Satd. Flow (perm)	0	1863	0	0	1736	0	0	1827	0	0	1857	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		692			210			406			373	
Travel Time (s)		15.7			4.8			9.2			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	16	0	5	0	180	29	8	115	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	21	0	0	209	0	0	123	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 21.3% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 18: Ensign Drive & Main St./Site Driveway #7

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	15	0	5	0	166	27	7	106	0
Future Volume (Veh/h)	0	0	0	15	0	5	0	166	27	7	106	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	16	0	5	0	180	29	8	115	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								609				
pX, platoon unblocked												
vC, conflicting volume	330	340	115	326	326	194	115			209		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	330	340	115	326	326	194	115			209		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	97	100	99	100			99		
cM capacity (veh/h)	616	578	937	625	589	847	1474			1362		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	21	209	123								
Volume Left	0	16	0	8								
Volume Right	0	5	29	0								
cSH	1700	666	1474	1362								
Volume to Capacity	0.00	0.03	0.00	0.01								
Queue Length 95th (ft)	0	2	0	0								
Control Delay (s)	0.0	10.6	0.0	0.5								
Lane LOS	A	B		A								
Approach Delay (s)	0.0	10.6	0.0	0.5								
Approach LOS	A	B										
Intersection Summary												
Average Delay			0.8									
Intersection Capacity Utilization			21.3%	ICU Level of Service						A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
19: Ensign Drive & Site Driveway #5

Avon Village Center
2020 Combined Imp. AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	14	33	134	116	8
Future Volume (vph)	5	14	33	134	116	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899				0.991	
Flt Protected	0.988			0.990		
Satd. Flow (prot)	1655	0	0	1844	1846	0
Flt Permitted	0.988			0.990		
Satd. Flow (perm)	1655	0	0	1844	1846	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	280			373	494	
Travel Time (s)	6.4			8.5	11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	15	36	146	126	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	182	135	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 28.8%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

19: Ensign Drive & Site Driveway #5

Avon Village Center
2020 Combined Imp. AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	14	33	134	116	8
Future Volume (Veh/h)	5	14	33	134	116	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	15	36	146	126	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				982		
pX, platoon unblocked						
vC, conflicting volume	348	130	135			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	348	130	135			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	98	98			
cM capacity (veh/h)	632	919	1449			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	20	182	135			
Volume Left	5	36	0			
Volume Right	15	0	9			
cSH	826	1449	1700			
Volume to Capacity	0.02	0.02	0.08			
Queue Length 95th (ft)	2	2	0			
Control Delay (s)	9.5	1.7	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.5	1.7	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		1.5				
Intersection Capacity Utilization		28.8%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
20: Ensign Drive/Retail Drive #3 & Bickford Dr.

Avon Village Center
2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	197	16	91	80	26	1	27	114	16	17	2
Future Volume (vph)	4	197	16	91	80	26	1	27	114	16	17	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990			0.982			0.891			0.993	
Flt Protected		0.999			0.977						0.978	
Satd. Flow (prot)	0	1842	0	0	1787	0	0	1660	0	0	1809	0
Flt Permitted		0.999			0.977						0.978	
Satd. Flow (perm)	0	1842	0	0	1787	0	0	1660	0	0	1809	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			734			494			296	
Travel Time (s)		8.1			16.7			11.2			6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	214	17	99	87	28	1	29	124	17	18	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	235	0	0	214	0	0	154	0	0	37	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 46.0% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
20: Ensign Drive/Retail Drive #3 & Bickford Dr.

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	4	197	16	91	80	26	1	27	114	16	17	2
Future Volume (veh/h)	4	197	16	91	80	26	1	27	114	16	17	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
Hourly flow rate (vph)	4	214	17	99	87	28	1	29	124	17	18	2
Approach Volume (veh/h)	235			214			154			37		
Crossing Volume (veh/h)	134			34			235			187		
High Capacity (veh/h)	1247			1348			1152			1196		
High v/c (veh/h)	0.19			0.16			0.13			0.03		
Low Capacity (veh/h)	1036			1128			950			990		
Low v/c (veh/h)	0.23			0.19			0.16			0.04		
Intersection Summary												
Maximum v/c High	0.19											
Maximum v/c Low	0.23											
Intersection Capacity Utilization	46.0%			ICU Level of Service					A			

Intersection				
Intersection Delay, s/veh	5.7			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	235	214	154	37
Demand Flow Rate, veh/h	239	219	157	37
Vehicles Circulating, veh/h	136	35	239	191
Vehicles Exiting, veh/h	92	361	136	63
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.1	5.2	5.9	4.3
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	239	219	157	37
Cap Entry Lane, veh/h	986	1091	890	933
Entry HV Adj Factor	0.982	0.978	0.984	0.990
Flow Entry, veh/h	235	214	154	37
Cap Entry, veh/h	969	1067	875	925
V/C Ratio	0.242	0.201	0.176	0.040
Control Delay, s/veh	6.1	5.2	5.9	4.3
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	0

Lanes, Volumes, Timings
21: Bickford Dr. & Fisher Drive

Avon Village Center
2020 Combined Imp. AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	37	291	161	38	43	33
Future Volume (vph)	37	291	161	38	43	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			100	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850	0.941	
Flt Protected	0.950	0.999			0.972	
Satd. Flow (prot)	1681	1768	1863	1583	1704	0
Flt Permitted	0.950	0.999			0.972	
Satd. Flow (perm)	1681	1768	1863	1583	1704	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		734	305		171	
Travel Time (s)		16.7	6.9		3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	316	175	41	47	36
Shared Lane Traffic (%)	11%					
Lane Group Flow (vph)	36	320	175	41	83	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 34.3% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

21: Bickford Dr. & Fisher Drive

Avon Village Center
2020 Combined Imp. AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	37	291	161	38	43	33
Future Volume (Veh/h)	37	291	161	38	43	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	316	175	41	47	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			637			
pX, platoon unblocked						
vC, conflicting volume	216				571	175
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	216				571	175
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				90	96
cM capacity (veh/h)	1354				468	868
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	27	329	175	41	83	
Volume Left	27	13	0	0	47	
Volume Right	0	0	0	41	36	
cSH	1354	1354	1700	1700	585	
Volume to Capacity	0.03	0.03	0.10	0.02	0.14	
Queue Length 95th (ft)	2	2	0	0	12	
Control Delay (s)	7.7	0.6	0.0	0.0	12.2	
Lane LOS	A	A			B	
Approach Delay (s)	1.1		0.0		12.2	
Approach LOS					B	
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			34.3%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
22: Bickford Dr. & Office Drive

Avon Village Center
2020 Combined Imp. AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	330	200	10	1	1
Future Volume (vph)	4	330	200	10	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.932	
Flt Protected		0.999			0.976	
Satd. Flow (prot)	0	1861	1850	0	1694	0
Flt Permitted		0.999			0.976	
Satd. Flow (perm)	0	1861	1850	0	1694	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		305	332		317	
Travel Time (s)		6.9	7.5		7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	359	217	11	1	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	363	228	0	2	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	30.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

22: Bickford Dr. & Office Drive

Avon Village Center
2020 Combined Imp. AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	330	200	10	1	1
Future Volume (Veh/h)	4	330	200	10	1	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	359	217	11	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			332			
pX, platoon unblocked						
vC, conflicting volume	228				590	222
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	228				590	222
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1340				469	817
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	363	228	2			
Volume Left	4	0	1			
Volume Right	0	11	1			
cSH	1340	1700	596			
Volume to Capacity	0.00	0.13	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.1	0.0	11.1			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	11.1			
Approach LOS			B			
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			30.6%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center

2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	35	61	56	20	26	45	949	10	48	661	146
Future Volume (vph)	235	35	61	56	20	26	45	949	10	48	661	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	100		0	100		100
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	50			25			50			50		
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
Frt		0.905			0.916			0.998				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1686	0	1770	1706	0	1770	1859	0	1770	1863	1583
Flt Permitted	0.724			0.690			0.204			0.085		
Satd. Flow (perm)	1349	1686	0	1285	1706	0	380	1859	0	158	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		66			28			1				93
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		332			231			526			680	
Travel Time (s)		7.5			5.3			12.0			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	38	66	61	22	28	49	1032	11	52	718	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	255	104	0	61	50	0	49	1043	0	52	718	159
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		2
Detector Phase	4	4		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		3.0	25.0		3.0	25.0	25.0
Minimum Split (s)	31.0	31.0		31.0	31.0		8.0	31.0		8.0	31.0	31.0
Total Split (s)	31.0	31.0		31.0	31.0		8.0	51.0		8.0	51.0	51.0
Total Split (%)	34.4%	34.4%		34.4%	34.4%		8.9%	56.7%		8.9%	56.7%	56.7%
Maximum Green (s)	27.0	27.0		27.0	27.0		4.0	47.0		4.0	47.0	47.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	5.0
Recall Mode	Min	Min		Min	Min		None	Min		None	Min	Min
Act Effct Green (s)	25.8	25.8		25.8	25.8		49.4	47.1		49.4	47.1	47.1
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.58	0.55		0.58	0.55	0.55
v/c Ratio	0.63	0.19		0.16	0.09		0.17	1.02		0.31	0.70	0.17
Control Delay	34.5	11.4		24.4	13.5		8.4	55.1		12.0	19.6	5.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	34.5	11.4		24.4	13.5		8.4	55.1		12.0	19.6	5.4
LOS	C	B		C	B		A	E		B	B	A
Approach Delay		27.8			19.5			53.0			16.8	
Approach LOS		C			B			D			B	

Lanes, Volumes, Timings

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center

2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	124	15		25	9		9	~639		10	284	17
Queue Length 95th (ft)	209	53		56	35		24	#910		25	445	48
Internal Link Dist (ft)		252			151			446			600	
Turn Bay Length (ft)	200						100			100		100
Base Capacity (vph)	426	578		406	558		284	1024		166	1025	913
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.60	0.18		0.15	0.09		0.17	1.02		0.31	0.70	0.17

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 85.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 34.4

Intersection LOS: C

Intersection Capacity Utilization 78.1%

ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

 Ø1	 Ø2	 Ø4
8 s	51 s	31 s
 Ø5	 Ø6	
8 s	51 s	

HCM Signalized Intersection Capacity Analysis

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	235	35	61	56	20	26	45	949	10	48	661	146
Future Volume (vph)	235	35	61	56	20	26	45	949	10	48	661	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.90		1.00	0.92		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1685		1770	1706		1770	1860		1770	1863	1583
Flt Permitted	0.72	1.00		0.69	1.00		0.20	1.00		0.08	1.00	1.00
Satd. Flow (perm)	1349	1685		1285	1706		380	1860		158	1863	1583
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)	255	38	66	61	22	28	49	1032	11	52	718	159
RTOR Reduction (vph)	0	46	0	0	20	0	0	0	0	0	0	43
Lane Group Flow (vph)	255	58	0	61	30	0	49	1043	0	52	718	116
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		2
Actuated Green, G (s)	25.8	25.8		25.8	25.8		49.4	47.1		49.4	47.1	47.1
Effective Green, g (s)	25.8	25.8		25.8	25.8		49.4	47.1		49.4	47.1	47.1
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.57	0.54		0.57	0.54	0.54
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	5.0
Lane Grp Cap (vph)	399	498		380	504		251	1004		132	1006	855
v/s Ratio Prot		0.03			0.02		0.01	c0.56		c0.01	0.39	
v/s Ratio Perm	c0.19			0.05			0.11			0.21		0.07
v/c Ratio	0.64	0.12		0.16	0.06		0.20	1.04		0.39	0.71	0.14
Uniform Delay, d1	26.7	22.4		22.7	22.0		11.6	20.1		19.4	15.0	10.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.6	0.2		0.4	0.1		0.1	38.8		0.7	3.0	0.2
Delay (s)	31.3	22.6		23.1	22.1		11.7	58.9		20.1	18.0	10.1
Level of Service	C	C		C	C		B	E		C	B	B
Approach Delay (s)		28.8			22.7			56.8			16.8	
Approach LOS		C			C			E			B	
Intersection Summary												
HCM 2000 Control Delay			36.3				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			87.2				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			78.1%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
 24: Routes 10/202 (Simsbury Road) & Site Driveway #8

Avon Village Center
 2020 Combined Imp. AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	3	5	1002	780	3
Future Volume (vph)	2	3	5	1002	780	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			75
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.919					
Flt Protected	0.980					
Satd. Flow (prot)	1678	0	0	1863	1863	0
Flt Permitted	0.980					
Satd. Flow (perm)	1678	0	0	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	357			1053	526	
Travel Time (s)	8.1			23.9	12.0	
Confl. Peds. (#/hr)			3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	3	5	1089	848	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	0	1094	851	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized
 Intersection Capacity Utilization 66.7% ICU Level of Service C
 Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

24: Routes 10/202 (Simsbury Road) & Site Driveway #8

Avon Village Center
2020 Combined Imp. AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	3	5	1002	780	3
Future Volume (Veh/h)	2	3	5	1002	780	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	3	5	1089	848	3
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					526	
pX, platoon unblocked	0.68	0.68	0.68			
vC, conflicting volume	1952	852	854			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2161	553	555			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	99	99			
cM capacity (veh/h)	35	363	692			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	5	1094	851			
Volume Left	2	5	0			
Volume Right	3	0	3			
cSH	77	692	1700			
Volume to Capacity	0.06	0.01	0.50			
Queue Length 95th (ft)	5	1	0			
Control Delay (s)	55.0	0.3	0.0			
Lane LOS	F	A				
Approach Delay (s)	55.0	0.3	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay		0.3				
Intersection Capacity Utilization		66.7%		ICU Level of Service		C
Analysis Period (min)		15				

Lanes, Volumes, Timings
25: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Combined Imp. AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	2	12	2	0	1	13	964	12	10	720	51
Future Volume (vph)	31	2	12	2	0	1	13	964	12	10	720	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.964			0.955			0.998			0.991	
Flt Protected		0.966			0.968			0.999			0.999	
Satd. Flow (prot)	0	1735	0	0	1722	0	0	1857	0	0	1844	0
Flt Permitted		0.966			0.968			0.999			0.999	
Satd. Flow (perm)	0	1735	0	0	1722	0	0	1857	0	0	1844	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		582			275			237			1053	
Travel Time (s)		13.2			6.3			5.4			23.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	2	13	2	0	1	14	1048	13	11	783	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	3	0	0	1075	0	0	849	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 69.0%

ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis 25: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Combined Imp. AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	2	12	2	0	1	13	964	12	10	720	51
Future Volume (Veh/h)	31	2	12	2	0	1	13	964	12	10	720	51
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	2	13	2	0	1	14	1048	13	11	783	55
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								725				
pX, platoon unblocked	0.84	0.84		0.84	0.84	0.84				0.84		
vC, conflicting volume	1916	1922	810	1929	1942	1054	838			1061		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1992	1999	810	2008	2024	973	838			980		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	8	96	97	94	100	100	98			98		
cM capacity (veh/h)	37	49	380	34	47	259	796			595		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	49	3	1075	849								
Volume Left	34	2	14	11								
Volume Right	13	1	13	55								
cSH	49	48	796	595								
Volume to Capacity	0.99	0.06	0.02	0.02								
Queue Length 95th (ft)	107	5	1	1								
Control Delay (s)	257.8	85.5	0.6	0.5								
Lane LOS	F	F	A	A								
Approach Delay (s)	257.8	85.5	0.6	0.5								
Approach LOS	F	F										
Intersection Summary												
Average Delay			7.1									
Intersection Capacity Utilization			69.0%		ICU Level of Service					C		
Analysis Period (min)			15									

Lanes, Volumes, Timings
26: Woodford Ave & Site Driveway #7

Avon Village Center
2020 Combined Imp. AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	3	1	42	63	1
Future Volume (vph)	3	3	1	42	63	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.998	
Flt Protected	0.976			0.999		
Satd. Flow (prot)	1694	0	0	1861	1859	0
Flt Permitted	0.976			0.999		
Satd. Flow (perm)	1694	0	0	1861	1859	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			205	88	
Travel Time (s)	4.0			4.7	2.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	3	1	46	68	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	0	47	69	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 13.4%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

26: Woodford Ave & Site Driveway #7

Avon Village Center
2020 Combined Imp. AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	3	1	42	63	1
Future Volume (Veh/h)	3	3	1	42	63	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	3	1	46	68	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	116	68	69			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	116	68	69			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	879	995	1532			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	6	47	69			
Volume Left	3	1	0			
Volume Right	3	0	1			
cSH	933	1532	1700			
Volume to Capacity	0.01	0.00	0.04			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	8.9	0.2	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.9	0.2	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			13.4%	ICU Level of Service		A
Analysis Period (min)			15			

Appendix D

Intersection Capacity Analysis Worksheets 2020 Background Traffic Volumes Weekday Afternoon Peak Hour

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	833	583	135	1525	69	436	295	58	67	292	107
Future Volume (vph)	150	833	583	135	1525	69	436	295	58	67	292	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		0	300		0	325		0	0		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.994			0.975				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3518	0	3433	1816	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3518	0	3433	1816	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			420		4			7				102
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		774			1216			527			471	
Travel Time (s)		17.6			27.6			12.0			10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	905	634	147	1658	75	474	321	63	73	317	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	905	634	147	1733	0	474	384	0	73	317	116
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Detector Phase	1	6	6	5	2		7 4	7 8		4	8	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	20.0					3.0	5.0	3.0
Minimum Split (s)	9.1	22.0	22.0	9.5	27.0					7.0	26.7	9.1
Total Split (s)	18.0	66.4	66.4	22.6	71.0					8.0	27.0	18.0
Total Split (%)	12.9%	47.4%	47.4%	16.1%	50.7%					5.7%	19.3%	12.9%
Maximum Green (s)	11.9	59.4	59.4	16.5	64.0					4.0	21.3	11.9
Yellow Time (s)	3.1	5.0	5.0	3.1	5.0					3.0	3.3	3.1
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0					1.0	2.4	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Lost Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes	Yes
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Recall Mode	None	C-Min	C-Min	None	C-Min					None	None	None
Walk Time (s)											20.0	
Flash Dont Walk (s)											1.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)	11.9	60.8	60.8	15.1	64.0		18.9	37.9		4.0	21.3	38.9
Actuated g/C Ratio	0.08	0.43	0.43	0.11	0.46		0.14	0.27		0.03	0.15	0.28
v/c Ratio	1.09	0.59	0.69	0.77	1.08		1.02	0.77		1.46	1.12	0.23
Control Delay	156.4	32.3	14.4	86.2	82.7		106.5	58.1		333.2	142.4	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	156.4	32.3	14.4	86.2	82.7		106.5	58.1		333.2	142.4	10.3

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background PM

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	10.1
Total Split (s)	16.0
Total Split (%)	11%
Maximum Green (s)	10.9
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	1.5
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	C	B	F	F		F	E		F	F	B
Approach Delay		37.5			83.0			84.9			139.7	
Approach LOS		D			F			F			F	
Queue Length 50th (ft)	~166	331	156	131	~923		~236	319		~90	~331	9
Queue Length 95th (ft)	#315	401	305	#224	#1063		#348	444		#198	#524	58
Internal Link Dist (ft)		694			1136			447			391	
Turn Bay Length (ft)	285			300			325					
Base Capacity (vph)	150	1536	925	208	1610		463	496		50	283	513
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	1.09	0.59	0.69	0.71	1.08		1.02	0.77		1.46	1.12	0.23

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.46

Intersection Signal Delay: 73.5

Intersection LOS: E

Intersection Capacity Utilization 100.4%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4	 Ø7	 Ø8
18 s	71 s	8 s	16 s	27 s
 Ø5	 Ø6 (R)			
22.6 s	66.4 s			

Lane Group	Ø7
LOS	
Approach Delay	
Approach LOS	
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	

HCM Signalized Intersection Capacity Analysis

1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	833	583	135	1525	69	436	295	58	67	292	107
Future Volume (vph)	150	833	583	135	1525	69	436	295	58	67	292	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	7.0	7.0	6.1	7.0		5.1	5.1		4.0	5.7	6.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3516		3433	1817		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3516		3433	1817		1770	1863	1583
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)	163	905	634	147	1658	75	474	321	63	73	317	116
RTOR Reduction (vph)	0	0	238	0	2	0	0	5	0	0	0	78
Lane Group Flow (vph)	163	905	396	147	1731	0	474	379	0	73	317	38
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Actuated Green, G (s)	11.9	60.8	60.8	15.1	64.0		18.9	37.3		4.0	21.3	33.2
Effective Green, g (s)	11.9	60.8	60.8	15.1	64.0		14.9	37.3		4.0	21.3	33.2
Actuated g/C Ratio	0.09	0.43	0.43	0.11	0.46		0.11	0.27		0.03	0.15	0.24
Clearance Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Lane Grp Cap (vph)	150	1536	687	190	1607		365	484		50	283	375
v/s Ratio Prot	c0.09	0.26		0.08	c0.49		c0.14	0.21		c0.04	c0.17	0.01
v/s Ratio Perm			0.25									0.02
v/c Ratio	1.09	0.59	0.58	0.77	1.08		1.30	0.78		1.46	1.12	0.10
Uniform Delay, d1	64.0	30.1	29.9	60.8	38.0		62.5	47.6		68.0	59.4	41.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	98.5	1.7	3.5	17.6	46.4		153.2	7.5		288.9	89.8	0.0
Delay (s)	162.6	31.8	33.4	78.4	84.4		215.7	55.1		356.9	149.1	41.8
Level of Service	F	C	C	E	F		F	E		F	F	D
Approach Delay (s)		44.9			83.9			143.8			154.5	
Approach LOS		D			F			F			F	
Intersection Summary												
HCM 2000 Control Delay			88.1			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			27.9			
Intersection Capacity Utilization			100.4%			ICU Level of Service			G			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1473	22	37	2024	2	34	0	41	15	0	20
Future Volume (vph)	22	1473	22	37	2024	2	34	0	41	15	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	130		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998						0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3539	0	1770	1583	0	1770	1583	0
Flt Permitted	0.046			0.119			0.743			0.728		
Satd. Flow (perm)	86	3532	0	222	3539	0	1384	1583	0	1356	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2						169			147	
Link Speed (mph)		30			30			15			30	
Link Distance (ft)		720			1575			243			146	
Travel Time (s)		16.4			35.8			11.0			3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	1601	24	40	2200	2	37	0	45	16	0	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	1625	0	40	2202	0	37	45	0	16	22	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Detector Phase	1	6		5	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	8.1	21.2		8.0	21.2		11.5	11.5		11.5	11.5	
Total Split (s)	15.0	80.0		15.0	80.0		25.0	25.0		25.0	25.0	
Total Split (%)	12.5%	66.7%		12.5%	66.7%		20.8%	20.8%		20.8%	20.8%	
Maximum Green (s)	10.9	73.8		11.0	73.8		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.1	4.3		3.0	4.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.9		1.0	1.9		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Act Effct Green (s)	100.4	94.8		101.4	96.7		9.0	9.0		9.0	9.0	
Actuated g/C Ratio	0.84	0.79		0.84	0.81		0.08	0.08		0.08	0.08	
v/c Ratio	0.16	0.58		0.15	0.77		0.36	0.16		0.16	0.09	
Control Delay	3.2	1.5		3.1	11.5		61.3	1.3		54.1	0.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	3.2	1.5		3.1	11.5		61.3	1.3		54.1	0.7	
LOS	A	A		A	B		E	A		D	A	
Approach Delay		1.5			11.4			28.4			23.1	
Approach LOS		A			B			C			C	

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	1	19		4	522		28	0		12	0	
Queue Length 95th (ft)	m0	16		10	744		62	0		34	0	
Internal Link Dist (ft)		640			1495			163			66	
Turn Bay Length (ft)	150			130								
Base Capacity (vph)	227	2790		333	2853		224	398		220	380	
Starvation Cap Reductn	0	110		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	0.11	0.61		0.12	0.77		0.17	0.11		0.07	0.06	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 73 (61%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 7.8

Intersection LOS: A

Intersection Capacity Utilization 74.3%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4
15 s	80 s	25 s
 Ø5	 Ø6 (R)	
15 s	80 s	

HCM Signalized Intersection Capacity Analysis

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1473	22	37	2024	2	34	0	41	15	0	20
Future Volume (vph)	22	1473	22	37	2024	2	34	0	41	15	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		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)	1770	3531		1770	3539		1770	1583		1770	1583	
Flt Permitted	0.05	1.00		0.12	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	85	3531		221	3539		1384	1583		1356	1583	
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)	24	1601	24	40	2200	2	37	0	45	16	0	22
RTOR Reduction (vph)	0	0	0	0	0	0	0	42	0	0	21	0
Lane Group Flow (vph)	24	1625	0	40	2202	0	37	3	0	16	1	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Actuated Green, G (s)	95.3	91.7		97.6	92.8		7.8	7.8		7.8	7.8	
Effective Green, g (s)	95.3	91.7		97.6	92.8		7.8	7.8		7.8	7.8	
Actuated g/C Ratio	0.79	0.76		0.81	0.77		0.06	0.06		0.06	0.06	
Clearance Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	118	2698		241	2736		89	102		88	102	
v/s Ratio Prot	0.01	0.46		c0.01	c0.62			0.00			0.00	
v/s Ratio Perm	0.16			0.13			c0.03			0.01		
v/c Ratio	0.20	0.60		0.17	0.80		0.42	0.03		0.18	0.01	
Uniform Delay, d1	11.2	6.2		4.2	8.2		53.9	52.6		53.1	52.5	
Progression Factor	0.74	0.10		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.8		0.3	2.6		3.1	0.1		1.0	0.1	
Delay (s)	9.0	1.5		4.5	10.8		57.0	52.7		54.1	52.6	
Level of Service	A	A		A	B		E	D		D	D	
Approach Delay (s)		1.6			10.7			54.6			53.2	
Approach LOS		A			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			8.2			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			15.8			
Intersection Capacity Utilization			74.3%			ICU Level of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1523	35	6	1970	0	71	0	18	14	3	14
Future Volume (vph)	3	1523	35	6	1970	0	71	0	18	14	3	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997							0.850		0.939	
Flt Protected								0.950			0.978	
Satd. Flow (prot)	0	3529	0	0	3539	0	0	1770	1583	0	1711	0
Flt Permitted		0.951			0.947			0.736			0.830	
Satd. Flow (perm)	0	3356	0	0	3352	0	0	1371	1583	0	1452	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3							60		15	
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		726			720			189			163	
Travel Time (s)		16.5			16.4			8.6			7.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	1655	38	7	2141	0	77	0	20	15	3	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1696	0	0	2148	0	0	77	20	0	33	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	20.6	20.6		20.6	20.6		12.5	12.5	12.5	12.5	12.5	
Total Split (s)	66.0	66.0		66.0	66.0		30.0	30.0	30.0	30.0	30.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		25.0%	25.0%	25.0%	25.0%	25.0%	
Maximum Green (s)	60.4	60.4		60.4	60.4		24.5	24.5	24.5	24.5	24.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.4	1.4		1.4	1.4		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.6			5.6			5.5	5.5		5.5	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		100.2			100.2			12.3	12.3		12.3	
Actuated g/C Ratio		0.84			0.84			0.10	0.10		0.10	
v/c Ratio		0.61			0.77			0.55	0.09		0.20	
Control Delay		1.4			7.0			64.7	0.8		33.2	
Queue Delay		0.2			0.0			0.0	0.0		0.0	
Total Delay		1.7			7.0			64.7	0.8		33.2	
LOS		A			A			E	A		C	
Approach Delay		1.7			7.0			51.5			33.2	
Approach LOS		A			A			D			C	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	20%
Maximum Green (s)	20.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		18			233			58	0		13	
Queue Length 95th (ft)		45			365			104	0		43	
Internal Link Dist (ft)		646			640			109			83	
Turn Bay Length (ft)												
Base Capacity (vph)		2802			2798			279	370		308	
Starvation Cap Reductn		355			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.69			0.77			0.28	0.05		0.11	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 73 (61%), Referenced to phase 2:EBWB, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 6.0

Intersection LOS: A

Intersection Capacity Utilization 76.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

  02 (R)	  03	  04
66 s	24 s	30 s

Lane Group	Ø3
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	

HCM Signalized Intersection Capacity Analysis

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

2020 Background PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1523	35	6	1970	0	71	0	18	14	3	14
Future Volume (vph)	3	1523	35	6	1970	0	71	0	18	14	3	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6			5.6			5.5	5.5		5.5	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.94	
Flt Protected		1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)		3527			3539			1770	1583		1710	
Flt Permitted		0.95			0.95			0.74	1.00		0.83	
Satd. Flow (perm)		3353			3352			1370	1583		1450	
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)	3	1655	38	7	2141	0	77	0	20	15	3	15
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	18	0	14	0
Lane Group Flow (vph)	0	1695	0	0	2148	0	0	77	2	0	19	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		98.0			98.0			10.9	10.9		10.9	
Effective Green, g (s)		98.0			98.0			10.9	10.9		10.9	
Actuated g/C Ratio		0.82			0.82			0.09	0.09		0.09	
Clearance Time (s)		5.6			5.6			5.5	5.5		5.5	
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		2738			2737			124	143		131	
v/s Ratio Prot												
v/s Ratio Perm		0.51			0.64			0.06	0.00		0.01	
v/c Ratio		0.62			0.78			0.62	0.01		0.15	
Uniform Delay, d1		4.1			5.6			52.6	49.7		50.3	
Progression Factor		0.18			0.80			1.00	1.00		1.00	
Incremental Delay, d2		0.6			1.5			9.3	0.0		0.5	
Delay (s)		1.4			6.0			61.9	49.7		50.8	
Level of Service		A			A			E	D		D	
Approach Delay (s)		1.4			6.0			59.3			50.8	
Approach LOS		A			A			E			D	
Intersection Summary												
HCM 2000 Control Delay			5.7									
HCM 2000 Level of Service										A		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			120.0							15.1		
Intersection Capacity Utilization			76.3%							D		
ICU Level of Service												
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	852	80	257	1431	280	56	193	175	539	261	180
Future Volume (vph)	232	852	80	257	1431	280	56	193	175	539	261	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	300		0	150		150	150		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.987			0.975				0.850		0.939	
Flt Protected	0.950			0.950				0.989		0.950		
Satd. Flow (prot)	1770	3493	0	1770	3451	0	0	1842	1583	3433	1749	0
Flt Permitted	0.950			0.950				0.989		0.950		
Satd. Flow (perm)	1770	3493	0	1770	3451	0	0	1842	1583	3433	1749	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			20				64		26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		702			726			680			262	
Travel Time (s)		16.0			16.5			15.5			6.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	252	926	87	279	1555	304	61	210	190	586	284	196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	252	1013	0	279	1859	0	0	271	190	586	480	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	21.0		11.0	21.0		20.0	20.0	11.0	11.0	11.0	
Total Split (s)	22.0	43.0		22.0	43.0		25.0	25.0	22.0	30.0	30.0	
Total Split (%)	18.3%	35.8%		18.3%	35.8%		20.8%	20.8%	18.3%	25.0%	25.0%	
Maximum Green (s)	18.0	37.0		18.0	37.0		21.0	21.0	18.0	26.0	26.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0		0.0	-1.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	1.5	3.0		1.5	3.0		3.0	3.0	1.5	2.5	2.5	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effct Green (s)	17.9	38.0		18.8	38.9			20.2	43.0	26.0	26.0	
Actuated g/C Ratio	0.15	0.32		0.16	0.32			0.17	0.36	0.22	0.22	
v/c Ratio	0.95	0.91		1.01	1.64			0.88	0.31	0.79	1.20	
Control Delay	96.1	52.0		91.3	321.2			76.7	19.7	53.1	151.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	
Total Delay	96.1	52.0		91.3	321.2			76.7	19.7	53.1	151.8	
LOS	F	D		F	F			E	B	D	F	
Approach Delay		60.8			291.2			53.2			97.6	
Approach LOS		E			F			D			F	

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	196	392		~245	~1126			205	68	222	~437	
Queue Length 95th (ft)	#360	#518		m#385	#1246			#348	128	289	#649	
Internal Link Dist (ft)		622			646			600			182	
Turn Bay Length (ft)	300			300					150	150		
Base Capacity (vph)	265	1112		277	1132			322	608	743	399	
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	0.95	0.91		1.01	1.64			0.84	0.31	0.79	1.20	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 75 (63%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.64

Intersection Signal Delay: 168.0

Intersection LOS: F

Intersection Capacity Utilization 113.5%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4	 Ø8
22 s	43 s	30 s	25 s
 Ø5	 Ø6 (R)		
22 s	43 s		

HCM Signalized Intersection Capacity Analysis

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	852	80	257	1431	280	56	193	175	539	261	180
Future Volume (vph)	232	852	80	257	1431	280	56	193	175	539	261	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.97	1.00	
Frt	1.00	0.99		1.00	0.98			1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3494		1770	3452			1842	1583	3433	1749	
Flt Permitted	0.95	1.00		0.95	1.00			0.99	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3494		1770	3452			1842	1583	3433	1749	
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)	252	926	87	279	1555	304	61	210	190	586	284	196
RTOR Reduction (vph)	0	6	0	0	14	0	0	0	43	0	20	0
Lane Group Flow (vph)	252	1007	0	279	1845	0	0	271	147	586	460	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Actuated Green, G (s)	17.9	37.0		18.8	37.9			20.2	39.0	26.0	26.0	
Effective Green, g (s)	17.9	38.0		18.8	38.9			20.2	39.0	26.0	26.0	
Actuated g/C Ratio	0.15	0.32		0.16	0.32			0.17	0.32	0.22	0.22	
Clearance Time (s)	4.0	6.0		4.0	6.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	3.0		1.5	3.0			3.0	1.5	2.5	2.5	
Lane Grp Cap (vph)	264	1106		277	1119			310	567	743	378	
v/s Ratio Prot	0.14	0.29		c0.16	c0.53			c0.15	0.04	0.17	c0.26	
v/s Ratio Perm									0.05			
v/c Ratio	0.95	0.91		1.01	1.65			0.87	0.26	0.79	1.22	
Uniform Delay, d1	50.6	39.4		50.6	40.5			48.7	29.8	44.4	47.0	
Progression Factor	1.00	1.00		0.89	1.06			1.00	1.00	1.00	1.00	
Incremental Delay, d2	42.4	12.6		45.3	294.8			22.8	0.1	5.4	119.1	
Delay (s)	93.0	52.0		90.4	337.7			71.4	29.9	49.8	166.1	
Level of Service	F	D		F	F			E	C	D	F	
Approach Delay (s)		60.1			305.4			54.3			102.1	
Approach LOS		E			F			D			F	
Intersection Summary												
HCM 2000 Control Delay		175.0			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.28										
Actuated Cycle Length (s)		120.0			Sum of lost time (s)			17.0				
Intersection Capacity Utilization		113.5%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

Lanes, Volumes, Timings
5: Routes 44/202 (West Main Street) & Woodford Ave

Avon Village Center
2020 Background PM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	 		 	
Traffic Volume (vph)	42	1156	1648	19	8	74
Future Volume (vph)	42	1156	1648	19	8	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.879	
Flt Protected		0.998			0.995	
Satd. Flow (prot)	0	3532	3532	0	1629	0
Flt Permitted		0.998			0.995	
Satd. Flow (perm)	0	3532	3532	0	1629	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		462	702		333	
Travel Time (s)		10.5	13.7		7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	1257	1791	21	9	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1303	1812	0	89	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 74.2%	ICU Level of Service D					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

5: Routes 44/202 (West Main Street) & Woodford Ave

Avon Village Center
2020 Background PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↔	↔↔		↔	
Traffic Volume (veh/h)	42	1156	1648	19	8	74
Future Volume (Veh/h)	42	1156	1648	19	8	74
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	1257	1791	21	9	80
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		462	702			
pX, platoon unblocked	0.69				0.77	0.69
vC, conflicting volume	1812				2522	906
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1270				1368	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	88				90	89
cM capacity (veh/h)	373				94	745
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	465	838	1194	618	89	
Volume Left	46	0	0	0	9	
Volume Right	0	0	0	21	80	
cSH	373	1700	1700	1700	437	
Volume to Capacity	0.12	0.49	0.70	0.36	0.20	
Queue Length 95th (ft)	10	0	0	0	19	
Control Delay (s)	3.9	0.0	0.0	0.0	15.3	
Lane LOS	A				C	
Approach Delay (s)	1.4		0.0		15.3	
Approach LOS					C	
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			74.2%		ICU Level of Service	D
Analysis Period (min)			15			

Lanes, Volumes, Timings

Avon Village Center

6: Avon Office Park Drive/Ensign Drive & Routes 44/202 (West Main Street)

2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	1097	7	12	1672	38	44	7	62	39	3	105
Future Volume (vph)	81	1097	7	12	1672	38	44	7	62	39	3	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		80
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.997			0.926				0.850
Flt Protected		0.997						0.981			0.955	
Satd. Flow (prot)	0	3442	0	0	3565	0	0	1726	0	0	1765	1599
Flt Permitted		0.651			0.944			0.853			0.658	
Satd. Flow (perm)	0	2247	0	0	3365	0	0	1501	0	0	1216	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			5			67				141
Link Speed (mph)		35			35			25			30	
Link Distance (ft)		1397			462			348			1531	
Travel Time (s)		27.2			9.0			9.5			34.8	
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 (%)	1%	1%	0%	0%	1%	0%	0%	0%	0%	3%	0%	1%
Adj. Flow (vph)	88	1192	8	13	1817	41	48	8	67	42	3	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1288	0	0	1871	0	0	123	0	0	45	114
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Detector Phase	1	1 2 3		2 3	2 3		4	4		4	4	4
Switch Phase												
Minimum Initial (s)	5.0						7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	8.0						11.0	11.0		11.0	11.0	11.0
Total Split (s)	8.0						22.0	22.0		22.0	22.0	22.0
Total Split (%)	12.9%						35.5%	35.5%		35.5%	35.5%	35.5%
Maximum Green (s)	5.0						18.0	18.0		18.0	18.0	18.0
Yellow Time (s)	3.0						3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	0.0						1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)							0.0			0.0	0.0	0.0
Total Lost Time (s)							4.0			4.0	4.0	4.0
Lead/Lag	Lead						Lag	Lag		Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0						2.0	2.0		2.0	2.0	2.0
Recall Mode	None						None	None		None	None	None
Act Effct Green (s)		48.0			33.1			8.2			8.2	8.2
Actuated g/C Ratio		0.77			0.53			0.13			0.13	0.13
v/c Ratio		0.64			1.04			0.48			0.28	0.34
Control Delay		4.4			52.6			19.5			28.3	6.4
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		4.4			52.6			19.5			28.3	6.4
LOS		A			D			B			C	A

Lane Group	Ø2	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	6.0
Minimum Split (s)	19.0	10.0
Total Split (s)	22.0	10.0
Total Split (%)	35%	16%
Maximum Green (s)	18.0	6.0
Yellow Time (s)	3.0	3.5
All-Red Time (s)	1.0	0.5
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	3.0
Recall Mode	C-Max	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		

Lanes, Volumes, Timings

Avon Village Center

6: Avon Office Park Drive/Ensign Drive & Routes 44/202 (West Main Street)

2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		4.4			52.6			19.5			12.6	
Approach LOS		A			D			B			B	
Queue Length 50th (ft)		53			~458			20			16	0
Queue Length 95th (ft)		117			#595			59			40	27
Internal Link Dist (ft)		1317			382			268			1451	
Turn Bay Length (ft)												80
Base Capacity (vph)		2009			1801			483			353	564
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.64			1.04			0.25			0.13	0.20

Intersection Summary

Area Type: Other

Cycle Length: 62

Actuated Cycle Length: 62

Offset: 47 (76%), Referenced to phase 2:EBWB and 6:, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 31.5

Intersection LOS: C

Intersection Capacity Utilization 103.9%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: Avon Office Park Drive/Ensign Drive & Routes 44/202 (West Main Street)

								
Ø1	Ø2 (R)		Ø3			Ø4		
8 s	22 s		10 s			22 s		

Lane Group	Ø2	Ø3
Approach Delay		
Approach LOS		
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		

HCM Signalized Intersection Capacity Analysis

Avon Village Center

6: Avon Office Park Drive/Ensign Drive & Routes 44/202 (West Main Street)

2020 Background PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	1097	7	12	1672	38	44	7	62	39	3	105
Future Volume (vph)	81	1097	7	12	1672	38	44	7	62	39	3	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.0			3.0			4.0			4.0	4.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frt		1.00			1.00			0.93			1.00	0.85
Flt Protected		1.00			1.00			0.98			0.96	1.00
Satd. Flow (prot)		3440			3562			1727			1766	1599
Flt Permitted		0.65			0.94			0.85			0.66	1.00
Satd. Flow (perm)		2246			3362			1501			1217	1599
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)	88	1192	8	13	1817	41	48	8	67	42	3	114
RTOR Reduction (vph)	0	1	0	0	2	0	0	60	0	0	0	101
Lane Group Flow (vph)	0	1287	0	0	1869	0	0	63	0	0	45	13
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	0%	0%	0%	3%	0%	1%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Actuated Green, G (s)		44.2			31.3			6.8			6.8	6.8
Effective Green, g (s)		43.2			32.3			6.8			6.8	6.8
Actuated g/C Ratio		0.70			0.52			0.11			0.11	0.11
Clearance Time (s)								4.0			4.0	4.0
Vehicle Extension (s)								2.0			2.0	2.0
Lane Grp Cap (vph)		1832			1751			164			133	175
v/s Ratio Prot		c0.16										
v/s Ratio Perm		0.33			c0.56			c0.04			0.04	0.01
v/c Ratio		0.70			1.07			0.39			0.34	0.07
Uniform Delay, d1		5.6			14.9			25.7			25.5	24.8
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		1.2			42.0			0.6			0.6	0.1
Delay (s)		6.8			56.8			26.2			26.1	24.8
Level of Service		A			E			C			C	C
Approach Delay (s)		6.8			56.8			26.2			25.2	
Approach LOS		A			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			35.6									
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			62.0									
Intersection Capacity Utilization			103.9%									
Analysis Period (min)			15									
c Critical Lane Group												

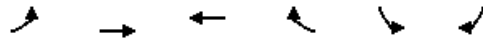
Lanes, Volumes, Timings
7: Routes 44/202 (West Main Street) & Climax Road

Avon Village Center
2020 Background PM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	85	1017	1750	100	60	184
Future Volume (vph)	85	1017	1750	100	60	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	75
Storage Lanes	1			0	1	1
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.992			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3511	0	1770	1583
Flt Permitted	0.058				0.950	
Satd. Flow (perm)	108	3539	3511	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			10			142
Link Speed (mph)		30	30		30	
Link Distance (ft)		2379	1397		888	
Travel Time (s)		54.1	31.8		20.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	1105	1902	109	65	200
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	1105	2011	0	65	200
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2					4
Detector Phase	1	2	2		4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0		7.0	7.0
Minimum Split (s)	8.1	23.3	23.3		20.5	20.5
Total Split (s)	11.0	66.0	66.0		23.0	23.0
Total Split (%)	11.0%	66.0%	66.0%		23.0%	23.0%
Maximum Green (s)	7.9	58.7	58.7		18.5	18.5
Yellow Time (s)	3.0	4.2	4.2		3.0	3.0
All-Red Time (s)	0.1	3.1	3.1		1.5	1.5
Lost Time Adjust (s)	0.0	-1.2	-1.2		0.0	0.0
Total Lost Time (s)	3.1	6.1	6.1		4.5	4.5
Lead/Lag	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	1.5	1.5		2.0	2.0
Recall Mode	None	C-Max	C-Max		None	None
Act Effct Green (s)	79.9	70.9	70.9		10.1	10.1
Actuated g/C Ratio	0.80	0.71	0.71		0.10	0.10
v/c Ratio	0.45	0.44	0.81		0.37	0.70
Control Delay	25.2	6.4	15.3		46.5	27.4
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	25.2	6.4	15.3		46.5	27.4
LOS	C	A	B		D	C
Approach Delay		7.9	15.3		32.0	
Approach LOS		A	B		C	

Lanes, Volumes, Timings
 7: Routes 44/202 (West Main Street) & Climax Road

Avon Village Center
 2020 Background PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 50th (ft)	22	107	386		40	36
Queue Length 95th (ft)	m84	138	#806		77	103
Internal Link Dist (ft)		2299	1317		808	
Turn Bay Length (ft)	125					75
Base Capacity (vph)	225	2508	2491		327	408
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.41	0.44	0.81		0.20	0.49

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 14.0

Intersection LOS: B

Intersection Capacity Utilization 74.3%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

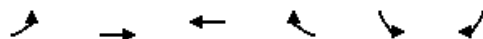
Splits and Phases: 7: Routes 44/202 (West Main Street) & Climax Road



HCM Signalized Intersection Capacity Analysis

7: Routes 44/202 (West Main Street) & Climax Road

Avon Village Center
2020 Background PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	85	1017	1750	100	60	184
Future Volume (vph)	85	1017	1750	100	60	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	6.1	6.1		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3510		1770	1583
Flt Permitted	0.06	1.00	1.00		0.95	1.00
Satd. Flow (perm)	108	3539	3510		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	1105	1902	109	65	200
RTOR Reduction (vph)	0	0	3	0	0	128
Lane Group Flow (vph)	92	1105	2008	0	65	72
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2					4
Actuated Green, G (s)	75.0	69.0	69.0		10.1	10.1
Effective Green, g (s)	75.0	70.2	70.2		10.1	10.1
Actuated g/C Ratio	0.75	0.70	0.70		0.10	0.10
Clearance Time (s)	3.1	7.3	7.3		4.5	4.5
Vehicle Extension (s)	3.0	1.5	1.5		2.0	2.0
Lane Grp Cap (vph)	180	2484	2464		178	159
v/s Ratio Prot	c0.03	0.31	c0.57		0.04	
v/s Ratio Perm	0.35					c0.05
v/c Ratio	0.51	0.44	0.81		0.37	0.45
Uniform Delay, d1	14.4	6.5	10.4		42.0	42.4
Progression Factor	1.95	0.81	1.00		1.00	1.00
Incremental Delay, d2	2.1	0.5	3.1		0.5	0.8
Delay (s)	30.2	5.7	13.5		42.4	43.1
Level of Service	C	A	B		D	D
Approach Delay (s)		7.6	13.5		42.9	
Approach LOS		A	B		D	
Intersection Summary						
HCM 2000 Control Delay			13.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.75			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	13.7
Intersection Capacity Utilization			74.3%		ICU Level of Service	D
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1069	13	2	1872	29	19	1	6	22	0	11
Future Volume (vph)	11	1069	13	2	1872	29	19	1	6	22	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998				0.850		0.955	
Flt Protected		0.999						0.954			0.968	
Satd. Flow (prot)	0	3529	0	0	3532	0	0	1777	1583	0	1722	0
Flt Permitted		0.912			0.955			0.904			0.786	
Satd. Flow (perm)	0	3221	0	0	3373	0	0	1684	1583	0	1398	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				70		70	
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		751			2379			143			251	
Travel Time (s)		17.1			54.1			3.3			6.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	1162	14	2	2035	32	21	1	7	24	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1188	0	0	2069	0	0	22	7	0	36	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		1	1 2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	20.4	20.4		11.0			9.3	9.3	9.3	9.3	9.3	
Total Split (s)	64.0	64.0		11.0			25.0	25.0	25.0	25.0	25.0	
Total Split (%)	64.0%	64.0%		11.0%			25.0%	25.0%	25.0%	25.0%	25.0%	
Maximum Green (s)	58.6	58.6		7.0			20.7	20.7	20.7	20.7	20.7	
Yellow Time (s)	4.1	4.1		3.0			3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.3	1.3		1.0			1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0						0.0	0.0		0.0	
Total Lost Time (s)		5.4						4.3	4.3		4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None			None	None	None	None	None	
Act Effct Green (s)		64.8			84.6			7.2	7.2		7.2	
Actuated g/C Ratio		0.65			0.85			0.07	0.07		0.07	
v/c Ratio		0.57			0.72			0.18	0.04		0.22	
Control Delay		12.4			5.0			46.5	0.3		5.7	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		12.4			5.0			46.5	0.3		5.7	
LOS		B			A			D	A		A	
Approach Delay		12.4			5.0			35.3			5.7	
Approach LOS		B			A			D			A	
Queue Length 50th (ft)		243			310			13	0		0	
Queue Length 95th (ft)		310			5			37	0		10	
Internal Link Dist (ft)		671			2299			63			171	

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		2089			2882			348	383		344	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.57			0.72			0.06	0.02		0.10	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 45 (45%), Referenced to phase 2:EBWB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 7.9

Intersection LOS: A

Intersection Capacity Utilization 69.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)



HCM Signalized Intersection Capacity Analysis

Avon Village Center

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

2020 Background PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1069	13	2	1872	29	19	1	6	22	0	11
Future Volume (vph)	11	1069	13	2	1872	29	19	1	6	22	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4			4.0			4.3	4.3		4.3	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.95	
Flt Protected		1.00			1.00			0.95	1.00		0.97	
Satd. Flow (prot)		3531			3531			1778	1583		1722	
Flt Permitted		0.91			0.95			0.90	1.00		0.79	
Satd. Flow (perm)		3223			3372			1685	1583		1399	
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)	12	1162	14	2	2035	32	21	1	7	24	0	12
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	7	0	34	0
Lane Group Flow (vph)	0	1187	0	0	2068	0	0	22	0	0	2	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		63.2			81.5			4.8	4.8		4.8	
Effective Green, g (s)		63.2			81.5			4.8	4.8		4.8	
Actuated g/C Ratio		0.63			0.82			0.05	0.05		0.05	
Clearance Time (s)		5.4						4.3	4.3		4.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		2036			2777			80	75		67	
v/s Ratio Prot					c0.14							
v/s Ratio Perm		0.37			c0.47			c0.01	0.00		0.00	
v/c Ratio		0.58			0.74			0.28	0.00		0.03	
Uniform Delay, d1		10.7			4.4			45.9	45.3		45.4	
Progression Factor		1.00			1.27			1.00	1.00		1.00	
Incremental Delay, d2		1.2			0.7			1.9	0.0		0.2	
Delay (s)		12.0			6.2			47.8	45.3		45.5	
Level of Service		B			A			D	D		D	
Approach Delay (s)		12.0			6.2			47.2			45.5	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			9.0		HCM 2000 Level of Service				A			
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			100.0		Sum of lost time (s)				13.7			
Intersection Capacity Utilization			69.5%		ICU Level of Service				C			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
9: Climax Road & Bickford Drive

Avon Village Center
2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	4	13	151	2	56	22	115	48	35	80	10
Future Volume (vph)	11	4	13	151	2	56	22	115	48	35	80	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.937			0.964			0.965			0.989	
Flt Protected		0.980			0.965			0.994			0.986	
Satd. Flow (prot)	0	1710	0	0	1733	0	0	1787	0	0	1816	0
Flt Permitted		0.980			0.965			0.994			0.986	
Satd. Flow (perm)	0	1710	0	0	1733	0	0	1787	0	0	1816	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		690			1368			888			1920	
Travel Time (s)		15.7			31.1			20.2			43.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	4	14	164	2	61	24	125	52	38	87	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	227	0	0	201	0	0	136	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 38.3%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

9: Climax Road & Bickford Drive

Avon Village Center
2020 Background PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	4	13	151	2	56	22	115	48	35	80	10
Future Volume (Veh/h)	11	4	13	151	2	56	22	115	48	35	80	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	4	14	164	2	61	24	125	52	38	87	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								888				
pX, platoon unblocked												
vC, conflicting volume	430	394	92	384	373	151	98			177		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	430	394	92	384	373	151	98			177		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	99	70	100	93	98			97		
cM capacity (veh/h)	482	520	965	545	534	895	1495			1399		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	30	227	201	136								
Volume Left	12	164	24	38								
Volume Right	14	61	52	11								
cSH	637	609	1495	1399								
Volume to Capacity	0.05	0.37	0.02	0.03								
Queue Length 95th (ft)	4	43	1	2								
Control Delay (s)	10.9	14.4	1.0	2.3								
Lane LOS	B	B	A	A								
Approach Delay (s)	10.9	14.4	1.0	2.3								
Approach LOS	B	B										
Intersection Summary												
Average Delay			6.9									
Intersection Capacity Utilization			38.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
10: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Background PM

							Ø1	Ø2
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Lane Configurations								
Traffic Volume (vph)	100	82	467	85	40	466		
Future Volume (vph)	100	82	467	85	40	466		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	0.939		0.979					
Flt Protected	0.973					0.996		
Satd. Flow (prot)	1702	0	1824	0	0	1855		
Flt Permitted	0.973					0.945		
Satd. Flow (perm)	1702	0	1824	0	0	1760		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR)	35		14					
Link Speed (mph)	30		30			30		
Link Distance (ft)	1920		449			352		
Travel Time (s)	43.6		10.2			8.0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	109	89	508	92	43	507		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	198	0	600	0	0	550		
Turn Type	Prot		NA		D.P+P	NA		
Protected Phases	4		1 2		8	1 2 8	1	2
Permitted Phases					1 2			
Detector Phase	4		1 2		8	1 2 8		
Switch Phase								
Minimum Initial (s)	6.0				2.0		2.0	15.0
Minimum Split (s)	20.0				19.0		19.0	20.0
Total Split (s)	22.0				20.0		20.0	39.0
Total Split (%)	21.8%				19.8%		20%	39%
Maximum Green (s)	18.0				17.0		17.0	35.0
Yellow Time (s)	3.0				2.0		2.0	3.0
All-Red Time (s)	1.0				1.0		1.0	1.0
Lost Time Adjust (s)	0.0							
Total Lost Time (s)	4.0							
Lead/Lag	Lag				Lead		Lag	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes
Vehicle Extension (s)	1.5				2.0		2.0	5.0
Recall Mode	None				None		Min	Min
Walk Time (s)	5.0				5.0		5.0	5.0
Flash Dont Walk (s)	11.0				11.0		11.0	11.0
Pedestrian Calls (#/hr)	0				0		0	0
Act Effct Green (s)	11.9		46.2			59.1		
Actuated g/C Ratio	0.15		0.57			0.72		
v/c Ratio	0.71		0.58			0.43		
Control Delay	44.2		14.8			4.8		
Queue Delay	0.0		0.0			0.0		
Total Delay	44.2		14.8			4.8		
LOS	D		B			A		
Approach Delay	44.2		14.8			4.8		
Approach LOS	D		B			A		

								
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Queue Length 50th (ft)	81		178			74		
Queue Length 95th (ft)	172		343			149		
Internal Link Dist (ft)	1840		369			272		
Turn Bay Length (ft)								
Base Capacity (vph)	421		1291			1542		
Starvation Cap Reductn	0		0			0		
Spillback Cap Reductn	0		0			0		
Storage Cap Reductn	0		0			0		
Reduced v/c Ratio	0.47		0.46			0.36		

Intersection Summary

Area Type: Other

Cycle Length: 101

Actuated Cycle Length: 81.6

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 15.0

Intersection LOS: B

Intersection Capacity Utilization 74.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 10: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

 Ø8	 Ø1	 Ø2	 Ø4
20 s	20 s	39 s	22 s

HCM Signalized Intersection Capacity Analysis

10: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Background PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	100	82	467	85	40	466
Future Volume (vph)	100	82	467	85	40	466
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		3.0			3.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.94		0.98			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1703		1824			1855
Flt Permitted	0.97		1.00			0.95
Satd. Flow (perm)	1703		1824			1760
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	89	508	92	43	507
RTOR Reduction (vph)	30	0	6	0	0	0
Lane Group Flow (vph)	168	0	594	0	0	550
Turn Type	Prot		NA		D,P+P	NA
Protected Phases	4		1 2		8	1 2 8
Permitted Phases					1 2	
Actuated Green, G (s)	11.9		45.1			58.0
Effective Green, g (s)	11.9		45.1			58.0
Actuated g/C Ratio	0.15		0.56			0.72
Clearance Time (s)	4.0					
Vehicle Extension (s)	1.5					
Lane Grp Cap (vph)	250		1016			1276
v/s Ratio Prot	c0.10		c0.33			c0.07
v/s Ratio Perm						0.24
v/c Ratio	0.67		0.58			0.43
Uniform Delay, d1	32.7		11.7			4.7
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	5.5		0.6			0.1
Delay (s)	38.2		12.3			4.8
Level of Service	D		B			A
Approach Delay (s)	38.2		12.3			4.8
Approach LOS	D		B			A
Intersection Summary						
HCM 2000 Control Delay			13.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.60			
Actuated Cycle Length (s)			80.9		Sum of lost time (s)	14.0
Intersection Capacity Utilization			74.8%		ICU Level of Service	D
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings
11: Ensign Drive & Bickford Drive

Avon Village Center
2020 Background PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	79	8	7	103	139	184
Future Volume (vph)	79	8	7	103	139	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.987				0.923	
Flt Protected	0.957			0.997		
Satd. Flow (prot)	1759	0	0	1857	1719	0
Flt Permitted	0.957			0.997		
Satd. Flow (perm)	1759	0	0	1857	1719	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1368			1531	746	
Travel Time (s)	31.1			34.8	17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	9	8	112	151	200
Shared Lane Traffic (%)						
Lane Group Flow (vph)	95	0	0	120	351	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 30.1%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

11: Ensign Drive & Bickford Drive

Avon Village Center
2020 Background PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	79	8	7	103	139	184
Future Volume (Veh/h)	79	8	7	103	139	184
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	86	9	8	112	151	200
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	379	251	351			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	379	251	351			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	99	99			
cM capacity (veh/h)	619	788	1208			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	95	120	351			
Volume Left	86	8	0			
Volume Right	9	0	200			
cSH	632	1208	1700			
Volume to Capacity	0.15	0.01	0.21			
Queue Length 95th (ft)	13	1	0			
Control Delay (s)	11.7	0.6	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.7	0.6	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		2.1				
Intersection Capacity Utilization		30.1%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
12: Ensign Drive & Fisher Drive

Avon Village Center
2020 Background PM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	20	23	300	8	15	165
Future Volume (vph)	20	23	300	8	15	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.928				0.876	
Flt Protected				0.954	0.996	
Satd. Flow (prot)	1729	0	0	1777	1625	0
Flt Permitted				0.954	0.996	
Satd. Flow (perm)	1729	0	0	1777	1625	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	465			1075	746	
Travel Time (s)	10.6			24.4	17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	25	326	9	16	179
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	335	195	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 41.4%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

12: Ensign Drive & Fisher Drive

Avon Village Center
2020 Background PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	20	23	300	8	15	165
Future Volume (Veh/h)	20	23	300	8	15	165
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	25	326	9	16	179
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1075		
pX, platoon unblocked						
vC, conflicting volume			47		696	34
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		696	34
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			79		95	83
cM capacity (veh/h)			1560		323	1039
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	47	335	195			
Volume Left	0	326	16			
Volume Right	25	0	179			
cSH	1700	1560	879			
Volume to Capacity	0.03	0.21	0.22			
Queue Length 95th (ft)	0	20	21			
Control Delay (s)	0.0	7.7	10.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	7.7	10.3			
Approach LOS			B			
Intersection Summary						
Average Delay			8.0			
Intersection Capacity Utilization			41.4%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings

13: Routes 10/202 (Simsbury Road) & Fisher Drive/Mountain View Ave

Avon Village Center

2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	22	18	96	60	25	19	689	19	31	906	229
Future Volume (vph)	145	22	18	96	60	25	19	689	19	31	906	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			50			50		
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
Frt		0.987			0.956			0.996			0.970	
Flt Protected		0.962		0.950			0.950			0.950		
Satd. Flow (prot)	0	1769	0	1770	1781	0	1770	1855	0	1770	1807	0
Flt Permitted		0.712		0.737			0.067			0.262		
Satd. Flow (perm)	0	1309	0	1373	1781	0	125	1855	0	488	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			20			3			30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1075			256			1606			677	
Travel Time (s)		24.4			5.8			36.5			15.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	24	20	104	65	27	21	749	21	34	985	249
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	202	0	104	92	0	21	770	0	34	1234	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		3.0	25.0		3.0	25.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		8.0	31.0		8.0	31.0	
Total Split (s)	18.0	18.0		18.0	18.0		8.0	64.0		8.0	64.0	
Total Split (%)	20.0%	20.0%		20.0%	20.0%		8.9%	71.1%		8.9%	71.1%	
Maximum Green (s)	14.0	14.0		14.0	14.0		4.0	60.0		4.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	1.5		1.5	1.5		1.5	5.0		1.5	5.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)		14.0		14.0	14.0		60.8	58.5		61.6	60.1	
Actuated g/C Ratio		0.16		0.16	0.16		0.71	0.69		0.72	0.71	
v/c Ratio		0.92		0.46	0.30		0.13	0.60		0.08	0.96	
Control Delay		81.4		40.7	28.8		4.5	10.3		3.3	31.5	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		81.4		40.7	28.8		4.5	10.3		3.3	31.5	
LOS		F		D	C		A	B		A	C	
Approach Delay		81.4			35.2			10.1			30.7	
Approach LOS		F			D			B			C	

Lanes, Volumes, Timings

13: Routes 10/202 (Simsbury Road) & Fisher Drive/Mountain View Ave

Avon Village Center

2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		100		48	32		2	219		4	419	
Queue Length 95th (ft)		#253		107	82		7	326		10	#994	
Internal Link Dist (ft)		995			176			1526			597	
Turn Bay Length (ft)							100			125		
Base Capacity (vph)		219		226	309		166	1310		413	1284	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.92		0.46	0.30		0.13	0.59		0.08	0.96	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 85.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 28.6

Intersection LOS: C

Intersection Capacity Utilization 85.2%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 13: Routes 10/202 (Simsbury Road) & Fisher Drive/Mountain View Ave

 Ø1	 Ø2	 Ø4
8 s	64 s	18 s
 Ø5	 Ø6	
8 s	64 s	

HCM Signalized Intersection Capacity Analysis

13: Routes 10/202 (Simsbury Road) & Fisher Drive/Mountain View Ave

Avon Village Center
2020 Background PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	22	18	96	60	25	19	689	19	31	906	229
Future Volume (vph)	145	22	18	96	60	25	19	689	19	31	906	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.99		1.00	0.96		1.00	1.00		1.00	0.97	
Flt Protected		0.96		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1769		1770	1781		1770	1855		1770	1806	
Flt Permitted		0.71		0.74	1.00		0.07	1.00		0.26	1.00	
Satd. Flow (perm)		1309		1374	1781		126	1855		488	1806	
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)	158	24	20	104	65	27	21	749	21	34	985	249
RTOR Reduction (vph)	0	4	0	0	17	0	0	1	0	0	9	0
Lane Group Flow (vph)	0	198	0	104	75	0	21	769	0	34	1225	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		14.0		14.0	14.0		60.8	59.3		62.4	60.1	
Effective Green, g (s)		14.0		14.0	14.0		60.8	59.3		62.4	60.1	
Actuated g/C Ratio		0.16		0.16	0.16		0.69	0.68		0.71	0.69	
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		1.5		1.5	1.5		1.5	5.0		1.5	5.0	
Lane Grp Cap (vph)		209		219	284		115	1255		381	1239	
v/s Ratio Prot					0.04		c0.00	0.41		0.00	c0.68	
v/s Ratio Perm		c0.15		0.08			0.12			0.06		
v/c Ratio		0.95		0.47	0.26		0.18	0.61		0.09	0.99	
Uniform Delay, d1		36.4		33.5	32.3		21.7	7.8		5.6	13.4	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		46.4		0.6	0.2		0.3	1.3		0.0	22.7	
Delay (s)		82.8		34.1	32.5		22.0	9.1		5.7	36.1	
Level of Service		F		C	C		C	A		A	D	
Approach Delay (s)		82.8			33.3			9.4			35.3	
Approach LOS		F			C			A			D	
Intersection Summary												
HCM 2000 Control Delay			30.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			87.6			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			85.2%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
14: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Background PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	2	11	8	2	3	23	676	6	2	961	57
Future Volume (vph)	48	2	11	8	2	3	23	676	6	2	961	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.971			0.999			0.992	
Flt Protected		0.962			0.969			0.998				
Satd. Flow (prot)	0	1747	0	0	1753	0	0	1857	0	0	1848	0
Flt Permitted		0.962			0.969			0.998				
Satd. Flow (perm)	0	1747	0	0	1753	0	0	1857	0	0	1848	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		532			187			212			1606	
Travel Time (s)		12.1			4.3			4.8			36.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	2	12	9	2	3	25	735	7	2	1045	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	66	0	0	14	0	0	767	0	0	1109	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 66.0%

ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

14: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Background PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	2	11	8	2	3	23	676	6	2	961	57
Future Volume (Veh/h)	48	2	11	8	2	3	23	676	6	2	961	57
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	2	12	9	2	3	25	735	7	2	1045	62
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								694				
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	1872	1872	1076	1882	1900	738	1107			742		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1918	1918	1076	1928	1949	645	1107			649		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	97	95	78	96	99	96			100		
cM capacity (veh/h)	42	57	267	40	55	421	631			834		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	66	14	767	1109								
Volume Left	52	9	25	2								
Volume Right	12	3	7	62								
cSH	51	52	631	834								
Volume to Capacity	1.31	0.27	0.04	0.00								
Queue Length 95th (ft)	151	23	3	0								
Control Delay (s)	360.7	97.2	1.1	0.1								
Lane LOS	F	F	A	A								
Approach Delay (s)	360.7	97.2	1.1	0.1								
Approach LOS	F	F										
Intersection Summary												
Average Delay			13.3									
Intersection Capacity Utilization			66.0%		ICU Level of Service					C		
Analysis Period (min)			15									

Appendix D

Intersection Capacity Analysis Worksheets 2020 Combined Traffic Volumes Weekday Afternoon Peak Hour

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	1113	668	135	1787	69	516	295	58	67	292	107
Future Volume (vph)	150	1113	668	135	1787	69	516	295	58	67	292	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		0	300		0	325		0	0		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.994			0.975				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3518	0	3433	1816	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3518	0	3433	1816	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			433		3			7				95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			1189			682			591	
Travel Time (s)		20.0			27.0			15.5			13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	1210	726	147	1942	75	561	321	63	73	317	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	1210	726	147	2017	0	561	384	0	73	317	116
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Detector Phase	1	6	6	5	2		7 4	7 8		4	8	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	20.0					3.0	5.0	3.0
Minimum Split (s)	9.1	22.0	22.0	9.1	27.0					7.0	26.7	9.1
Total Split (s)	17.0	72.6	72.6	22.4	78.0					8.0	29.0	17.0
Total Split (%)	11.3%	48.4%	48.4%	14.9%	52.0%					5.3%	19.3%	11.3%
Maximum Green (s)	10.9	65.6	65.6	16.3	71.0					4.0	23.3	10.9
Yellow Time (s)	3.1	5.0	5.0	3.1	5.0					3.0	3.3	3.1
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0					1.0	2.4	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Lost Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes	Yes
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Recall Mode	None	Min	Min	None	Min					None	None	None
Walk Time (s)											20.0	
Flash Dont Walk (s)											1.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)	10.9	66.5	66.5	15.4	71.0		20.9	41.9		4.0	23.3	39.9
Actuated g/C Ratio	0.07	0.44	0.44	0.10	0.47		0.14	0.28		0.03	0.16	0.27
v/c Ratio	1.27	0.77	0.77	0.81	1.21		1.17	0.75		1.55	1.10	0.24
Control Delay	222.8	39.6	19.7	97.0	136.2		152.5	58.8		373.4	138.1	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	222.8	39.6	19.7	97.0	136.2		152.5	58.8		373.4	138.1	12.7

Lanes, Volumes, Timings
 1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
 2020 Combined PM

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	10.1
Total Split (s)	18.0
Total Split (%)	12%
Maximum Green (s)	12.9
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	1.5
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	D	B	F	F		F	E		F	F	B
Approach Delay		47.0			133.5			114.4			143.3	
Approach LOS		D			F			F			F	
Queue Length 50th (ft)	~200	526	262	142	~1267		~336	339		~100	~350	15
Queue Length 95th (ft)	#354	618	450	#253	#1402		#457	466		#212	#546	68
Internal Link Dist (ft)		799			1109			602			511	
Turn Bay Length (ft)	285			300			325					
Base Capacity (vph)	128	1569	942	192	1666		478	512		47	289	490
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	1.27	0.77	0.77	0.77	1.21		1.17	0.75		1.55	1.10	0.24

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.55

Intersection Signal Delay: 99.4

Intersection LOS: F

Intersection Capacity Utilization 109.9%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

 Ø1	 Ø2	 Ø4	 Ø7	 Ø8
17 s	78 s	8 s	18 s	29 s
 Ø5	 Ø6			
22.4 s	72.6 s			

Lane Group	Ø7
LOS	
Approach Delay	
Approach LOS	
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	

HCM Signalized Intersection Capacity Analysis

1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	1113	668	135	1787	69	516	295	58	67	292	107
Future Volume (vph)	150	1113	668	135	1787	69	516	295	58	67	292	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	7.0	7.0	6.1	7.0		5.1	5.1		4.0	5.7	6.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3519		3433	1817		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3519		3433	1817		1770	1863	1583
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)	163	1210	726	147	1942	75	561	321	63	73	317	116
RTOR Reduction (vph)	0	0	241	0	2	0	0	5	0	0	0	73
Lane Group Flow (vph)	163	1210	485	147	2015	0	561	379	0	73	317	43
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Actuated Green, G (s)	10.9	66.5	66.5	15.4	71.0		20.9	41.3		4.0	23.3	34.2
Effective Green, g (s)	10.9	66.5	66.5	15.4	71.0		16.9	41.3		4.0	23.3	34.2
Actuated g/C Ratio	0.07	0.44	0.44	0.10	0.47		0.11	0.28		0.03	0.16	0.23
Clearance Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Lane Grp Cap (vph)	128	1568	701	181	1665		386	500		47	289	360
v/s Ratio Prot	c0.09	0.34		0.08	c0.57		c0.16	0.21		c0.04	c0.17	0.01
v/s Ratio Perm			0.31									0.02
v/c Ratio	1.27	0.77	0.69	0.81	1.21		1.45	0.76		1.55	1.10	0.12
Uniform Delay, d1	69.5	35.3	33.5	65.9	39.5		66.5	49.8		73.0	63.4	45.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	170.4	2.3	2.7	23.4	100.6		218.0	5.8		330.0	81.4	0.1
Delay (s)	239.9	37.6	36.2	89.3	140.1		284.6	55.5		403.0	144.7	46.0
Level of Service	F	D	D	F	F		F	E		F	F	D
Approach Delay (s)		52.9			136.6			191.5			159.4	
Approach LOS		D			F			F			F	
Intersection Summary												
HCM 2000 Control Delay			116.9			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.23									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)				27.9		
Intersection Capacity Utilization			109.9%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1838	22	37	2366	2	34	0	41	15	0	20
Future Volume (vph)	22	1838	22	37	2366	2	34	0	41	15	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	130		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998						0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3539	0	1770	1583	0	1770	1583	0
Flt Permitted	0.044			0.062			0.743			0.728		
Satd. Flow (perm)	82	3532	0	115	3539	0	1384	1583	0	1356	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2						151			143	
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		724			1561			285			144	
Travel Time (s)		16.5			35.5			13.0			6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	1998	24	40	2572	2	37	0	45	16	0	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	2022	0	40	2574	0	37	45	0	16	22	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Detector Phase	1	6		5	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	8.1	21.2		8.0	21.2		11.5	11.5		11.5	11.5	
Total Split (s)	15.0	80.0		15.0	80.0		25.0	25.0		25.0	25.0	
Total Split (%)	12.5%	66.7%		12.5%	66.7%		20.8%	20.8%		20.8%	20.8%	
Maximum Green (s)	10.9	73.8		11.0	73.8		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.1	4.3		3.0	4.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.9		1.0	1.9		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Act Effct Green (s)	100.3	94.7		101.5	96.7		9.0	9.0		9.0	9.0	
Actuated g/C Ratio	0.84	0.79		0.85	0.81		0.08	0.08		0.08	0.08	
v/c Ratio	0.16	0.73		0.22	0.90		0.36	0.17		0.16	0.09	
Control Delay	3.4	5.5		4.7	18.1		61.3	1.5		54.1	0.7	
Queue Delay	0.0	0.1		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	3.4	5.6		4.7	18.1		61.3	1.5		54.1	0.7	
LOS	A	A		A	B		E	A		D	A	
Approach Delay		5.6			17.9			28.5			23.2	
Approach LOS		A			B			C			C	

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	2	165		4	847		28	0		12	0	
Queue Length 95th (ft)	m4	194		10	#1245		62	0		34	0	
Internal Link Dist (ft)		644			1481			205			64	
Turn Bay Length (ft)	150			130								
Base Capacity (vph)	224	2787		251	2853		224	383		220	377	
Starvation Cap Reductn	0	95		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	0.11	0.75		0.16	0.90		0.17	0.12		0.07	0.06	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 54 (45%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 12.8

Intersection LOS: B

Intersection Capacity Utilization 83.8%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4
15 s	80 s	25 s
 Ø5	 Ø6 (R)	
15 s	80 s	

HCM Signalized Intersection Capacity Analysis

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1838	22	37	2366	2	34	0	41	15	0	20
Future Volume (vph)	22	1838	22	37	2366	2	34	0	41	15	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		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)	1770	3533		1770	3539		1770	1583		1770	1583	
Flt Permitted	0.04	1.00		0.06	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	81	3533		116	3539		1384	1583		1356	1583	
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)	24	1998	24	40	2572	2	37	0	45	16	0	22
RTOR Reduction (vph)	0	0	0	0	0	0	0	42	0	0	21	0
Lane Group Flow (vph)	24	2022	0	40	2574	0	37	3	0	16	1	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Actuated Green, G (s)	95.2	91.6		97.7	92.8		7.8	7.8		7.8	7.8	
Effective Green, g (s)	95.2	91.6		97.7	92.8		7.8	7.8		7.8	7.8	
Actuated g/C Ratio	0.79	0.76		0.81	0.77		0.06	0.06		0.06	0.06	
Clearance Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	114	2696		161	2736		89	102		88	102	
v/s Ratio Prot	0.01	0.57		c0.01	c0.73			0.00			0.00	
v/s Ratio Perm	0.16			0.19			c0.03			0.01		
v/c Ratio	0.21	0.75		0.25	0.94		0.42	0.03		0.18	0.01	
Uniform Delay, d1	27.6	7.9		9.0	11.3		53.9	52.6		53.1	52.5	
Progression Factor	0.97	0.49		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.3		0.8	8.0		3.1	0.1		1.0	0.1	
Delay (s)	27.3	5.1		9.8	19.3		57.0	52.7		54.1	52.6	
Level of Service	C	A		A	B		E	D		D	D	
Approach Delay (s)		5.4			19.2			54.6			53.2	
Approach LOS		A			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			14.2			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			15.8			
Intersection Capacity Utilization			83.8%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔	↔		↔	
Traffic Volume (vph)	3	1888	35	6	2312	0	71	0	18	14	3	14
Future Volume (vph)	3	1888	35	6	2312	0	71	0	18	14	3	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997							0.850		0.939	
Flt Protected								0.950			0.978	
Satd. Flow (prot)	0	3529	0	0	3539	0	0	1770	1583	0	1711	0
Flt Permitted		0.950			0.944			0.736			0.830	
Satd. Flow (perm)	0	3352	0	0	3341	0	0	1371	1583	0	1452	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2							60		15	
Link Speed (mph)		30			30			15			30	
Link Distance (ft)		691			724			207			170	
Travel Time (s)		15.7			16.5			9.4			3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	2052	38	7	2513	0	77	0	20	15	3	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2093	0	0	2520	0	0	77	20	0	33	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	20.6	20.6		20.6	20.6		12.5	12.5	12.5	12.5	12.5	
Total Split (s)	66.0	66.0		66.0	66.0		30.0	30.0	30.0	30.0	30.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		25.0%	25.0%	25.0%	25.0%	25.0%	
Maximum Green (s)	60.4	60.4		60.4	60.4		24.5	24.5	24.5	24.5	24.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.4	1.4		1.4	1.4		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.6			5.6			5.5	5.5		5.5	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		100.2			100.2			12.3	12.3		12.3	
Actuated g/C Ratio		0.84			0.84			0.10	0.10		0.10	
v/c Ratio		0.75			0.90			0.55	0.09		0.20	
Control Delay		8.5			8.4			64.7	0.8		33.2	
Queue Delay		1.0			0.0			0.0	0.0		0.0	
Total Delay		9.5			8.4			64.7	0.8		33.2	
LOS		A			A			E	A		C	
Approach Delay		9.5			8.4			51.5			33.2	
Approach LOS		A			A			D			C	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	20%
Maximum Green (s)	20.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		355			144			58	0		13	
Queue Length 95th (ft)		574			#1180			104	0		43	
Internal Link Dist (ft)		611			644			127			90	
Turn Bay Length (ft)												
Base Capacity (vph)		2798			2789			279	370		308	
Starvation Cap Reductn		417			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.88			0.90			0.28	0.05		0.11	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 73 (61%), Referenced to phase 2:EBWB, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 10.0

Intersection LOS: A

Intersection Capacity Utilization 85.8%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

  Ø2 (R)	  Ø3	  Ø4
66 s	24 s	30 s

Lane Group	Ø3
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	

HCM Signalized Intersection Capacity Analysis

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1888	35	6	2312	0	71	0	18	14	3	14
Future Volume (vph)	3	1888	35	6	2312	0	71	0	18	14	3	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6			5.6			5.5	5.5		5.5	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.94	
Flt Protected		1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)		3529			3539			1770	1583		1710	
Flt Permitted		0.95			0.94			0.74	1.00		0.83	
Satd. Flow (perm)		3352			3343			1370	1583		1450	
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)	3	2052	38	7	2513	0	77	0	20	15	3	15
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	18	0	14	0
Lane Group Flow (vph)	0	2093	0	0	2520	0	0	77	2	0	19	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		98.0			98.0			10.9	10.9		10.9	
Effective Green, g (s)		98.0			98.0			10.9	10.9		10.9	
Actuated g/C Ratio		0.82			0.82			0.09	0.09		0.09	
Clearance Time (s)		5.6			5.6			5.5	5.5		5.5	
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		2737			2730			124	143		131	
v/s Ratio Prot												
v/s Ratio Perm		0.62			c0.75			c0.06	0.00		0.01	
v/c Ratio		0.76			0.92			0.62	0.01		0.15	
Uniform Delay, d1		5.4			8.2			52.6	49.7		50.3	
Progression Factor		1.00			0.48			1.00	1.00		1.00	
Incremental Delay, d2		2.1			3.2			9.3	0.0		0.5	
Delay (s)		7.5			7.1			61.9	49.7		50.8	
Level of Service		A			A			E	D		D	
Approach Delay (s)		7.5			7.1			59.3			50.8	
Approach LOS		A			A			E			D	
Intersection Summary												
HCM 2000 Control Delay			8.6									
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			120.0									
Intersection Capacity Utilization			85.8%									
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	1149	115	257	1688	365	88	197	175	609	264	180
Future Volume (vph)	232	1149	115	257	1688	365	88	197	175	609	264	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	300		0	150		150	150		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.986			0.973				0.850		0.939	
Flt Protected	0.950			0.950				0.985		0.950		
Satd. Flow (prot)	1770	3490	0	1770	3444	0	0	1835	1583	3433	1749	0
Flt Permitted	0.950			0.950				0.985		0.950		
Satd. Flow (perm)	1770	3490	0	1770	3444	0	0	1835	1583	3433	1749	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			23				51		20	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		738			691			688			488	
Travel Time (s)		16.8			15.7			15.6			11.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	252	1249	125	279	1835	397	96	214	190	662	287	196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	252	1374	0	279	2232	0	0	310	190	662	483	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	21.0		11.0	21.0		11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	67.0		28.0	75.0		22.0	22.0	28.0	33.0	33.0	
Total Split (%)	13.3%	44.7%		18.7%	50.0%		14.7%	14.7%	18.7%	22.0%	22.0%	
Maximum Green (s)	16.0	61.0		24.0	69.0		18.0	18.0	24.0	29.0	29.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0		0.0	-1.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	1.5	3.0		1.5	3.0		3.0	3.0	1.5	2.5	2.5	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effct Green (s)	16.0	62.0		24.0	70.0			18.0	46.0	29.0	29.0	
Actuated g/C Ratio	0.11	0.41		0.16	0.47			0.12	0.31	0.19	0.19	
v/c Ratio	1.34	0.95		0.99	1.38			1.41	0.37	1.00	1.36	
Control Delay	232.8	56.6		111.8	207.0			254.4	31.6	94.3	223.6	
Queue Delay	0.0	0.0		0.0	0.3			0.0	0.0	0.0	0.0	
Total Delay	232.8	56.6		111.8	207.3			254.4	31.6	94.3	223.6	
LOS	F	E		F	F			F	C	F	F	
Approach Delay		83.9			196.7			169.7			148.8	
Approach LOS		F			F			F			F	

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	~320	674		276	~1520			~406	105	337	~607	
Queue Length 95th (ft)	#502	#833		#469	#1650			#602	178	#470	#835	
Internal Link Dist (ft)		658			611			608			408	
Turn Bay Length (ft)	300			300					150	150		
Base Capacity (vph)	188	1447		283	1619			220	520	663	354	
Starvation Cap Reductn	0	0		0	146			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	1.34	0.95		0.99	1.52			1.41	0.37	1.00	1.36	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 89 (59%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.41

Intersection Signal Delay: 153.2

Intersection LOS: F

Intersection Capacity Utilization 125.4%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4	 Ø8
28 s	67 s	33 s	22 s
 Ø5	 Ø6 (R)		
20 s	75 s		

HCM Signalized Intersection Capacity Analysis

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	1149	115	257	1688	365	88	197	175	609	264	180
Future Volume (vph)	232	1149	115	257	1688	365	88	197	175	609	264	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.97	1.00	
Frt	1.00	0.99		1.00	0.97			1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3491		1770	3445			1834	1583	3433	1749	
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3491		1770	3445			1834	1583	3433	1749	
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)	252	1249	125	279	1835	397	96	214	190	662	287	196
RTOR Reduction (vph)	0	5	0	0	12	0	0	0	37	0	16	0
Lane Group Flow (vph)	252	1369	0	279	2220	0	0	310	153	662	467	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Actuated Green, G (s)	16.0	61.0		24.0	69.0			18.0	42.0	29.0	29.0	
Effective Green, g (s)	16.0	62.0		24.0	70.0			18.0	42.0	29.0	29.0	
Actuated g/C Ratio	0.11	0.41		0.16	0.47			0.12	0.28	0.19	0.19	
Clearance Time (s)	4.0	6.0		4.0	6.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	3.0		1.5	3.0			3.0	1.5	2.5	2.5	
Lane Grp Cap (vph)	188	1442		283	1607			220	485	663	338	
v/s Ratio Prot	c0.14	0.39		0.16	c0.64			c0.17	0.05	0.19	c0.27	
v/s Ratio Perm									0.05			
v/c Ratio	1.34	0.95		0.99	1.38			1.41	0.32	1.00	1.38	
Uniform Delay, d1	67.0	42.5		62.8	40.0			66.0	42.7	60.5	60.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	184.5	14.3		49.1	175.5			208.9	0.1	34.3	189.1	
Delay (s)	251.5	56.8		111.9	215.5			274.9	42.8	94.8	249.6	
Level of Service	F	E		F	F			F	D	F	F	
Approach Delay (s)		87.0			204.0			186.7			160.1	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM 2000 Control Delay		160.9			HCM 2000 Level of Service				F			
HCM 2000 Volume to Capacity ratio		1.38										
Actuated Cycle Length (s)		150.0			Sum of lost time (s)				17.0			
Intersection Capacity Utilization		125.4%			ICU Level of Service				H			
Analysis Period (min)		15										

c Critical Lane Group

Lanes, Volumes, Timings
5: Routes 44/202 (West Main Street) & Woodford Ave

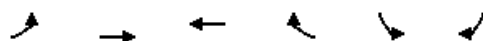
Avon Village Center
2020 Combined PM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	 		 	
Traffic Volume (vph)	42	1486	1934	22	10	74
Future Volume (vph)	42	1486	1934	22	10	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.881	
Flt Protected		0.999			0.994	
Satd. Flow (prot)	0	3536	3532	0	1631	0
Flt Permitted		0.999			0.994	
Satd. Flow (perm)	0	3536	3532	0	1631	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		455	738		205	
Travel Time (s)		10.3	14.4		4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	1615	2102	24	11	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1661	2126	0	91	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 83.1%	ICU Level of Service E					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

5: Routes 44/202 (West Main Street) & Woodford Ave

Avon Village Center
2020 Combined PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	
Traffic Volume (veh/h)	42	1486	1934	22	10	74
Future Volume (Veh/h)	42	1486	1934	22	10	74
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	1615	2102	24	11	80
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		455	738			
pX, platoon unblocked	0.54				0.64	0.54
vC, conflicting volume	2126				3014	1063
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1389				1611	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	83				78	86
cM capacity (veh/h)	265				51	588
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	584	1077	1401	725	91	
Volume Left	46	0	0	0	11	
Volume Right	0	0	0	24	80	
cSH	265	1700	1700	1700	257	
Volume to Capacity	0.17	0.63	0.82	0.43	0.35	
Queue Length 95th (ft)	15	0	0	0	38	
Control Delay (s)	6.7	0.0	0.0	0.0	26.4	
Lane LOS	A				D	
Approach Delay (s)	2.4		0.0		26.4	
Approach LOS					D	
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			83.1%		ICU Level of Service	E
Analysis Period (min)			15			

Lanes, Volumes, Timings

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↑		↑	↑	↑
Traffic Volume (vph)	155	1188	7	12	1743	253	44	7	62	281	3	185
Future Volume (vph)	155	1188	7	12	1743	253	44	7	62	281	3	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		80
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.999			0.981			0.926				0.850
Flt Protected		0.994						0.981		0.950	0.953	
Satd. Flow (prot)	0	3427	0	0	3502	0	0	1724	0	1681	1686	1583
Flt Permitted		0.488			0.942			0.712		0.607	0.587	
Satd. Flow (perm)	0	1683	0	0	3299	0	0	1251	0	1074	1039	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			34			53				120
Link Speed (mph)		35			35			25			30	
Link Distance (ft)		1357			455			348			203	
Travel Time (s)		26.4			8.9			9.5			4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	168	1291	8	13	1895	275	48	8	67	305	3	201
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	1467	0	0	2183	0	0	123	0	152	156	201
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Detector Phase	1	1 2 3		2 3	2 3		4	4		4	4	4
Switch Phase												
Minimum Initial (s)	5.0						7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	8.0						11.0	11.0		11.0	11.0	11.0
Total Split (s)	9.0						22.0	22.0		22.0	22.0	22.0
Total Split (%)	9.0%						22.0%	22.0%		22.0%	22.0%	22.0%
Maximum Green (s)	6.0						18.0	18.0		18.0	18.0	18.0
Yellow Time (s)	3.0						3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	0.0						1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)								0.0		0.0	0.0	0.0
Total Lost Time (s)								4.0		4.0	4.0	4.0
Lead/Lag	Lead						Lag	Lag		Lag	Lag	Lag
Lead-Lag Optimize?	Yes						Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0						2.0	2.0		2.0	2.0	2.0
Recall Mode	None						None	None		None	None	None
Act Effct Green (s)		75.2			67.0			16.8		16.8	16.8	16.8
Actuated g/C Ratio		0.75			0.67			0.17		0.17	0.17	0.17
v/c Ratio		1.04			0.98			0.49		0.84	0.90	0.55
Control Delay		51.8			32.1			28.6		77.3	87.4	21.9
Queue Delay		0.0			0.0			0.0		0.0	0.0	0.0
Total Delay		51.8			32.1			28.6		77.3	87.4	21.9
LOS		D			C			C		E	F	C

Lanes, Volumes, Timings
6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center
2020 Combined PM

Lane Group	Ø2	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	6.0
Minimum Split (s)	18.0	12.0
Total Split (s)	56.0	13.0
Total Split (%)	56%	13%
Maximum Green (s)	53.0	7.0
Yellow Time (s)	2.0	4.0
All-Red Time (s)	1.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	3.0
Recall Mode	C-Max	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		

Lanes, Volumes, Timings

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		51.8			32.1			28.6			58.5	
Approach LOS		D			C			C			E	
Queue Length 50th (ft)		~271			625			39		98	102	45
Queue Length 95th (ft)		#269			#889			96		#211	#221	116
Internal Link Dist (ft)		1277			375			268			123	
Turn Bay Length (ft)												80
Base Capacity (vph)		1409			2221			268		193	187	383
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		1.04			0.98			0.46		0.79	0.83	0.52

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

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

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 41.9

Intersection LOS: D

Intersection Capacity Utilization 118.7%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

							
Ø1	Ø2 (R)		Ø3	Ø4			
9 s	56 s		13 s	22 s			

Lane Group	Ø2	Ø3
Approach Delay		
Approach LOS		
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		

HCM Signalized Intersection Capacity Analysis

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	1188	7	12	1743	253	44	7	62	281	3	185
Future Volume (vph)	155	1188	7	12	1743	253	44	7	62	281	3	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.0			2.0			4.0		4.0	4.0	4.0
Lane Util. Factor		0.95			0.95			1.00		0.95	0.95	1.00
Frt		1.00			0.98			0.93		1.00	1.00	0.85
Flt Protected		0.99			1.00			0.98		0.95	0.95	1.00
Satd. Flow (prot)		3429			3502			1724		1681	1687	1583
Flt Permitted		0.49			0.94			0.71		0.61	0.59	1.00
Satd. Flow (perm)		1683			3298			1252		1075	1039	1583
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)	168	1291	8	13	1895	275	48	8	67	305	3	201
RTOR Reduction (vph)	0	0	0	0	12	0	0	44	0	0	0	100
Lane Group Flow (vph)	0	1467	0	0	2171	0	0	79	0	152	156	101
Heavy Vehicles (%)	2%	1%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Turn Type	D,P+P	NA		Perm		NA		Perm		NA		Perm
Protected Phases	1	1 2 3		2 3		2 3		4		4		4
Permitted Phases	2 3			2 3		4				4		4
Actuated Green, G (s)		70.2		63.0		63.0		16.8		16.8	16.8	16.8
Effective Green, g (s)		72.2		64.0		64.0		16.8		16.8	16.8	16.8
Actuated g/C Ratio		0.72		0.64		0.64		0.17		0.17	0.17	0.17
Clearance Time (s)								4.0		4.0	4.0	4.0
Vehicle Extension (s)								2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1358		2110		2110		210		180	174	265
v/s Ratio Prot		c0.09										
v/s Ratio Perm		c0.69		c0.66		c0.66		0.06		0.14	c0.15	0.06
v/c Ratio		1.08		1.03		1.03		0.38		0.84	0.90	0.38
Uniform Delay, d1		13.9		18.0		18.0		36.9		40.3	40.7	37.0
Progression Factor		1.70		1.00		1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2		48.1		27.4		27.4		0.4		27.7	39.1	0.3
Delay (s)		71.6		45.4		45.4		37.4		68.0	79.8	37.3
Level of Service		E		D		D		D		E	E	D
Approach Delay (s)		71.6		45.4		45.4		37.4			59.5	
Approach LOS		E		D		D		D			E	
Intersection Summary												
HCM 2000 Control Delay		55.8		HCM 2000 Level of Service				E				
HCM 2000 Volume to Capacity ratio		1.04										
Actuated Cycle Length (s)		100.0		Sum of lost time (s)				14.0				
Intersection Capacity Utilization		118.7%		ICU Level of Service				H				
Analysis Period (min)		15										
c Critical Lane Group												

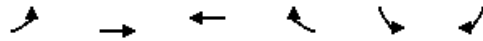
Lanes, Volumes, Timings
7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined PM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	238	1024	1772	226	221	337
Future Volume (vph)	238	1024	1772	226	221	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11
Storage Length (ft)	125			100	215	300
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Frt			0.983			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3479	0	3319	1531
Flt Permitted	0.067				0.950	
Satd. Flow (perm)	125	3539	3479	0	3319	1531
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			25			169
Link Speed (mph)		30	30		30	
Link Distance (ft)		2398	1357		443	
Travel Time (s)		54.5	30.8		10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	259	1113	1926	246	240	366
Shared Lane Traffic (%)						
Lane Group Flow (vph)	259	1113	2172	0	240	366
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2					4
Detector Phase	1	2	2		4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0		7.0	7.0
Minimum Split (s)	8.0	22.3	22.3		11.5	11.5
Total Split (s)	13.0	67.0	67.0		20.0	20.0
Total Split (%)	13.0%	67.0%	67.0%		20.0%	20.0%
Maximum Green (s)	10.0	59.7	59.7		15.5	15.5
Yellow Time (s)	3.0	4.2	4.2		3.0	3.0
All-Red Time (s)	0.0	3.1	3.1		1.5	1.5
Lost Time Adjust (s)	0.0	-1.2	-1.2		0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1		4.5	4.5
Lead/Lag	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	1.5	1.5		1.5	1.5
Recall Mode	None	C-Max	C-Max		None	None
Act Effct Green (s)	74.2	60.9	60.9		15.3	15.3
Actuated g/C Ratio	0.74	0.61	0.61		0.15	0.15
v/c Ratio	0.99	0.52	1.02		0.47	0.97
Control Delay	93.1	0.9	42.4		42.1	63.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	93.1	0.9	42.4		42.1	63.7
LOS	F	A	D		D	E
Approach Delay		18.3	42.4		55.1	

Lanes, Volumes, Timings
 7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
 2020 Combined PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach LOS		B	D		E	
Queue Length 50th (ft)	~129	3	~558		72	132
Queue Length 95th (ft)	m#268	5	m#806		111	#318
Internal Link Dist (ft)		2318	1277		363	
Turn Bay Length (ft)	125				215	300
Base Capacity (vph)	261	2155	2128		514	380
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.99	0.52	1.02		0.47	0.96

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBWB, Start of Yellow, Master Intersection
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 36.3
 Intersection Capacity Utilization 87.8%
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

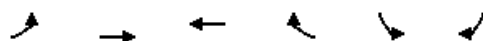
Splits and Phases: 7: Routes 44/202 (West Main Street) & Bickford Dr.



HCM Signalized Intersection Capacity Analysis

7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	238	1024	1772	226	221	337
Future Volume (vph)	238	1024	1772	226	221	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	11
Total Lost time (s)	3.0	6.1	6.1		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3479		3319	1531
Flt Permitted	0.07	1.00	1.00		0.95	1.00
Satd. Flow (perm)	125	3539	3479		3319	1531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	259	1113	1926	246	240	366
RTOR Reduction (vph)	0	0	10	0	0	143
Lane Group Flow (vph)	259	1113	2162	0	240	223
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2					4
Actuated Green, G (s)	69.9	59.7	59.7		15.3	15.3
Effective Green, g (s)	69.9	60.9	60.9		15.3	15.3
Actuated g/C Ratio	0.70	0.61	0.61		0.15	0.15
Clearance Time (s)	3.0	7.3	7.3		4.5	4.5
Vehicle Extension (s)	3.0	1.5	1.5		1.5	1.5
Lane Grp Cap (vph)	255	2155	2118		507	234
v/s Ratio Prot	c0.10	0.31	c0.62		0.07	
v/s Ratio Perm	0.61					c0.15
v/c Ratio	1.02	0.52	1.02		0.47	0.95
Uniform Delay, d1	34.0	11.2	19.6		38.7	42.0
Progression Factor	2.01	0.03	1.25		1.00	1.00
Incremental Delay, d2	51.0	0.6	17.8		0.3	45.1
Delay (s)	119.4	0.9	42.2		38.9	87.1
Level of Service	F	A	D		D	F
Approach Delay (s)		23.3	42.2		68.0	
Approach LOS		C	D		E	
Intersection Summary						
HCM 2000 Control Delay			39.7		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.01			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	13.6
Intersection Capacity Utilization			87.8%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1229	13	2	2045	29	19	1	6	22	0	11
Future Volume (vph)	11	1229	13	2	2045	29	19	1	6	22	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998				0.850		0.955	
Flt Protected								0.954			0.968	
Satd. Flow (prot)	0	3532	0	0	3532	0	0	1777	1583	0	1722	0
Flt Permitted		0.909			0.955			0.897			0.786	
Satd. Flow (perm)	0	3211	0	0	3373	0	0	1671	1583	0	1398	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				70		70	
Link Speed (mph)		30			30			15			25	
Link Distance (ft)		769			2398			132			221	
Travel Time (s)		17.5			54.5			6.0			6.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	1336	14	2	2223	32	21	1	7	24	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1362	0	0	2257	0	0	22	7	0	36	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		1	1 2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	21.4	21.4		11.0			20.3	20.3	20.3	20.3	20.3	
Total Split (s)	64.0	64.0		11.0			25.0	25.0	25.0	25.0	25.0	
Total Split (%)	64.0%	64.0%		11.0%			25.0%	25.0%	25.0%	25.0%	25.0%	
Maximum Green (s)	58.6	58.6		7.0			20.7	20.7	20.7	20.7	20.7	
Yellow Time (s)	4.1	4.1		3.0			3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.3	1.3		1.0			1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0						0.0	0.0		0.0	
Total Lost Time (s)		5.4						4.3	4.3		4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None			None	None	None	None	None	
Act Effct Green (s)		58.6			84.5			7.4	7.4		7.4	
Actuated g/C Ratio		0.59			0.84			0.07	0.07		0.07	
v/c Ratio		0.72			0.78			0.18	0.04		0.22	
Control Delay		17.7			4.1			46.1	0.3		5.5	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		17.7			4.1			46.1	0.3		5.5	
LOS		B			A			D	A		A	
Approach Delay		17.7			4.1			35.1			5.5	
Approach LOS		B			A			D			A	
Queue Length 50th (ft)		305			161			13	0		0	
Queue Length 95th (ft)		389			m176			37	0		10	
Internal Link Dist (ft)		689			2318			52			141	

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		1882			2888			345	383		344	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.72			0.78			0.06	0.02		0.10	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 9.4

Intersection LOS: A

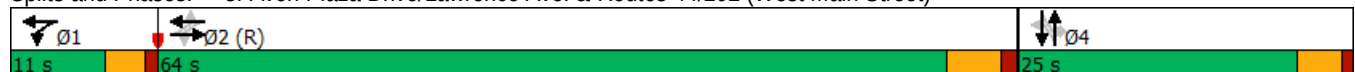
Intersection Capacity Utilization 74.3%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)



HCM Signalized Intersection Capacity Analysis

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1229	13	2	2045	29	19	1	6	22	0	11
Future Volume (vph)	11	1229	13	2	2045	29	19	1	6	22	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4			4.0			4.3	4.3		4.3	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.95	
Flt Protected		1.00			1.00			0.95	1.00		0.97	
Satd. Flow (prot)		3532			3532			1778	1583		1722	
Flt Permitted		0.91			0.95			0.90	1.00		0.79	
Satd. Flow (perm)		3211			3373			1670	1583		1399	
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)	12	1336	14	2	2223	32	21	1	7	24	0	12
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	7	0	34	0
Lane Group Flow (vph)	0	1361	0	0	2256	0	0	22	0	0	2	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		56.8			81.3			5.0	5.0		5.0	
Effective Green, g (s)		56.8			81.3			5.0	5.0		5.0	
Actuated g/C Ratio		0.57			0.81			0.05	0.05		0.05	
Clearance Time (s)		5.4						4.3	4.3		4.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		1823			2781			83	79		69	
v/s Ratio Prot					c0.20							
v/s Ratio Perm		0.42			c0.46			c0.01	0.00		0.00	
v/c Ratio		0.75			0.81			0.27	0.00		0.03	
Uniform Delay, d1		16.2			5.1			45.7	45.1		45.2	
Progression Factor		1.00			0.93			1.00	1.00		1.00	
Incremental Delay, d2		2.8			0.2			1.7	0.0		0.2	
Delay (s)		19.0			5.0			47.4	45.2		45.3	
Level of Service		B			A			D	D		D	
Approach Delay (s)		19.0			5.0			46.9			45.3	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			10.9		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			100.0		Sum of lost time (s)				13.7			
Intersection Capacity Utilization			74.3%		ICU Level of Service				D			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
 9: Bickford Dr. & Site Driveway #1/Site Driveway #2

Avon Village Center
 2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	0	56	107	0	78	48	325	91	122	395	48
Future Volume (vph)	49	0	56	107	0	78	48	325	91	122	395	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	125		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			50			50		
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
Frt		0.928			0.943				0.850		0.984	
Flt Protected		0.977			0.972		0.950			0.950		
Satd. Flow (prot)	0	1689	0	0	1707	0	1770	1863	1583	1770	1833	0
Flt Permitted		0.977			0.972		0.950			0.950		
Satd. Flow (perm)	0	1689	0	0	1707	0	1770	1863	1583	1770	1833	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			181			443			384	
Travel Time (s)		4.0			4.1			10.1			8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	0	61	116	0	85	52	353	99	133	429	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	114	0	0	201	0	52	353	99	133	481	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 51.8%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

9: Bickford Dr. & Site Driveway #1/Site Driveway #2

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	0	56	107	0	78	48	325	91	122	395	48
Future Volume (Veh/h)	49	0	56	107	0	78	48	325	91	122	395	48
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	0	61	116	0	85	52	353	99	133	429	52
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								443				
pX, platoon unblocked												
vC, conflicting volume	1263	1277	455	1213	1204	353	481			452		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1263	1277	455	1213	1204	353	481			452		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	53	100	90	7	100	88	95			88		
cM capacity (veh/h)	112	139	605	125	154	691	1082			1109		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	114	201	52	353	99	133	481					
Volume Left	53	116	52	0	0	133	0					
Volume Right	61	85	0	0	99	0	52					
cSH	199	191	1082	1700	1700	1109	1700					
Volume to Capacity	0.57	1.05	0.05	0.21	0.06	0.12	0.28					
Queue Length 95th (ft)	78	233	4	0	0	10	0					
Control Delay (s)	44.8	130.7	8.5	0.0	0.0	8.7	0.0					
Lane LOS	E	F	A			A						
Approach Delay (s)	44.8	130.7	0.9			1.9						
Approach LOS	E	F										
Intersection Summary												
Average Delay			23.0									
Intersection Capacity Utilization			51.8%	ICU Level of Service					A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
10: Bickford Dr. & Climax Road/Main St.

Avon Village Center
2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	14	190	22	17	0	241	197	19	0	310	65
Future Volume (vph)	44	14	190	22	17	0	241	197	19	0	310	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	100		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
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
Frt		0.896						0.994			0.977	
Flt Protected		0.991			0.972			0.974				
Satd. Flow (prot)	0	1654	0	0	1811	0	0	1803	0	0	1820	0
Flt Permitted		0.991			0.972			0.974				
Satd. Flow (perm)	0	1654	0	0	1811	0	0	1803	0	0	1820	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		271			628			384			208	
Travel Time (s)		6.2			14.3			8.7			4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	15	207	24	18	0	262	214	21	0	337	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	270	0	0	42	0	0	497	0	0	408	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
10: Bickford Dr. & Climax Road/Main St.

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	44	14	190	22	17	0	241	197	19	0	310	65
Future Volume (veh/h)	44	14	190	22	17	0	241	197	19	0	310	65
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
Hourly flow rate (vph)	48	15	207	24	18	0	262	214	21	0	337	71
Approach Volume (veh/h)	270			42			497			408		
Crossing Volume (veh/h)	361			524			63			304		
High Capacity (veh/h)	1043			916			1318			1091		
High v/c (veh/h)	0.26			0.05			0.38			0.37		
Low Capacity (veh/h)	852			739			1101			895		
Low v/c (veh/h)	0.32			0.06			0.45			0.46		
Intersection Summary												
Maximum v/c High			0.38									
Maximum v/c Low			0.46									
Intersection Capacity Utilization			70.1%		ICU Level of Service				C			

Intersection				
Intersection Delay, s/veh	9.7			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	270	42	497	408
Demand Flow Rate, veh/h	275	42	506	416
Vehicles Circulating, veh/h	368	534	64	309
Vehicles Exiting, veh/h	357	36	579	267
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.0	6.2	9.0	11.3
Approach LOS	A	A	A	B
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	275	42	506	416
Cap Entry Lane, veh/h	782	662	1060	830
Entry HV Adj Factor	0.981	0.992	0.982	0.981
Flow Entry, veh/h	270	42	497	408
Cap Entry, veh/h	767	657	1040	814
V/C Ratio	0.352	0.063	0.477	0.501
Control Delay, s/veh	9.0	6.2	9.0	11.3
LOS	A	A	A	B
95th %tile Queue, veh	2	0	3	3

Lanes, Volumes, Timings
11: Climax Road & Bickford Ave. Ext.

Avon Village Center
2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	0	25	19	0	7	37	268	18	5	204	12
Future Volume (vph)	13	0	25	19	0	7	37	268	18	5	204	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.911			0.963			0.992			0.993	
Flt Protected		0.983			0.965			0.994			0.999	
Satd. Flow (prot)	0	1668	0	0	1731	0	0	1837	0	0	1848	0
Flt Permitted		0.983			0.965			0.994			0.999	
Satd. Flow (perm)	0	1668	0	0	1731	0	0	1837	0	0	1848	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		343			134			271			1156	
Travel Time (s)		7.8			3.0			6.2			26.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	0	27	21	0	8	40	291	20	5	222	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	0	0	29	0	0	351	0	0	240	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 42.3%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

11: Climax Road & Bickford Ave. Ext.

Avon Village Center

2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	0	25	19	0	7	37	268	18	5	204	12
Future Volume (Veh/h)	13	0	25	19	0	7	37	268	18	5	204	12
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	0	27	21	0	8	40	291	20	5	222	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							TWLTL			TWLTL		
Median storage veh							2			2		
Upstream signal (ft)							1156					
pX, platoon unblocked												
vC, conflicting volume	628	630	228	646	626	301	235				311	
vC1, stage 1 conf vol	238	238		381	381							
vC2, stage 2 conf vol	389	391		266	245							
vCu, unblocked vol	628	630	228	646	626	301	235				311	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	97	100	97	96	100	99	97				100	
cM capacity (veh/h)	551	533	811	537	531	739	1332				1249	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	41	29	351	240								
Volume Left	14	21	40	5								
Volume Right	27	8	20	13								
cSH	698	581	1332	1249								
Volume to Capacity	0.06	0.05	0.03	0.00								
Queue Length 95th (ft)	5	4	2	0								
Control Delay (s)	10.5	11.5	1.1	0.2								
Lane LOS	B	B	A	A								
Approach Delay (s)	10.5	11.5	1.1	0.2								
Approach LOS	B	B										
Intersection Summary												
Average Delay	1.8											
Intersection Capacity Utilization	42.3%			ICU Level of Service					A			
Analysis Period (min)	15											

Lanes, Volumes, Timings
12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Combined PM

							Ø1	Ø2
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Lane Configurations	W	W	T	T	L	L		
Traffic Volume (vph)	100	188	467	85	136	466		
Future Volume (vph)	100	188	467	85	136	466		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	0.912		0.979					
Flt Protected	0.983					0.989		
Satd. Flow (prot)	1670	0	1824	0	0	1842		
Flt Permitted	0.983					0.609		
Satd. Flow (perm)	1670	0	1824	0	0	1134		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR)	81		14					
Link Speed (mph)	35		40			40		
Link Distance (ft)	1156		405			551		
Travel Time (s)	22.5		6.9			9.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	109	204	508	92	148	507		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	313	0	600	0	0	655		
Turn Type	Prot		NA		D.P+P	NA		
Protected Phases	4		1 2		8	1 2 8	1	2
Permitted Phases					1 2			
Detector Phase	4		1 2		8	1 2 8		
Switch Phase								
Minimum Initial (s)	6.0				2.0		2.0	15.0
Minimum Split (s)	20.0				19.0		19.0	20.0
Total Split (s)	22.0				20.0		20.0	39.0
Total Split (%)	21.8%				19.8%		20%	39%
Maximum Green (s)	18.0				17.0		17.0	35.0
Yellow Time (s)	3.0				2.0		2.0	3.0
All-Red Time (s)	1.0				1.0		1.0	1.0
Lost Time Adjust (s)	0.0							
Total Lost Time (s)	4.0							
Lead/Lag	Lag				Lead		Lag	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes
Vehicle Extension (s)	1.5				2.0		2.0	5.0
Recall Mode	None				None		Min	Min
Walk Time (s)	5.0				5.0		5.0	5.0
Flash Dont Walk (s)	11.0				11.0		11.0	11.0
Pedestrian Calls (#/hr)	0				0		0	0
Act Effct Green (s)	16.0		54.6			68.7		
Actuated g/C Ratio	0.17		0.58			0.72		
v/c Ratio	0.90		0.57			0.71		
Control Delay	58.2		15.9			9.6		
Queue Delay	0.0		0.0			0.0		
Total Delay	58.2		15.9			9.6		
LOS	E		B			A		
Approach Delay	58.2		15.9			9.6		
Approach LOS	E		B			A		

Lanes, Volumes, Timings
 12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
 2020 Combined PM

	↙	↖	↑	↗	↘	↓		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Queue Length 50th (ft)	147		230			134		
Queue Length 95th (ft)	#300		343			194		
Internal Link Dist (ft)	1076		325			471		
Turn Bay Length (ft)								
Base Capacity (vph)	386		1094			992		
Starvation Cap Reductn	0		0			0		
Spillback Cap Reductn	0		0			0		
Storage Cap Reductn	0		0			0		
Reduced v/c Ratio	0.81		0.55			0.66		

Intersection Summary

Area Type: Other
 Cycle Length: 101
 Actuated Cycle Length: 94.9
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 21.7 Intersection LOS: C
 Intersection Capacity Utilization 88.9% ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

↙ Ø8	↖ Ø1	↑ Ø2	↘ Ø4
20 s	20 s	39 s	22 s

HCM Signalized Intersection Capacity Analysis

12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Combined PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	100	188	467	85	136	466
Future Volume (vph)	100	188	467	85	136	466
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		3.0			3.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.91		0.98			1.00
Flt Protected	0.98		1.00			0.99
Satd. Flow (prot)	1670		1824			1842
Flt Permitted	0.98		1.00			0.61
Satd. Flow (perm)	1670		1824			1135
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	204	508	92	148	507
RTOR Reduction (vph)	67	0	6	0	0	0
Lane Group Flow (vph)	246	0	594	0	0	655
Turn Type	Prot		NA		D.P+P	NA
Protected Phases	4		1 2		8	1 2 8
Permitted Phases					1 2	
Actuated Green, G (s)	16.0		53.5			67.7
Effective Green, g (s)	16.0		53.5			67.7
Actuated g/C Ratio	0.17		0.56			0.71
Clearance Time (s)	4.0					
Vehicle Extension (s)	1.5					
Lane Grp Cap (vph)	282		1030			917
v/s Ratio Prot	c0.15		0.33			c0.11
v/s Ratio Perm						c0.40
v/c Ratio	0.87		0.58			0.71
Uniform Delay, d1	38.3		13.3			7.9
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	23.5		0.5			2.2
Delay (s)	61.9		13.8			10.1
Level of Service	E		B			B
Approach Delay (s)	61.9		13.8			10.1
Approach LOS	E		B			B
Intersection Summary						
HCM 2000 Control Delay			21.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.77			
Actuated Cycle Length (s)			94.7		Sum of lost time (s)	14.0
Intersection Capacity Utilization			88.9%		ICU Level of Service	E
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings
13: Site Driveway #3/Residential Drive & Bickford Dr.

Avon Village Center
2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	212	20	3	315	3	26	0	4	2	0	2
Future Volume (vph)	3	212	20	3	315	3	26	0	4	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.999			0.983			0.932	
Flt Protected		0.999						0.958			0.976	
Satd. Flow (prot)	0	1839	0	0	1861	0	0	1754	0	0	1694	0
Flt Permitted		0.999						0.958			0.976	
Satd. Flow (perm)	0	1839	0	0	1861	0	0	1754	0	0	1694	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			328			185			396	
Travel Time (s)		4.4			7.5			4.2			9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	230	22	3	342	3	28	0	4	2	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	255	0	0	348	0	0	32	0	0	4	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 28.5%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

13: Site Driveway #3/Residential Drive & Bickford Dr.

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	212	20	3	315	3	26	0	4	2	0	2
Future Volume (Veh/h)	3	212	20	3	315	3	26	0	4	2	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	230	22	3	342	3	28	0	4	2	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	345			252			598	598	241	600	608	344
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	345			252			598	598	241	600	608	344
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			93	100	99	100	100	100
cM capacity (veh/h)	1214			1313			411	414	798	409	409	699
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	255	348	32	4								
Volume Left	3	3	28	2								
Volume Right	22	3	4	2								
cSH	1214	1313	438	516								
Volume to Capacity	0.00	0.00	0.07	0.01								
Queue Length 95th (ft)	0	0	6	1								
Control Delay (s)	0.1	0.1	13.9	12.0								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	0.1	13.9	12.0								
Approach LOS			B	B								
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			28.5%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
14: N. Main St./Retail Drive #2 & Bickford Dr.

Avon Village Center
2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	166	0	19	296	16	0	13	22	18	14	56
Future Volume (vph)	53	166	0	19	296	16	0	13	22	18	14	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			50			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
Frt					0.992			0.915			0.914	
Flt Protected		0.988		0.950							0.990	
Satd. Flow (prot)	0	1840	0	1770	1848	0	0	1704	0	0	1686	0
Flt Permitted		0.988		0.950							0.990	
Satd. Flow (perm)	0	1840	0	1770	1848	0	0	1704	0	0	1686	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		328			250			360			304	
Travel Time (s)		7.5			5.7			8.2			6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	180	0	21	322	17	0	14	24	20	15	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	238	0	21	339	0	0	38	0	0	96	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 50.1%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

14: N. Main St./Retail Drive #2 & Bickford Dr.

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	166	0	19	296	16	0	13	22	18	14	56
Future Volume (Veh/h)	53	166	0	19	296	16	0	13	22	18	14	56
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	180	0	21	322	17	0	14	24	20	15	61
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	339			180			728	677	180	700	668	330
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	339			180			728	677	180	700	668	330
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			98			100	96	97	94	96	91
cM capacity (veh/h)	1220			1396			286	351	863	318	355	711
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	238	21	339	38	96							
Volume Left	58	21	0	0	20							
Volume Right	0	0	17	24	61							
cSH	1220	1396	1700	562	503							
Volume to Capacity	0.05	0.02	0.20	0.07	0.19							
Queue Length 95th (ft)	4	1	0	5	17							
Control Delay (s)	2.3	7.6	0.0	11.9	13.8							
Lane LOS	A	A		B	B							
Approach Delay (s)	2.3	0.4		11.9	13.8							
Approach LOS				B	B							
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			50.1%		ICU Level of Service			A				
Analysis Period (min)			15									

Lanes, Volumes, Timings
15: N. Main St. & Site Driveway #4

Avon Village Center
2020 Combined PM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	68	20	13	56	19	14
Future Volume (vph)	68	20	13	56	19	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.969		0.890			
Flt Protected	0.963					0.972
Satd. Flow (prot)	1738	0	1658	0	0	1811
Flt Permitted	0.963					0.972
Satd. Flow (perm)	1738	0	1658	0	0	1811
Link Speed (mph)	30		30			30
Link Distance (ft)	248		233			360
Travel Time (s)	5.6		5.3			8.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	22	14	61	21	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	0	75	0	0	36
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 20.1%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

15: N. Main St. & Site Driveway #4

Avon Village Center
2020 Combined PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	68	20	13	56	19	14
Future Volume (Veh/h)	68	20	13	56	19	14
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	22	14	61	21	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	102	44			75	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	102	44			75	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	98			99	
cM capacity (veh/h)	885	1025			1524	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	96	75	36			
Volume Left	74	0	21			
Volume Right	22	61	0			
cSH	913	1700	1524			
Volume to Capacity	0.11	0.04	0.01			
Queue Length 95th (ft)	9	0	1			
Control Delay (s)	9.4	0.0	4.4			
Lane LOS	A		A			
Approach Delay (s)	9.4	0.0	4.4			
Approach LOS	A					
Intersection Summary						
Average Delay		5.1				
Intersection Capacity Utilization		20.1%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
16: N. Main St. & Main St.

Avon Village Center
2020 Combined PM

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	33	0	0	0	0	0	0	36	0	0	42	40	
Future Volume (vph)	33	0	0	0	0	0	0	36	0	0	42	40	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt												0.935	
Flt Protected	0.950												
Satd. Flow (prot)	0	1770	0	0	1863	0	0	1863	0	0	1742	0	
Flt Permitted	0.950												
Satd. Flow (perm)	0	1770	0	0	1863	0	0	1863	0	0	1742	0	
Link Speed (mph)	30			30			30			30			
Link Distance (ft)	628				692				636				233
Travel Time (s)	14.3				15.7				14.5				5.3
Confl. Peds. (#/hr)	3												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	36	0	0	0	0	0	0	39	0	0	46	43	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	36	0	0	0	0	0	39	0	0	89	0	
Sign Control	Free			Free			Stop			Stop			
Intersection Summary													
Area Type:	Other												
Control Type: Unsignalized													
Intersection Capacity Utilization 14.7% ICU Level of Service A													
Analysis Period (min) 15													

HCM Unsignalized Intersection Capacity Analysis

16: N. Main St. & Main St.

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	0	0	0	0	0	0	36	0	0	42	40
Future Volume (Veh/h)	33	0	0	0	0	0	0	36	0	0	42	40
Sign Control	Free				Free				Stop			
Grade	0%				0%				0%			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	0	0	0	0	0	0	39	0	0	46	43
Pedestrians					3							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)												
Median type	None						None					
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0			0			138	72	3	94	72	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			138	72	3	94	72	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	95	100	100	94	96
cM capacity (veh/h)	1623			1623			752	800	1078	839	800	1085
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	36	0	39	89								
Volume Left	36	0	0	0								
Volume Right	0	0	0	43								
cSH	1623	1700	800	916								
Volume to Capacity	0.02	0.00	0.05	0.10								
Queue Length 95th (ft)	2	0	4	8								
Control Delay (s)	7.3	0.0	9.7	9.4								
Lane LOS	A			A	A							
Approach Delay (s)	7.3	0.0	9.7	9.4								
Approach LOS			A	A								
Intersection Summary												
Average Delay			9.0									
Intersection Capacity Utilization			14.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
17: Ensign Drive & N. Main St.

Avon Village Center
2020 Combined PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	42	36	371	426	0
Future Volume (vph)	0	42	36	371	426	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1770	1863	1863	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1770	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	636			203	406	
Travel Time (s)	14.5			4.6	9.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	46	39	403	463	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	39	403	463	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	39.1%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

17: Ensign Drive & N. Main St.

Avon Village Center

2020 Combined PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	42	36	371	426	0
Future Volume (Veh/h)	0	42	36	371	426	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	46	39	403	463	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)				203		
pX, platoon unblocked						
vC, conflicting volume	944	463	463			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	944	463	463			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	96			
cM capacity (veh/h)	281	599	1098			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	46	39	403	463		
Volume Left	0	39	0	0		
Volume Right	46	0	0	0		
cSH	599	1098	1700	1700		
Volume to Capacity	0.08	0.04	0.24	0.27		
Queue Length 95th (ft)	6	3	0	0		
Control Delay (s)	11.5	8.4	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	11.5	0.7		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			39.1%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
18: Ensign Drive & Main St./Site Driveway #7

Avon Village Center
2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	89	0	25	0	288	83	22	337	0
Future Volume (vph)	0	0	0	89	0	25	0	288	83	22	337	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.971			0.970				
Flt Protected					0.962						0.997	
Satd. Flow (prot)	0	1863	0	0	1740	0	0	1807	0	0	1857	0
Flt Permitted					0.962						0.997	
Satd. Flow (perm)	0	1863	0	0	1740	0	0	1807	0	0	1857	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		692			210			406			373	
Travel Time (s)		15.7			4.8			9.2			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	97	0	27	0	313	90	24	366	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	124	0	0	403	0	0	390	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 48.9%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis 18: Ensign Drive & Main St./Site Driveway #7

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	89	0	25	0	288	83	22	337	0
Future Volume (Veh/h)	0	0	0	89	0	25	0	288	83	22	337	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	97	0	27	0	313	90	24	366	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								609				
pX, platoon unblocked												
vC, conflicting volume	799	817	366	772	772	358	366			403		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	799	817	366	772	772	358	366			403		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	69	100	96	100			98		
cM capacity (veh/h)	287	305	679	312	323	686	1193			1156		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	124	403	390								
Volume Left	0	97	0	24								
Volume Right	0	27	90	0								
cSH	1700	354	1193	1156								
Volume to Capacity	0.00	0.35	0.00	0.02								
Queue Length 95th (ft)	0	38	0	2								
Control Delay (s)	0.0	20.6	0.0	0.7								
Lane LOS	A	C		A								
Approach Delay (s)	0.0	20.6	0.0	0.7								
Approach LOS	A	C										
Intersection Summary												
Average Delay			3.1									
Intersection Capacity Utilization			48.9%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
19: Ensign Drive & Site Driveway #5

Avon Village Center
2020 Combined PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	94	78	227	265	17
Future Volume (vph)	21	94	78	227	265	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.992	
Flt Protected	0.991			0.987		
Satd. Flow (prot)	1643	0	0	1839	1848	0
Flt Permitted	0.991			0.987		
Satd. Flow (perm)	1643	0	0	1839	1848	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	280			373	494	
Travel Time (s)	6.4			8.5	11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	102	85	247	288	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	125	0	0	332	306	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 48.2%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

19: Ensign Drive & Site Driveway #5

Avon Village Center

2020 Combined PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	94	78	227	265	17
Future Volume (Veh/h)	21	94	78	227	265	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	102	85	247	288	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				982		
pX, platoon unblocked						
vC, conflicting volume	714	297	306			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	714	297	306			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	86	93			
cM capacity (veh/h)	371	742	1255			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	125	332	306			
Volume Left	23	85	0			
Volume Right	102	0	18			
cSH	627	1255	1700			
Volume to Capacity	0.20	0.07	0.18			
Queue Length 95th (ft)	18	5	0			
Control Delay (s)	12.2	2.5	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.2	2.5	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		3.1				
Intersection Capacity Utilization		48.2%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
20: Ensign Drive/Retail Drive #3 & Bickford Dr.

Avon Village Center
2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	183	8	184	292	81	6	84	156	88	91	14
Future Volume (vph)	13	183	8	184	292	81	6	84	156	88	91	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.980			0.914			0.990	
Flt Protected		0.997			0.984			0.999			0.978	
Satd. Flow (prot)	0	1848	0	0	1796	0	0	1701	0	0	1804	0
Flt Permitted		0.997			0.984			0.999			0.978	
Satd. Flow (perm)	0	1848	0	0	1796	0	0	1701	0	0	1804	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			734			494			296	
Travel Time (s)		8.1			16.7			11.2			6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	199	9	200	317	88	7	91	170	96	99	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	222	0	0	605	0	0	268	0	0	210	0
Sign Control		Yield			Yield			Yield			Yield	
Intersection Summary												
Area Type:	Other											
Control Type:	Roundabout											
Intersection Capacity Utilization 79.5%	ICU Level of Service D											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
20: Ensign Drive/Retail Drive #3 & Bickford Dr.

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	13	183	8	184	292	81	6	84	156	88	91	14
Future Volume (veh/h)	13	183	8	184	292	81	6	84	156	88	91	14
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
Hourly flow rate (vph)	14	199	9	200	317	88	7	91	170	96	99	15
Approach Volume (veh/h)	222			605			268			210		
Crossing Volume (veh/h)	395			112			309			524		
High Capacity (veh/h)	1015			1269			1087			916		
High v/c (veh/h)	0.22			0.48			0.25			0.23		
Low Capacity (veh/h)	827			1056			891			739		
Low v/c (veh/h)	0.27			0.57			0.30			0.28		
Intersection Summary												
Maximum v/c High	0.48											
Maximum v/c Low	0.57											
Intersection Capacity Utilization	79.5%			ICU Level of Service					D			

Intersection				
Intersection Delay, s/veh	10.4			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	222	605	268	210
Demand Flow Rate, veh/h	226	617	273	214
Vehicles Circulating, veh/h	403	114	315	534
Vehicles Exiting, veh/h	345	474	314	197
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.4	12.3	8.3	9.8
Approach LOS	A	B	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	226	617	273	214
Cap Entry Lane, veh/h	755	1008	825	662
Entry HV Adj Factor	0.982	0.980	0.982	0.981
Flow Entry, veh/h	222	605	268	210
Cap Entry, veh/h	742	988	810	650
V/C Ratio	0.299	0.612	0.331	0.323
Control Delay, s/veh	8.4	12.3	8.3	9.8
LOS	A	B	A	A
95th %tile Queue, veh	1	4	1	1

Lanes, Volumes, Timings
21: Bickford Dr. & Fisher Drive

Avon Village Center
2020 Combined PM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	68	358	490	44	43	64
Future Volume (vph)	68	358	490	44	43	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			100	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850	0.919	
Flt Protected	0.950	0.999			0.980	
Satd. Flow (prot)	1681	1768	1863	1583	1678	0
Flt Permitted	0.950	0.999			0.980	
Satd. Flow (perm)	1681	1768	1863	1583	1678	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		734	305		171	
Travel Time (s)		16.7	6.9		3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	389	533	48	47	70
Shared Lane Traffic (%)	10%					
Lane Group Flow (vph)	67	396	533	48	117	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 51.4%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

21: Bickford Dr. & Fisher Drive

Avon Village Center

2020 Combined PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	68	358	490	44	43	64
Future Volume (Veh/h)	68	358	490	44	43	64
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	389	533	48	47	70
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			637			
pX, platoon unblocked						
vC, conflicting volume	581				1070	533
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	581				1070	533
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				79	87
cM capacity (veh/h)	993				227	547
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	49	414	533	48	117	
Volume Left	49	25	0	0	47	
Volume Right	0	0	0	48	70	
cSH	993	993	1700	1700	349	
Volume to Capacity	0.07	0.07	0.31	0.03	0.34	
Queue Length 95th (ft)	6	6	0	0	36	
Control Delay (s)	8.9	1.3	0.0	0.0	20.4	
Lane LOS	A	A			C	
Approach Delay (s)	2.1		0.0		20.4	
Approach LOS					C	
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			51.4%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
22: Bickford Dr. & Office Drive

Avon Village Center
2020 Combined PM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	427	534	2	8	3
Future Volume (vph)	1	427	534	2	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.966	
Flt Protected					0.964	
Satd. Flow (prot)	0	1863	1863	0	1735	0
Flt Permitted					0.964	
Satd. Flow (perm)	0	1863	1863	0	1735	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		305	332		317	
Travel Time (s)		6.9	7.5		7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	464	580	2	9	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	465	582	0	12	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 38.2%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

22: Bickford Dr. & Office Drive

Avon Village Center
2020 Combined PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	427	534	2	8	3
Future Volume (Veh/h)	1	427	534	2	8	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	464	580	2	9	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			332			
pX, platoon unblocked	0.98				0.98	0.98
vC, conflicting volume	582				1047	581
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	565				1039	564
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	99
cM capacity (veh/h)	988				251	516
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	465	582	12			
Volume Left	1	0	9			
Volume Right	0	2	3			
cSH	988	1700	288			
Volume to Capacity	0.00	0.34	0.04			
Queue Length 95th (ft)	0	0	3			
Control Delay (s)	0.0	0.0	18.1			
Lane LOS	A		C			
Approach Delay (s)	0.0	0.0	18.1			
Approach LOS			C			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization		38.2%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center

2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	22	106	96	60	25	104	690	19	31	881	373
Future Volume (vph)	280	22	106	96	60	25	104	690	19	31	881	373
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	100		0	100		100
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			25			50			50		
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
Frt		0.876			0.956			0.996			0.955	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1632	0	1770	1781	0	1770	1855	0	1770	1779	0
Flt Permitted	0.664			0.559			0.049			0.263		
Satd. Flow (perm)	1237	1632	0	1041	1781	0	91	1855	0	490	1779	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		115			16			2			37	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		332			231			526			680	
Travel Time (s)		7.5			5.3			12.0			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	24	115	104	65	27	113	750	21	34	958	405
Shared Lane Traffic (%)												
Lane Group Flow (vph)	304	139	0	104	92	0	113	771	0	34	1363	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		3.0	25.0		3.0	25.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		7.0	29.0		7.0	29.0	
Total Split (s)	29.0	29.0		29.0	29.0		8.0	83.0		8.0	83.0	
Total Split (%)	24.2%	24.2%		24.2%	24.2%		6.7%	69.2%		6.7%	69.2%	
Maximum Green (s)	25.0	25.0		25.0	25.0		4.0	79.0		4.0	79.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	
Recall Mode	Min	Min		Min	Min		None	Min		None	Min	
Act Effct Green (s)	25.0	25.0		25.0	25.0		84.6	82.2		83.0	79.0	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.70	0.68		0.69	0.66	
v/c Ratio	1.18	0.32		0.48	0.24		0.95	0.61		0.09	1.15	
Control Delay	156.7	12.8		50.4	34.5		92.7	13.3		5.2	100.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	156.7	12.8		50.4	34.5		92.7	13.3		5.2	100.4	
LOS	F	B		D	C		F	B		A	F	
Approach Delay		111.6			42.9			23.5			98.1	
Approach LOS		F			D			C			F	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	~282	15		71	49		39	320		7	~1237	
Queue Length 95th (ft)	#461	70		131	97		#113	442		15	#1504	
Internal Link Dist (ft)		252			151			446			600	
Turn Bay Length (ft)	200						100			100		
Base Capacity (vph)	257	431		216	383		119	1271		381	1183	
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	1.18	0.32		0.48	0.24		0.95	0.61		0.09	1.15	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 73.8

Intersection LOS: E

Intersection Capacity Utilization 129.8%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

 Ø1	 Ø2	 Ø4
8 s	83 s	29 s
 Ø5	 Ø6	
8 s	83 s	

HCM Signalized Intersection Capacity Analysis

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	22	106	96	60	25	104	690	19	31	881	373
Future Volume (vph)	280	22	106	96	60	25	104	690	19	31	881	373
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.96		1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1632		1770	1781		1770	1855		1770	1780	
Flt Permitted	0.66	1.00		0.56	1.00		0.05	1.00		0.26	1.00	
Satd. Flow (perm)	1237	1632		1041	1781		91	1855		489	1780	
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)	304	24	115	104	65	27	113	750	21	34	958	405
RTOR Reduction (vph)	0	91	0	0	13	0	0	1	0	0	12	0
Lane Group Flow (vph)	304	48	0	104	79	0	113	770	0	34	1351	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Actuated Green, G (s)	25.0	25.0		25.0	25.0		86.2	82.2		83.0	80.6	
Effective Green, g (s)	25.0	25.0		25.0	25.0		86.2	82.2		83.0	80.6	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.71	0.68		0.68	0.66	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	
Lane Grp Cap (vph)	254	335		214	366		119	1253		359	1179	
v/s Ratio Prot		0.03			0.04		c0.03	0.42		0.00	c0.76	
v/s Ratio Perm	c0.25			0.10			0.64			0.06		
v/c Ratio	1.20	0.14		0.49	0.22		0.95	0.61		0.09	1.15	
Uniform Delay, d1	48.3	39.5		42.6	40.2		37.3	10.9		8.7	20.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	120.3	0.4		3.6	0.6		65.4	1.3		0.0	75.8	
Delay (s)	168.6	39.9		46.2	40.8		102.8	12.2		8.8	96.3	
Level of Service	F	D		D	D		F	B		A	F	
Approach Delay (s)		128.2			43.7			23.8			94.2	
Approach LOS		F			D			C			F	
Intersection Summary												
HCM 2000 Control Delay			74.7			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.15									
Actuated Cycle Length (s)			121.6			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			129.8%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
 24: Routes 10/202 (Simsbury Road) & Site Driveway #8

Avon Village Center
 2020 Combined PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	16	16	802	1080	7
Future Volume (vph)	11	16	16	802	1080	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.921				0.999	
Flt Protected	0.980			0.999		
Satd. Flow (prot)	1681	0	0	1861	1861	0
Flt Permitted	0.980			0.999		
Satd. Flow (perm)	1681	0	0	1861	1861	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	357			1053	526	
Travel Time (s)	8.1			23.9	12.0	
Confl. Peds. (#/hr)			3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	17	17	872	1174	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	889	1182	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 67.3%	ICU Level of Service C					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 24: Routes 10/202 (Simsbury Road) & Site Driveway #8

Avon Village Center
2020 Combined PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	16	16	802	1080	7
Future Volume (Veh/h)	11	16	16	802	1080	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	17	17	872	1174	8
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					526	
pX, platoon unblocked	0.33	0.33	0.33			
vC, conflicting volume	2087	1181	1185			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3286	529	542			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	91	95			
cM capacity (veh/h)	3	180	337			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	29	889	1182			
Volume Left	12	17	0			
Volume Right	17	0	8			
cSH	7	337	1700			
Volume to Capacity	4.04	0.05	0.70			
Queue Length 95th (ft)	Err	4	0			
Control Delay (s)	Err	2.0	0.0			
Lane LOS	F	A				
Approach Delay (s)	Err	2.0	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay		138.9				
Intersection Capacity Utilization		67.3%		ICU Level of Service		C
Analysis Period (min)		15				

Lanes, Volumes, Timings
25: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Combined PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	2	11	8	2	3	23	729	6	2	1034	60
Future Volume (vph)	50	2	11	8	2	3	23	729	6	2	1034	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976			0.971			0.999			0.993	
Flt Protected		0.962			0.969			0.998				
Satd. Flow (prot)	0	1749	0	0	1753	0	0	1857	0	0	1850	0
Flt Permitted		0.962			0.969			0.998				
Satd. Flow (perm)	0	1749	0	0	1753	0	0	1857	0	0	1850	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		582			275			237			1053	
Travel Time (s)		13.2			6.3			5.4			23.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	2	12	9	2	3	25	792	7	2	1124	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	14	0	0	824	0	0	1191	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 70.2%	ICU Level of Service C											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

25: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Combined PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	2	11	8	2	3	23	729	6	2	1034	60
Future Volume (Veh/h)	50	2	11	8	2	3	23	729	6	2	1034	60
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	2	12	9	2	3	25	792	7	2	1124	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								725				
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	2010	2010	1156	2019	2038	796	1189			799		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2071	2070	1156	2081	2103	711	1189			715		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	96	95	71	95	99	96			100		
cM capacity (veh/h)	33	46	239	31	44	387	587			791		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	68	14	824	1191								
Volume Left	54	9	25	2								
Volume Right	12	3	7	65								
cSH	39	41	587	791								
Volume to Capacity	1.74	0.34	0.04	0.00								
Queue Length 95th (ft)	179	29	3	0								
Control Delay (s)	579.0	134.2	1.2	0.1								
Lane LOS	F	F	A	A								
Approach Delay (s)	579.0	134.2	1.2	0.1								
Approach LOS	F	F										
Intersection Summary												
Average Delay			20.2									
Intersection Capacity Utilization			70.2%	ICU Level of Service						C		
Analysis Period (min)			15									

Lanes, Volumes, Timings
26: Woodford Ave & Site Driveway #7

Avon Village Center
2020 Combined PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	2	3	61	82	3
Future Volume (vph)	2	2	3	61	82	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.996	
Flt Protected	0.976			0.998		
Satd. Flow (prot)	1694	0	0	1859	1855	0
Flt Permitted	0.976			0.998		
Satd. Flow (perm)	1694	0	0	1859	1855	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			205	88	
Travel Time (s)	4.0			4.7	2.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2	3	66	89	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	69	92	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 15.7%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

26: Woodford Ave & Site Driveway #7

Avon Village Center
2020 Combined PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	2	3	61	82	3
Future Volume (Veh/h)	2	2	3	61	82	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	2	3	66	89	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	162	90	92			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	162	90	92			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	827	967	1503			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	4	69	92			
Volume Left	2	3	0			
Volume Right	2	0	3			
cSH	891	1503	1700			
Volume to Capacity	0.00	0.00	0.05			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	9.1	0.3	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.1	0.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization		15.7%		ICU Level of Service		A
Analysis Period (min)		15				

Appendix D

Intersection Capacity Analysis Worksheets 2020 Combined Improved Traffic Volumes Weekday Afternoon Peak Hour

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	1113	668	135	1787	69	516	295	58	67	292	107
Future Volume (vph)	150	1113	668	135	1787	69	516	295	58	67	292	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		0	300		0	325		0	0		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.994			0.975				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3518	0	3433	1816	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3518	0	3433	1816	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			409		3			7				95
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			1189			682			591	
Travel Time (s)		20.0			27.0			15.5			13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	1210	726	147	1942	75	561	321	63	73	317	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	1210	726	147	2017	0	561	384	0	73	317	116
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Detector Phase	1	6	6	5	2		7 4	7 8		4	8	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	20.0					3.0	5.0	3.0
Minimum Split (s)	9.1	22.0	22.0	9.1	27.0					7.0	26.7	9.1
Total Split (s)	23.0	72.6	72.6	22.4	72.0					8.0	29.0	23.0
Total Split (%)	15.3%	48.4%	48.4%	14.9%	48.0%					5.3%	19.3%	15.3%
Maximum Green (s)	16.9	65.6	65.6	16.3	65.0					4.0	23.3	16.9
Yellow Time (s)	3.1	5.0	5.0	3.1	5.0					3.0	3.3	3.1
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0					1.0	2.4	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Lost Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes	Yes
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Recall Mode	None	Min	Min	None	Min					None	None	None
Walk Time (s)											20.0	
Flash Dont Walk (s)											1.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)	15.7	65.4	65.4	15.3	65.0		20.9	41.9		4.0	23.3	44.7
Actuated g/C Ratio	0.11	0.44	0.44	0.10	0.44		0.14	0.28		0.03	0.16	0.30
v/c Ratio	0.88	0.78	0.78	0.81	1.31		1.16	0.74		1.55	1.09	0.21
Control Delay	104.9	40.0	21.7	96.2	180.0		148.8	58.0		370.5	135.0	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	104.9	40.0	21.7	96.2	180.0		148.8	58.0		370.5	135.0	11.3

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. PM

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	10.1
Total Split (s)	18.0
Total Split (%)	12%
Maximum Green (s)	12.9
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	1.5
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	D	C	F	F		F	E		F	F	B
Approach Delay		38.7			174.3			111.9			140.6	
Approach LOS		D			F			F			F	
Queue Length 50th (ft)	159	526	287	142	~1344		~336	339		~100	~350	14
Queue Length 95th (ft)	#283	618	480	#253	#1478		#457	466		#212	#546	63
Internal Link Dist (ft)		799			1109			602			511	
Turn Bay Length (ft)	285			300			325					
Base Capacity (vph)	201	1560	926	193	1538		482	516		47	291	554
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.81	0.78	0.78	0.76	1.31		1.16	0.74		1.55	1.09	0.21

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 148.8

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.55

Intersection Signal Delay: 111.2

Intersection LOS: F

Intersection Capacity Utilization 109.9%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

 Ø1	 Ø2	 Ø4	 Ø7	 Ø8
23 s	72 s	8 s	18 s	29 s
 Ø5	 Ø6			
22.4 s	72.6 s			

Lane Group	Ø7
LOS	
Approach Delay	
Approach LOS	
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	

HCM Signalized Intersection Capacity Analysis

1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	1113	668	135	1787	69	516	295	58	67	292	107
Future Volume (vph)	150	1113	668	135	1787	69	516	295	58	67	292	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	7.0	7.0	6.1	7.0		5.1	5.1		4.0	5.7	6.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3519		3433	1817		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3519		3433	1817		1770	1863	1583
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)	163	1210	726	147	1942	75	561	321	63	73	317	116
RTOR Reduction (vph)	0	0	229	0	2	0	0	5	0	0	0	70
Lane Group Flow (vph)	163	1210	497	147	2015	0	561	379	0	73	317	46
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Actuated Green, G (s)	15.7	65.4	65.4	15.3	65.0		20.9	41.3		4.0	23.3	39.0
Effective Green, g (s)	15.7	65.4	65.4	15.3	65.0		16.9	41.3		4.0	23.3	39.0
Actuated g/C Ratio	0.11	0.44	0.44	0.10	0.44		0.11	0.28		0.03	0.16	0.26
Clearance Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Lane Grp Cap (vph)	186	1555	695	181	1537		389	504		47	291	414
v/s Ratio Prot	c0.09	0.34		0.08	c0.57		c0.16	0.21		c0.04	c0.17	0.01
v/s Ratio Perm			0.31									0.02
v/c Ratio	0.88	0.78	0.71	0.81	1.31		1.44	0.75		1.55	1.09	0.11
Uniform Delay, d1	65.6	35.5	34.1	65.3	41.9		66.0	49.1		72.4	62.8	41.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	33.0	2.4	3.3	23.4	144.8		213.1	5.6		330.0	78.7	0.0
Delay (s)	98.6	37.9	37.3	88.8	186.7		279.0	54.6		402.4	141.5	41.8
Level of Service	F	D	D	F	F		F	D		F	F	D
Approach Delay (s)		42.4			180.1			187.8			156.3	
Approach LOS		D			F			F			F	
Intersection Summary												
HCM 2000 Control Delay			128.7			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.23									
Actuated Cycle Length (s)			148.8			Sum of lost time (s)			27.9			
Intersection Capacity Utilization			109.9%			ICU Level of Service			H			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1838	22	37	2366	2	34	0	41	15	0	20
Future Volume (vph)	22	1838	22	37	2366	2	34	0	41	15	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	130		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998						0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3532	0	1770	3539	0	1770	1583	0	1770	1583	0
Flt Permitted	0.044			0.062			0.743			0.728		
Satd. Flow (perm)	82	3532	0	115	3539	0	1384	1583	0	1356	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2						151			143	
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		724			1561			285			144	
Travel Time (s)		16.5			35.5			13.0			6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	1998	24	40	2572	2	37	0	45	16	0	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	2022	0	40	2574	0	37	45	0	16	22	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Detector Phase	1	6		5	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	8.1	21.2		8.0	21.2		11.5	11.5		11.5	11.5	
Total Split (s)	15.0	80.0		15.0	80.0		25.0	25.0		25.0	25.0	
Total Split (%)	12.5%	66.7%		12.5%	66.7%		20.8%	20.8%		20.8%	20.8%	
Maximum Green (s)	10.9	73.8		11.0	73.8		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.1	4.3		3.0	4.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.9		1.0	1.9		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Act Effct Green (s)	100.3	94.7		101.5	96.7		9.0	9.0		9.0	9.0	
Actuated g/C Ratio	0.84	0.79		0.85	0.81		0.08	0.08		0.08	0.08	
v/c Ratio	0.16	0.73		0.22	0.90		0.36	0.17		0.16	0.09	
Control Delay	3.4	5.5		4.7	18.1		61.3	1.5		54.1	0.7	
Queue Delay	0.0	0.1		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	3.4	5.6		4.7	18.1		61.3	1.5		54.1	0.7	
LOS	A	A		A	B		E	A		D	A	
Approach Delay		5.6			17.9			28.5			23.2	
Approach LOS		A			B			C			C	

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	2	165		4	847		28	0		12	0	
Queue Length 95th (ft)	m4	194		10	#1245		62	0		34	0	
Internal Link Dist (ft)		644			1481			205			64	
Turn Bay Length (ft)	150			130								
Base Capacity (vph)	224	2787		251	2853		224	383		220	377	
Starvation Cap Reductn	0	95		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	0.11	0.75		0.16	0.90		0.17	0.12		0.07	0.06	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 54 (45%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 12.8

Intersection LOS: B

Intersection Capacity Utilization 83.8%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4
15 s	80 s	25 s
 Ø5	 Ø6 (R)	
15 s	80 s	

HCM Signalized Intersection Capacity Analysis

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1838	22	37	2366	2	34	0	41	15	0	20
Future Volume (vph)	22	1838	22	37	2366	2	34	0	41	15	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		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)	1770	3533		1770	3539		1770	1583		1770	1583	
Flt Permitted	0.04	1.00		0.06	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	81	3533		116	3539		1384	1583		1356	1583	
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)	24	1998	24	40	2572	2	37	0	45	16	0	22
RTOR Reduction (vph)	0	0	0	0	0	0	0	42	0	0	21	0
Lane Group Flow (vph)	24	2022	0	40	2574	0	37	3	0	16	1	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Actuated Green, G (s)	95.2	91.6		97.7	92.8		7.8	7.8		7.8	7.8	
Effective Green, g (s)	95.2	91.6		97.7	92.8		7.8	7.8		7.8	7.8	
Actuated g/C Ratio	0.79	0.76		0.81	0.77		0.06	0.06		0.06	0.06	
Clearance Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	114	2696		161	2736		89	102		88	102	
v/s Ratio Prot	0.01	0.57		c0.01	c0.73			0.00			0.00	
v/s Ratio Perm	0.16			0.19			c0.03			0.01		
v/c Ratio	0.21	0.75		0.25	0.94		0.42	0.03		0.18	0.01	
Uniform Delay, d1	27.6	7.9		9.0	11.3		53.9	52.6		53.1	52.5	
Progression Factor	0.97	0.49		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.3		0.8	8.0		3.1	0.1		1.0	0.1	
Delay (s)	27.3	5.1		9.8	19.3		57.0	52.7		54.1	52.6	
Level of Service	C	A		A	B		E	D		D	D	
Approach Delay (s)		5.4			19.2			54.6			53.2	
Approach LOS		A			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			14.2			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			120.0			Sum of lost time (s)			15.8			
Intersection Capacity Utilization			83.8%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1888	35	6	2312	0	71	0	18	14	3	14
Future Volume (vph)	3	1888	35	6	2312	0	71	0	18	14	3	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997							0.850		0.939	
Flt Protected								0.950			0.978	
Satd. Flow (prot)	0	3529	0	0	3539	0	0	1770	1583	0	1711	0
Flt Permitted		0.950			0.944			0.736			0.830	
Satd. Flow (perm)	0	3352	0	0	3341	0	0	1371	1583	0	1452	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2							60		15	
Link Speed (mph)		30			30			15			30	
Link Distance (ft)		691			724			207			170	
Travel Time (s)		15.7			16.5			9.4			3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	2052	38	7	2513	0	77	0	20	15	3	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2093	0	0	2520	0	0	77	20	0	33	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	20.6	20.6		20.6	20.6		12.5	12.5	12.5	12.5	12.5	
Total Split (s)	66.0	66.0		66.0	66.0		30.0	30.0	30.0	30.0	30.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		25.0%	25.0%	25.0%	25.0%	25.0%	
Maximum Green (s)	60.4	60.4		60.4	60.4		24.5	24.5	24.5	24.5	24.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.4	1.4		1.4	1.4		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.6			5.6			5.5	5.5		5.5	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		100.2			100.2			12.3	12.3		12.3	
Actuated g/C Ratio		0.84			0.84			0.10	0.10		0.10	
v/c Ratio		0.75			0.90			0.55	0.09		0.20	
Control Delay		8.5			8.4			64.7	0.8		33.2	
Queue Delay		1.0			0.0			0.0	0.0		0.0	
Total Delay		9.5			8.4			64.7	0.8		33.2	
LOS		A			A			E	A		C	
Approach Delay		9.5			8.4			51.5			33.2	
Approach LOS		A			A			D			C	

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	24.0
Total Split (%)	20%
Maximum Green (s)	20.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		355			144			58	0		13	
Queue Length 95th (ft)		574			#1180			104	0		43	
Internal Link Dist (ft)		611			644			127			90	
Turn Bay Length (ft)												
Base Capacity (vph)		2798			2789			279	370		308	
Starvation Cap Reductn		417			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.88			0.90			0.28	0.05		0.11	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 73 (61%), Referenced to phase 2:EBWB, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 10.0

Intersection LOS: A

Intersection Capacity Utilization 85.8%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

  Ø2 (R)	  Ø3	  Ø4
66 s	24 s	30 s

Lane Group	Ø3
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	

HCM Signalized Intersection Capacity Analysis

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1888	35	6	2312	0	71	0	18	14	3	14
Future Volume (vph)	3	1888	35	6	2312	0	71	0	18	14	3	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6			5.6			5.5	5.5		5.5	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.94	
Flt Protected		1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)		3529			3539			1770	1583		1710	
Flt Permitted		0.95			0.94			0.74	1.00		0.83	
Satd. Flow (perm)		3352			3343			1370	1583		1450	
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)	3	2052	38	7	2513	0	77	0	20	15	3	15
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	18	0	14	0
Lane Group Flow (vph)	0	2093	0	0	2520	0	0	77	2	0	19	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		98.0			98.0			10.9	10.9		10.9	
Effective Green, g (s)		98.0			98.0			10.9	10.9		10.9	
Actuated g/C Ratio		0.82			0.82			0.09	0.09		0.09	
Clearance Time (s)		5.6			5.6			5.5	5.5		5.5	
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		2737			2730			124	143		131	
v/s Ratio Prot												
v/s Ratio Perm		0.62			c0.75			c0.06	0.00		0.01	
v/c Ratio		0.76			0.92			0.62	0.01		0.15	
Uniform Delay, d1		5.4			8.2			52.6	49.7		50.3	
Progression Factor		1.00			0.48			1.00	1.00		1.00	
Incremental Delay, d2		2.1			3.2			9.3	0.0		0.5	
Delay (s)		7.5			7.1			61.9	49.7		50.8	
Level of Service		A			A			E	D		D	
Approach Delay (s)		7.5			7.1			59.3			50.8	
Approach LOS		A			A			E			D	
Intersection Summary												
HCM 2000 Control Delay		8.6			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.93										
Actuated Cycle Length (s)		120.0			Sum of lost time (s)			15.1				
Intersection Capacity Utilization		85.8%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	1149	115	257	1688	365	88	197	175	609	264	180
Future Volume (vph)	232	1149	115	257	1688	365	88	197	175	609	264	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	300		0	150		150	150		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.986			0.973				0.850		0.939	
Flt Protected	0.950			0.950				0.985		0.950		
Satd. Flow (prot)	1770	3490	0	1770	3444	0	0	1835	1583	3433	1749	0
Flt Permitted	0.950			0.950				0.985		0.950		
Satd. Flow (perm)	1770	3490	0	1770	3444	0	0	1835	1583	3433	1749	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			23				51		20	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		738			691			688			488	
Travel Time (s)		16.8			15.7			15.6			11.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	252	1249	125	279	1835	397	96	214	190	662	287	196
Shared Lane Traffic (%)												
Lane Group Flow (vph)	252	1374	0	279	2232	0	0	310	190	662	483	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	21.0		11.0	21.0		11.0	11.0	11.0	11.0	11.0	
Total Split (s)	20.0	67.0		28.0	75.0		22.0	22.0	28.0	33.0	33.0	
Total Split (%)	13.3%	44.7%		18.7%	50.0%		14.7%	14.7%	18.7%	22.0%	22.0%	
Maximum Green (s)	16.0	61.0		24.0	69.0		18.0	18.0	24.0	29.0	29.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0		0.0	-1.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	1.5	3.0		1.5	3.0		3.0	3.0	1.5	2.5	2.5	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effct Green (s)	16.0	62.0		24.0	70.0			18.0	46.0	29.0	29.0	
Actuated g/C Ratio	0.11	0.41		0.16	0.47			0.12	0.31	0.19	0.19	
v/c Ratio	1.34	0.95		0.99	1.38			1.41	0.37	1.00	1.36	
Control Delay	232.8	56.6		111.8	207.0			254.4	31.6	94.3	223.6	
Queue Delay	0.0	0.0		0.0	0.3			0.0	0.0	0.0	0.0	
Total Delay	232.8	56.6		111.8	207.3			254.4	31.6	94.3	223.6	
LOS	F	E		F	F			F	C	F	F	
Approach Delay		83.9			196.7			169.7			148.8	
Approach LOS		F			F			F			F	

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	~320	674		276	~1520			~406	105	337	~607	
Queue Length 95th (ft)	#502	#833		#469	#1650			#602	178	#470	#835	
Internal Link Dist (ft)		658			611			608			408	
Turn Bay Length (ft)	300			300					150	150		
Base Capacity (vph)	188	1447		283	1619			220	520	663	354	
Starvation Cap Reductn	0	0		0	146			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	1.34	0.95		0.99	1.52			1.41	0.37	1.00	1.36	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 89 (59%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.41

Intersection Signal Delay: 153.2

Intersection LOS: F

Intersection Capacity Utilization 125.4%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4	 Ø8
28 s	67 s	33 s	22 s
 Ø5	 Ø6 (R)		
20 s	75 s		

HCM Signalized Intersection Capacity Analysis

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	232	1149	115	257	1688	365	88	197	175	609	264	180
Future Volume (vph)	232	1149	115	257	1688	365	88	197	175	609	264	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.97	1.00	
Frt	1.00	0.99		1.00	0.97			1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3491		1770	3445			1834	1583	3433	1749	
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3491		1770	3445			1834	1583	3433	1749	
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)	252	1249	125	279	1835	397	96	214	190	662	287	196
RTOR Reduction (vph)	0	5	0	0	12	0	0	0	37	0	16	0
Lane Group Flow (vph)	252	1369	0	279	2220	0	0	310	153	662	467	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Actuated Green, G (s)	16.0	61.0		24.0	69.0			18.0	42.0	29.0	29.0	
Effective Green, g (s)	16.0	62.0		24.0	70.0			18.0	42.0	29.0	29.0	
Actuated g/C Ratio	0.11	0.41		0.16	0.47			0.12	0.28	0.19	0.19	
Clearance Time (s)	4.0	6.0		4.0	6.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	3.0		1.5	3.0			3.0	1.5	2.5	2.5	
Lane Grp Cap (vph)	188	1442		283	1607			220	485	663	338	
v/s Ratio Prot	c0.14	0.39		0.16	c0.64			c0.17	0.05	0.19	c0.27	
v/s Ratio Perm									0.05			
v/c Ratio	1.34	0.95		0.99	1.38			1.41	0.32	1.00	1.38	
Uniform Delay, d1	67.0	42.5		62.8	40.0			66.0	42.7	60.5	60.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	184.5	14.3		49.1	175.5			208.9	0.1	34.3	189.1	
Delay (s)	251.5	56.8		111.9	215.5			274.9	42.8	94.8	249.6	
Level of Service	F	E		F	F			F	D	F	F	
Approach Delay (s)		87.0			204.0			186.7			160.1	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM 2000 Control Delay		160.9			HCM 2000 Level of Service				F			
HCM 2000 Volume to Capacity ratio		1.38										
Actuated Cycle Length (s)		150.0			Sum of lost time (s)				17.0			
Intersection Capacity Utilization		125.4%			ICU Level of Service				H			
Analysis Period (min)		15										

c Critical Lane Group

Lanes, Volumes, Timings
5: Routes 44/202 (West Main Street) & Woodford Ave

Avon Village Center
2020 Combined Imp. PM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	 		 	
Traffic Volume (vph)	42	1486	1934	22	10	74
Future Volume (vph)	42	1486	1934	22	10	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.881	
Flt Protected		0.999			0.994	
Satd. Flow (prot)	0	3536	3532	0	1631	0
Flt Permitted		0.999			0.994	
Satd. Flow (perm)	0	3536	3532	0	1631	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		455	738		205	
Travel Time (s)		10.3	14.4		4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	1615	2102	24	11	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1661	2126	0	91	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 83.1%	ICU Level of Service E					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

5: Routes 44/202 (West Main Street) & Woodford Ave

Avon Village Center
2020 Combined Imp. PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	1486	1934	22	10	74
Future Volume (Veh/h)	42	1486	1934	22	10	74
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	46	1615	2102	24	11	80
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		455	738			
pX, platoon unblocked	0.54				0.63	0.54
vC, conflicting volume	2126				3014	1063
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1389				1793	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	83				71	86
cM capacity (veh/h)	265				37	588
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	584	1077	1401	725	91	
Volume Left	46	0	0	0	11	
Volume Right	0	0	0	24	80	
cSH	265	1700	1700	1700	211	
Volume to Capacity	0.17	0.63	0.82	0.43	0.43	
Queue Length 95th (ft)	15	0	0	0	50	
Control Delay (s)	6.7	0.0	0.0	0.0	34.3	
Lane LOS	A				D	
Approach Delay (s)	2.4		0.0		34.3	
Approach LOS					D	
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			83.1%		ICU Level of Service	E
Analysis Period (min)			15			

Lanes, Volumes, Timings

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	1188	7	12	1743	253	44	7	62	281	3	185
Future Volume (vph)	155	1188	7	12	1743	253	44	7	62	281	3	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	100		0	50		0	0		0	0		80
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.999			0.981			0.926				0.850
Flt Protected	0.950			0.950				0.981		0.950	0.953	
Satd. Flow (prot)	1770	3452	0	1805	3502	0	0	1724	0	1681	1686	1583
Flt Permitted	0.076			0.212				0.696		0.604	0.584	
Satd. Flow (perm)	142	3452	0	403	3502	0	0	1223	0	1069	1033	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			28			52				201
Link Speed (mph)		35			35			25			30	
Link Distance (ft)		1357			455			348			203	
Travel Time (s)		26.4			8.9			9.5			4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	168	1291	8	13	1895	275	48	8	67	305	3	201
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	168	1299	0	13	2170	0	0	123	0	152	156	201
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Detector Phase	1	1 2 3		2 3	2 3		4	4		4	4	4
Switch Phase												
Minimum Initial (s)	5.0						7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	10.0						11.0	11.0		11.0	11.0	11.0
Total Split (s)	18.0						21.0	21.0		21.0	21.0	21.0
Total Split (%)	18.0%						21.0%	21.0%		21.0%	21.0%	21.0%
Maximum Green (s)	13.0						17.0	17.0		17.0	17.0	17.0
Yellow Time (s)	3.0						3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0						1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0							0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0							4.0		4.0	4.0	4.0
Lead/Lag	Lead						Lag	Lag		Lag	Lag	Lag
Lead-Lag Optimize?	Yes						Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0						2.0	2.0		2.0	2.0	2.0
Recall Mode	None						None	None		None	None	None
Act Effct Green (s)	69.7	75.7		60.6	59.6			16.3		16.3	16.3	16.3
Actuated g/C Ratio	0.70	0.76		0.61	0.60			0.16		0.16	0.16	0.16
v/c Ratio	0.54	0.50		0.05	1.04			0.51		0.87	0.93	0.47
Control Delay	24.1	4.7		9.1	50.7			30.2		83.8	95.5	9.4
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	24.1	4.7		9.1	50.7			30.2		83.8	95.5	9.4
LOS	C	A		A	D			C		F	F	A

Lanes, Volumes, Timings
6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center
2020 Combined Imp. PM

Lane Group	Ø2	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	6.0
Minimum Split (s)	18.0	12.0
Total Split (s)	35.0	26.0
Total Split (%)	35%	26%
Maximum Green (s)	32.0	20.0
Yellow Time (s)	2.0	4.0
All-Red Time (s)	1.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	3.0
Recall Mode	C-Max	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		

Lanes, Volumes, Timings

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		6.9			50.4			30.2			58.0	
Approach LOS		A			D			C			E	
Queue Length 50th (ft)	20	275		3	~791			40		100	103	0
Queue Length 95th (ft)	101	8		12	#932			99		#218	#229	61
Internal Link Dist (ft)		1277			375			268			123	
Turn Bay Length (ft)	100			50								80
Base Capacity (vph)	312	2612		243	2096			251		181	175	435
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	0.54	0.50		0.05	1.04			0.49		0.84	0.89	0.46

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 31 (31%), Referenced to phase 2:EBWB and 6:, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 35.8

Intersection LOS: D

Intersection Capacity Utilization 90.2%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

 Ø1	 Ø2 (R)	 Ø3	 Ø4
18 s	35 s	26 s	21 s

Lane Group	Ø2	Ø3
Approach Delay		
Approach LOS		
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		

HCM Signalized Intersection Capacity Analysis

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center
2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	1188	7	12	1743	253	44	7	62	281	3	185
Future Volume (vph)	155	1188	7	12	1743	253	44	7	62	281	3	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	5.0	4.0		1.0	2.0			4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		0.95	0.95	1.00
Flt	1.00	1.00		1.00	0.98			0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	0.95	1.00
Satd. Flow (prot)	1770	3452		1805	3502			1724		1681	1687	1583
Flt Permitted	0.08	1.00		0.21	1.00			0.70		0.60	0.58	1.00
Satd. Flow (perm)	142	3452		404	3502			1224		1068	1034	1583
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)	168	1291	8	13	1895	275	48	8	67	305	3	201
RTOR Reduction (vph)	0	1	0	0	12	0	0	44	0	0	0	168
Lane Group Flow (vph)	168	1298	0	13	2158	0	0	79	0	152	156	33
Heavy Vehicles (%)	2%	1%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Actuated Green, G (s)	68.7	73.7		55.6	55.6			16.3		16.3	16.3	16.3
Effective Green, g (s)	65.7	72.7		57.6	56.6			16.3		16.3	16.3	16.3
Actuated g/C Ratio	0.66	0.73		0.58	0.57			0.16		0.16	0.16	0.16
Clearance Time (s)	5.0							4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0							2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	306	2509		232	1982			199		174	168	258
v/s Ratio Prot	0.07	c0.38			c0.62							
v/s Ratio Perm	0.29			0.03				0.06		0.14	c0.15	0.02
v/c Ratio	0.55	0.52		0.06	1.09			0.40		0.87	0.93	0.13
Uniform Delay, d1	22.6	6.0		9.3	21.7			37.5		40.8	41.3	35.8
Progression Factor	1.13	0.83		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2	1.8	0.2		0.1	49.0			0.5		34.2	47.9	0.1
Delay (s)	27.3	5.1		9.4	70.7			37.9		75.0	89.2	35.9
Level of Service	C	A		A	E			D		E	F	D
Approach Delay (s)		7.6			70.3			37.9			63.9	
Approach LOS		A			E			D			E	
Intersection Summary												
HCM 2000 Control Delay			47.2			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			90.2%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group

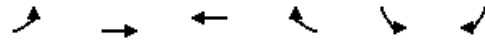
Lanes, Volumes, Timings
7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined Imp. PM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	238	1024	1772	226	221	337
Future Volume (vph)	238	1024	1772	226	221	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11
Storage Length (ft)	125			100	215	300
Storage Lanes	1			1	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3539	1583	3319	1531
Flt Permitted	0.073				0.950	
Satd. Flow (perm)	136	3539	3539	1583	3319	1531
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				72		314
Link Speed (mph)		30	30		30	
Link Distance (ft)		2398	1357		443	
Travel Time (s)		54.5	30.8		10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	259	1113	1926	246	240	366
Shared Lane Traffic (%)						
Lane Group Flow (vph)	259	1113	1926	246	240	366
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2			2		4
Detector Phase	1	2	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	7.0	7.0
Minimum Split (s)	10.0	22.3	22.3	22.3	11.5	11.5
Total Split (s)	21.0	47.0	47.0	47.0	32.0	32.0
Total Split (%)	21.0%	47.0%	47.0%	47.0%	32.0%	32.0%
Maximum Green (s)	16.0	39.7	39.7	39.7	27.5	27.5
Yellow Time (s)	3.0	4.2	4.2	4.2	3.0	3.0
All-Red Time (s)	2.0	3.1	3.1	3.1	1.5	1.5
Lost Time Adjust (s)	0.0	-1.2	-1.2	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.1	6.1	7.3	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	1.5	1.5	1.5	1.5	1.5
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	72.9	56.3	56.3	55.1	12.6	12.6
Actuated g/C Ratio	0.73	0.56	0.56	0.55	0.13	0.13
v/c Ratio	0.74	0.56	0.97	0.27	0.58	0.79
Control Delay	50.4	5.2	22.5	4.0	46.0	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.4	5.2	22.5	4.0	46.0	20.3
LOS	D	A	C	A	D	C
Approach Delay		13.7	20.4		30.4	

Lanes, Volumes, Timings
 7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
 2020 Combined Imp. PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach LOS		B	C		C	
Queue Length 50th (ft)	127	4	686	22	76	31
Queue Length 95th (ft)	m140	411	m#831	m65	104	122
Internal Link Dist (ft)		2318	1277		363	
Turn Bay Length (ft)	125			100	215	300
Base Capacity (vph)	388	1993	1993	904	912	648
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	0.67	0.56	0.97	0.27	0.26	0.56

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 19.7

Intersection LOS: B

Intersection Capacity Utilization 81.5%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Routes 44/202 (West Main Street) & Bickford Dr.



HCM Signalized Intersection Capacity Analysis

7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined Imp. PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	238	1024	1772	226	221	337
Future Volume (vph)	238	1024	1772	226	221	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	11
Total Lost time (s)	5.0	6.1	6.1	7.3	4.5	4.5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3319	1531
Flt Permitted	0.07	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	135	3539	3539	1583	3319	1531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	259	1113	1926	246	240	366
RTOR Reduction (vph)	0	0	0	32	0	274
Lane Group Flow (vph)	259	1113	1926	214	240	92
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2			2		4
Actuated Green, G (s)	70.6	55.1	55.1	55.1	12.6	12.6
Effective Green, g (s)	70.6	56.3	56.3	55.1	12.6	12.6
Actuated g/C Ratio	0.71	0.56	0.56	0.55	0.13	0.13
Clearance Time (s)	5.0	7.3	7.3	7.3	4.5	4.5
Vehicle Extension (s)	3.0	1.5	1.5	1.5	1.5	1.5
Lane Grp Cap (vph)	348	1992	1992	872	418	192
v/s Ratio Prot	c0.12	0.31	c0.54		c0.07	
v/s Ratio Perm	0.41			0.13		0.06
v/c Ratio	0.74	0.56	0.97	0.25	0.57	0.48
Uniform Delay, d1	29.2	13.9	21.0	11.7	41.2	40.6
Progression Factor	1.83	0.28	0.61	0.37	1.00	1.00
Incremental Delay, d2	5.9	0.8	5.9	0.2	1.2	0.7
Delay (s)	59.5	4.6	18.7	4.5	42.4	41.3
Level of Service	E	A	B	A	D	D
Approach Delay (s)		15.0	17.1		41.7	
Approach LOS		B	B		D	
Intersection Summary						
HCM 2000 Control Delay			20.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.87			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	15.6
Intersection Capacity Utilization			81.5%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1229	13	2	2045	29	19	1	6	22	0	11
Future Volume (vph)	11	1229	13	2	2045	29	19	1	6	22	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998				0.850		0.955	
Flt Protected								0.954			0.968	
Satd. Flow (prot)	0	3532	0	0	3532	0	0	1777	1583	0	1722	0
Flt Permitted		0.909			0.955			0.897			0.786	
Satd. Flow (perm)	0	3211	0	0	3373	0	0	1671	1583	0	1398	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3				70		70	
Link Speed (mph)		30			30			15			25	
Link Distance (ft)		769			2398			132			221	
Travel Time (s)		17.5			54.5			6.0			6.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	1336	14	2	2223	32	21	1	7	24	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1362	0	0	2257	0	0	22	7	0	36	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		1	1 2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	21.4	21.4		11.0			20.3	20.3	20.3	20.3	20.3	
Total Split (s)	64.0	64.0		11.0			25.0	25.0	25.0	25.0	25.0	
Total Split (%)	64.0%	64.0%		11.0%			25.0%	25.0%	25.0%	25.0%	25.0%	
Maximum Green (s)	58.6	58.6		7.0			20.7	20.7	20.7	20.7	20.7	
Yellow Time (s)	4.1	4.1		3.0			3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.3	1.3		1.0			1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0						0.0	0.0		0.0	
Total Lost Time (s)		5.4						4.3	4.3		4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None			None	None	None	None	None	
Act Effct Green (s)		58.6			84.5			7.4	7.4		7.4	
Actuated g/C Ratio		0.59			0.84			0.07	0.07		0.07	
v/c Ratio		0.72			0.78			0.18	0.04		0.22	
Control Delay		17.7			11.6			46.1	0.3		5.5	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		17.7			11.6			46.1	0.3		5.5	
LOS		B			B			D	A		A	
Approach Delay		17.7			11.6			35.1			5.5	
Approach LOS		B			B			D			A	
Queue Length 50th (ft)		305			220			13	0		0	
Queue Length 95th (ft)		389			m454			37	0		10	
Internal Link Dist (ft)		689			2318			52			141	

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		1882			2888			345	383		344	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.72			0.78			0.06	0.02		0.10	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 14.0

Intersection LOS: B

Intersection Capacity Utilization 74.3%

ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)



HCM Signalized Intersection Capacity Analysis

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	1229	13	2	2045	29	19	1	6	22	0	11
Future Volume (vph)	11	1229	13	2	2045	29	19	1	6	22	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4			4.0			4.3	4.3		4.3	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.95	
Flt Protected		1.00			1.00			0.95	1.00		0.97	
Satd. Flow (prot)		3532			3532			1778	1583		1722	
Flt Permitted		0.91			0.95			0.90	1.00		0.79	
Satd. Flow (perm)		3211			3373			1670	1583		1399	
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)	12	1336	14	2	2223	32	21	1	7	24	0	12
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	7	0	34	0
Lane Group Flow (vph)	0	1361	0	0	2256	0	0	22	0	0	2	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		56.8			81.3			5.0	5.0		5.0	
Effective Green, g (s)		56.8			81.3			5.0	5.0		5.0	
Actuated g/C Ratio		0.57			0.81			0.05	0.05		0.05	
Clearance Time (s)		5.4						4.3	4.3		4.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		1823			2781			83	79		69	
v/s Ratio Prot					c0.20							
v/s Ratio Perm		0.42			c0.46			c0.01	0.00		0.00	
v/c Ratio		0.75			0.81			0.27	0.00		0.03	
Uniform Delay, d1		16.2			5.1			45.7	45.1		45.2	
Progression Factor		1.00			2.53			1.00	1.00		1.00	
Incremental Delay, d2		2.8			0.8			1.7	0.0		0.2	
Delay (s)		19.0			13.8			47.4	45.2		45.3	
Level of Service		B			B			D	D		D	
Approach Delay (s)		19.0			13.8			46.9			45.3	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			16.3		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			100.0		Sum of lost time (s)				13.7			
Intersection Capacity Utilization			74.3%		ICU Level of Service				D			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
 9: Bickford Dr. & Site Driveway #1/Site Driveway #2

Avon Village Center
 2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	0	56	107	0	78	48	325	91	122	395	48
Future Volume (vph)	49	0	56	107	0	78	48	325	91	122	395	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	125		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			50			50		
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
Frt		0.928			0.943				0.850		0.984	
Flt Protected		0.977			0.972		0.950			0.950		
Satd. Flow (prot)	0	1689	0	0	1707	0	1770	1863	1583	1770	1833	0
Flt Permitted		0.977			0.972		0.950			0.950		
Satd. Flow (perm)	0	1689	0	0	1707	0	1770	1863	1583	1770	1833	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			181			443			384	
Travel Time (s)		4.0			4.1			10.1			8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	0	61	116	0	85	52	353	99	133	429	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	114	0	0	201	0	52	353	99	133	481	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 51.8%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

9: Bickford Dr. & Site Driveway #1/Site Driveway #2

Avon Village Center
2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	0	56	107	0	78	48	325	91	122	395	48
Future Volume (Veh/h)	49	0	56	107	0	78	48	325	91	122	395	48
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	0	61	116	0	85	52	353	99	133	429	52
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								443				
pX, platoon unblocked												
vC, conflicting volume	1263	1277	455	1213	1204	353	481			452		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1263	1277	455	1213	1204	353	481			452		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	53	100	90	7	100	88	95			88		
cM capacity (veh/h)	112	139	605	125	154	691	1082			1109		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	114	201	52	353	99	133	481					
Volume Left	53	116	52	0	0	133	0					
Volume Right	61	85	0	0	99	0	52					
cSH	199	191	1082	1700	1700	1109	1700					
Volume to Capacity	0.57	1.05	0.05	0.21	0.06	0.12	0.28					
Queue Length 95th (ft)	78	233	4	0	0	10	0					
Control Delay (s)	44.8	130.7	8.5	0.0	0.0	8.7	0.0					
Lane LOS	E	F	A			A						
Approach Delay (s)	44.8	130.7	0.9			1.9						
Approach LOS	E	F										
Intersection Summary												
Average Delay			23.0									
Intersection Capacity Utilization			51.8%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
10: Bickford Dr. & Climax Road/Main St.

Avon Village Center
2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	14	190	22	17	0	241	197	19	0	310	65
Future Volume (vph)	44	14	190	22	17	0	241	197	19	0	310	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	100		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
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
Frt		0.896						0.994			0.977	
Flt Protected		0.991			0.972			0.974				
Satd. Flow (prot)	0	1654	0	0	1811	0	0	1803	0	0	1820	0
Flt Permitted		0.991			0.972			0.974				
Satd. Flow (perm)	0	1654	0	0	1811	0	0	1803	0	0	1820	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		271			628			384			208	
Travel Time (s)		6.2			14.3			8.7			4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	15	207	24	18	0	262	214	21	0	337	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	270	0	0	42	0	0	497	0	0	408	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
10: Bickford Dr. & Climax Road/Main St.

Avon Village Center
2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	44	14	190	22	17	0	241	197	19	0	310	65
Future Volume (veh/h)	44	14	190	22	17	0	241	197	19	0	310	65
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
Hourly flow rate (vph)	48	15	207	24	18	0	262	214	21	0	337	71
Approach Volume (veh/h)	270			42			497			408		
Crossing Volume (veh/h)	361			524			63			304		
High Capacity (veh/h)	1043			916			1318			1091		
High v/c (veh/h)	0.26			0.05			0.38			0.37		
Low Capacity (veh/h)	852			739			1101			895		
Low v/c (veh/h)	0.32			0.06			0.45			0.46		
Intersection Summary												
Maximum v/c High			0.38									
Maximum v/c Low			0.46									
Intersection Capacity Utilization			70.1%		ICU Level of Service				C			

Intersection				
Intersection Delay, s/veh	9.7			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	270	42	497	408
Demand Flow Rate, veh/h	275	42	506	416
Vehicles Circulating, veh/h	368	534	64	309
Vehicles Exiting, veh/h	357	36	579	267
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.0	6.2	9.0	11.3
Approach LOS	A	A	A	B
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	275	42	506	416
Cap Entry Lane, veh/h	782	662	1060	830
Entry HV Adj Factor	0.981	0.992	0.982	0.981
Flow Entry, veh/h	270	42	497	408
Cap Entry, veh/h	767	657	1040	814
V/C Ratio	0.352	0.063	0.477	0.501
Control Delay, s/veh	9.0	6.2	9.0	11.3
LOS	A	A	A	B
95th %tile Queue, veh	2	0	3	3

Lanes, Volumes, Timings
11: Climax Road & Bickford Ave. Ext.

Avon Village Center
2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	0	25	19	0	7	37	268	18	5	204	12
Future Volume (vph)	13	0	25	19	0	7	37	268	18	5	204	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.911			0.963			0.992			0.993	
Flt Protected		0.983			0.965			0.994			0.999	
Satd. Flow (prot)	0	1668	0	0	1731	0	0	1837	0	0	1848	0
Flt Permitted		0.983			0.965			0.994			0.999	
Satd. Flow (perm)	0	1668	0	0	1731	0	0	1837	0	0	1848	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		343			134			271			1156	
Travel Time (s)		7.8			3.0			6.2			26.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	0	27	21	0	8	40	291	20	5	222	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	0	0	29	0	0	351	0	0	240	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 42.3%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

11: Climax Road & Bickford Ave. Ext.

Avon Village Center
2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	0	25	19	0	7	37	268	18	5	204	12
Future Volume (Veh/h)	13	0	25	19	0	7	37	268	18	5	204	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	0	27	21	0	8	40	291	20	5	222	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)											1156	
pX, platoon unblocked												
vC, conflicting volume	628	630	228	646	626	301	235			311		
vC1, stage 1 conf vol	238	238		381	381							
vC2, stage 2 conf vol	389	391		266	245							
vCu, unblocked vol	628	630	228	646	626	301	235			311		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	97	96	100	99	97			100		
cM capacity (veh/h)	551	533	811	537	531	739	1332			1249		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	41	29	351	240								
Volume Left	14	21	40	5								
Volume Right	27	8	20	13								
cSH	698	581	1332	1249								
Volume to Capacity	0.06	0.05	0.03	0.00								
Queue Length 95th (ft)	5	4	2	0								
Control Delay (s)	10.5	11.5	1.1	0.2								
Lane LOS	B	B	A	A								
Approach Delay (s)	10.5	11.5	1.1	0.2								
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.8									
Intersection Capacity Utilization			42.3%	ICU Level of Service						A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Combined Imp. PM

							Ø1	Ø2
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Lane Configurations	LT	LT	TH	TH	LT	LT		
Traffic Volume (vph)	100	188	467	85	136	466		
Future Volume (vph)	100	188	467	85	136	466		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	0.912		0.979					
Flt Protected	0.983					0.989		
Satd. Flow (prot)	1670	0	1824	0	0	1842		
Flt Permitted	0.983					0.609		
Satd. Flow (perm)	1670	0	1824	0	0	1134		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR)	81		14					
Link Speed (mph)	35		40			40		
Link Distance (ft)	1156		405			551		
Travel Time (s)	22.5		6.9			9.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	109	204	508	92	148	507		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	313	0	600	0	0	655		
Turn Type	Prot		NA		D.P+P	NA		
Protected Phases	4		1 2		8	1 2 8	1	2
Permitted Phases					1 2			
Detector Phase	4		1 2		8	1 2 8		
Switch Phase								
Minimum Initial (s)	6.0				2.0		2.0	15.0
Minimum Split (s)	20.0				19.0		19.0	20.0
Total Split (s)	22.0				20.0		20.0	39.0
Total Split (%)	21.8%				19.8%		20%	39%
Maximum Green (s)	18.0				17.0		17.0	35.0
Yellow Time (s)	3.0				2.0		2.0	3.0
All-Red Time (s)	1.0				1.0		1.0	1.0
Lost Time Adjust (s)	0.0							
Total Lost Time (s)	4.0							
Lead/Lag	Lag				Lead		Lag	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes
Vehicle Extension (s)	1.5				2.0		2.0	5.0
Recall Mode	None				None		Min	Min
Walk Time (s)	5.0				5.0		5.0	5.0
Flash Dont Walk (s)	11.0				11.0		11.0	11.0
Pedestrian Calls (#/hr)	0				0		0	0
Act Effct Green (s)	16.0		54.6			68.7		
Actuated g/C Ratio	0.17		0.58			0.72		
v/c Ratio	0.90		0.57			0.71		
Control Delay	58.2		15.9			9.6		
Queue Delay	0.0		0.0			0.0		
Total Delay	58.2		15.9			9.6		
LOS	E		B			A		
Approach Delay	58.2		15.9			9.6		
Approach LOS	E		B			A		

Lanes, Volumes, Timings
 12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
 2020 Combined Imp. PM

	↙	↖	↑	↗	↘	↓		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Queue Length 50th (ft)	147		230			134		
Queue Length 95th (ft)	#300		343			194		
Internal Link Dist (ft)	1076		325			471		
Turn Bay Length (ft)								
Base Capacity (vph)	386		1094			992		
Starvation Cap Reductn	0		0			0		
Spillback Cap Reductn	0		0			0		
Storage Cap Reductn	0		0			0		
Reduced v/c Ratio	0.81		0.55			0.66		

Intersection Summary

Area Type: Other

Cycle Length: 101

Actuated Cycle Length: 94.9

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 21.7

Intersection LOS: C

Intersection Capacity Utilization 88.9%

ICU Level of Service E

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

↙ Ø8	↕ Ø1	↕ Ø2	↘ Ø4
20 s	20 s	39 s	22 s

HCM Signalized Intersection Capacity Analysis

12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Combined Imp. PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	100	188	467	85	136	466
Future Volume (vph)	100	188	467	85	136	466
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		3.0			3.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.91		0.98			1.00
Flt Protected	0.98		1.00			0.99
Satd. Flow (prot)	1670		1824			1842
Flt Permitted	0.98		1.00			0.61
Satd. Flow (perm)	1670		1824			1135
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	204	508	92	148	507
RTOR Reduction (vph)	67	0	6	0	0	0
Lane Group Flow (vph)	246	0	594	0	0	655
Turn Type	Prot		NA		D.P+P	NA
Protected Phases	4		1 2		8	1 2 8
Permitted Phases					1 2	
Actuated Green, G (s)	16.0		53.5			67.7
Effective Green, g (s)	16.0		53.5			67.7
Actuated g/C Ratio	0.17		0.56			0.71
Clearance Time (s)	4.0					
Vehicle Extension (s)	1.5					
Lane Grp Cap (vph)	282		1030			917
v/s Ratio Prot	c0.15		0.33			c0.11
v/s Ratio Perm						c0.40
v/c Ratio	0.87		0.58			0.71
Uniform Delay, d1	38.3		13.3			7.9
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	23.5		0.5			2.2
Delay (s)	61.9		13.8			10.1
Level of Service	E		B			B
Approach Delay (s)	61.9		13.8			10.1
Approach LOS	E		B			B
Intersection Summary						
HCM 2000 Control Delay			21.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.77			
Actuated Cycle Length (s)			94.7		Sum of lost time (s)	14.0
Intersection Capacity Utilization			88.9%		ICU Level of Service	E
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings
13: Site Driveway #3/Residential Drive & Bickford Dr.

Avon Village Center
2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	212	20	3	315	3	26	0	4	2	0	2
Future Volume (vph)	3	212	20	3	315	3	26	0	4	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.988			0.999			0.983			0.932	
Flt Protected		0.999						0.958			0.976	
Satd. Flow (prot)	0	1839	0	0	1861	0	0	1754	0	0	1694	0
Flt Permitted		0.999						0.958			0.976	
Satd. Flow (perm)	0	1839	0	0	1861	0	0	1754	0	0	1694	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			328			185			396	
Travel Time (s)		4.4			7.5			4.2			9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	230	22	3	342	3	28	0	4	2	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	255	0	0	348	0	0	32	0	0	4	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 28.5%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis 13: Site Driveway #3/Residential Drive & Bickford Dr.

Avon Village Center
2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	212	20	3	315	3	26	0	4	2	0	2
Future Volume (Veh/h)	3	212	20	3	315	3	26	0	4	2	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	230	22	3	342	3	28	0	4	2	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	345			252			598	598	241	600	608	344
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	345			252			598	598	241	600	608	344
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			93	100	99	100	100	100
cM capacity (veh/h)	1214			1313			411	414	798	409	409	699
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	255	348	32	4								
Volume Left	3	3	28	2								
Volume Right	22	3	4	2								
cSH	1214	1313	438	516								
Volume to Capacity	0.00	0.00	0.07	0.01								
Queue Length 95th (ft)	0	0	6	1								
Control Delay (s)	0.1	0.1	13.9	12.0								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	0.1	13.9	12.0								
Approach LOS			B	B								
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			28.5%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
14: N. Main St./Retail Drive #2 & Bickford Dr.

Avon Village Center
2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	166	0	19	296	16	0	13	22	18	14	56
Future Volume (vph)	53	166	0	19	296	16	0	13	22	18	14	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			50			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
Frt					0.992			0.915			0.914	
Flt Protected		0.988		0.950							0.990	
Satd. Flow (prot)	0	1840	0	1770	1848	0	0	1704	0	0	1686	0
Flt Permitted		0.988		0.950							0.990	
Satd. Flow (perm)	0	1840	0	1770	1848	0	0	1704	0	0	1686	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		328			250			360			304	
Travel Time (s)		7.5			5.7			8.2			6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	180	0	21	322	17	0	14	24	20	15	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	238	0	21	339	0	0	38	0	0	96	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 50.1%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

14: N. Main St./Retail Drive #2 & Bickford Dr.

Avon Village Center
2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	166	0	19	296	16	0	13	22	18	14	56
Future Volume (Veh/h)	53	166	0	19	296	16	0	13	22	18	14	56
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	180	0	21	322	17	0	14	24	20	15	61
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	339			180			728	677	180	700	668	330
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	339			180			728	677	180	700	668	330
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			98			100	96	97	94	96	91
cM capacity (veh/h)	1220			1396			286	351	863	318	355	711
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	238	21	339	38	96							
Volume Left	58	21	0	0	20							
Volume Right	0	0	17	24	61							
cSH	1220	1396	1700	562	503							
Volume to Capacity	0.05	0.02	0.20	0.07	0.19							
Queue Length 95th (ft)	4	1	0	5	17							
Control Delay (s)	2.3	7.6	0.0	11.9	13.8							
Lane LOS	A	A		B	B							
Approach Delay (s)	2.3	0.4		11.9	13.8							
Approach LOS				B	B							
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			50.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
15: N. Main St. & Site Driveway #4

Avon Village Center
2020 Combined Imp. PM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	68	20	13	56	19	14
Future Volume (vph)	68	20	13	56	19	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.969		0.890			
Flt Protected	0.963					0.972
Satd. Flow (prot)	1738	0	1658	0	0	1811
Flt Permitted	0.963					0.972
Satd. Flow (perm)	1738	0	1658	0	0	1811
Link Speed (mph)	30		30			30
Link Distance (ft)	248		233			360
Travel Time (s)	5.6		5.3			8.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	22	14	61	21	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	0	75	0	0	36
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 20.1%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 15: N. Main St. & Site Driveway #4

Avon Village Center
2020 Combined Imp. PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	68	20	13	56	19	14
Future Volume (Veh/h)	68	20	13	56	19	14
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	22	14	61	21	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	102	44			75	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	102	44			75	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	98			99	
cM capacity (veh/h)	885	1025			1524	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	96	75	36			
Volume Left	74	0	21			
Volume Right	22	61	0			
cSH	913	1700	1524			
Volume to Capacity	0.11	0.04	0.01			
Queue Length 95th (ft)	9	0	1			
Control Delay (s)	9.4	0.0	4.4			
Lane LOS	A		A			
Approach Delay (s)	9.4	0.0	4.4			
Approach LOS	A					
Intersection Summary						
Average Delay			5.1			
Intersection Capacity Utilization		20.1%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
16: N. Main St. & Main St.

Avon Village Center
2020 Combined Imp. PM

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	33	0	0	0	0	0	0	36	0	0	42	40	
Future Volume (vph)	33	0	0	0	0	0	0	36	0	0	42	40	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor													
Frt												0.935	
Flt Protected	0.950												
Satd. Flow (prot)	0	1770	0	0	1863	0	0	1863	0	0	1742	0	
Flt Permitted	0.950												
Satd. Flow (perm)	0	1770	0	0	1863	0	0	1863	0	0	1742	0	
Link Speed (mph)	30			30			30			30			
Link Distance (ft)	628				692				636				233
Travel Time (s)	14.3				15.7				14.5				5.3
Confl. Peds. (#/hr)	3												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	36	0	0	0	0	0	0	39	0	0	46	43	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	36	0	0	0	0	0	39	0	0	89	0	
Sign Control	Free			Free			Stop			Stop			
Intersection Summary													
Area Type:	Other												
Control Type: Unsignalized													
Intersection Capacity Utilization 14.7% ICU Level of Service A													
Analysis Period (min) 15													

HCM Unsignalized Intersection Capacity Analysis

16: N. Main St. & Main St.

Avon Village Center
2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	0	0	0	0	0	0	36	0	0	42	40
Future Volume (Veh/h)	33	0	0	0	0	0	0	36	0	0	42	40
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	0	0	0	0	0	0	39	0	0	46	43
Pedestrians	3											
Lane Width (ft)	12.0											
Walking Speed (ft/s)	4.0											
Percent Blockage	0											
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0			0			138	72	3	94	72	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			138	72	3	94	72	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	95	100	100	94	96
cM capacity (veh/h)	1623			1623			752	800	1078	839	800	1085
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	36	0	39	89								
Volume Left	36	0	0	0								
Volume Right	0	0	0	43								
cSH	1623	1700	800	916								
Volume to Capacity	0.02	0.00	0.05	0.10								
Queue Length 95th (ft)	2	0	4	8								
Control Delay (s)	7.3	0.0	9.7	9.4								
Lane LOS	A		A	A								
Approach Delay (s)	7.3	0.0	9.7	9.4								
Approach LOS			A	A								
Intersection Summary												
Average Delay				9.0								
Intersection Capacity Utilization				14.7%	ICU Level of Service				A			
Analysis Period (min)				15								

Lanes, Volumes, Timings
17: Ensign Drive & N. Main St.

Avon Village Center
2020 Combined Imp. PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	42	36	371	426	0
Future Volume (vph)	0	42	36	371	426	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1770	1863	1863	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1770	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	636			203	406	
Travel Time (s)	14.5			4.6	9.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	46	39	403	463	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	39	403	463	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	39.1%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

17: Ensign Drive & N. Main St.

Avon Village Center

2020 Combined Imp. PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	42	36	371	426	0
Future Volume (Veh/h)	0	42	36	371	426	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	46	39	403	463	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)				203		
pX, platoon unblocked	0.96					
vC, conflicting volume	944	463	463			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	921	463	463			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	96			
cM capacity (veh/h)	278	599	1098			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	46	39	403	463		
Volume Left	0	39	0	0		
Volume Right	46	0	0	0		
cSH	599	1098	1700	1700		
Volume to Capacity	0.08	0.04	0.24	0.27		
Queue Length 95th (ft)	6	3	0	0		
Control Delay (s)	11.5	8.4	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	11.5	0.7		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			39.1%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
18: Ensign Drive & Main St./Site Driveway #7

Avon Village Center
2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	89	0	25	0	288	83	22	337	0
Future Volume (vph)	0	0	0	89	0	25	0	288	83	22	337	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.971			0.970				
Flt Protected					0.962						0.997	
Satd. Flow (prot)	0	1863	0	0	1740	0	0	1807	0	0	1857	0
Flt Permitted					0.962						0.997	
Satd. Flow (perm)	0	1863	0	0	1740	0	0	1807	0	0	1857	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		692			210			406			373	
Travel Time (s)		15.7			4.8			9.2			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	97	0	27	0	313	90	24	366	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	124	0	0	403	0	0	390	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 48.9%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis 18: Ensign Drive & Main St./Site Driveway #7

Avon Village Center
2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	89	0	25	0	288	83	22	337	0
Future Volume (Veh/h)	0	0	0	89	0	25	0	288	83	22	337	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	97	0	27	0	313	90	24	366	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								609				
pX, platoon unblocked	0.99	0.99		0.99	0.99	0.99				0.99		
vC, conflicting volume	799	817	366	772	772	358	366			403		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	793	811	366	766	766	348	366			393		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	69	100	96	100			98		
cM capacity (veh/h)	287	304	679	312	323	689	1193			1155		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	124	403	390								
Volume Left	0	97	0	24								
Volume Right	0	27	90	0								
cSH	1700	354	1193	1155								
Volume to Capacity	0.00	0.35	0.00	0.02								
Queue Length 95th (ft)	0	38	0	2								
Control Delay (s)	0.0	20.5	0.0	0.7								
Lane LOS	A	C		A								
Approach Delay (s)	0.0	20.5	0.0	0.7								
Approach LOS	A	C										
Intersection Summary												
Average Delay			3.1									
Intersection Capacity Utilization			48.9%	ICU Level of Service						A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
19: Ensign Drive & Site Driveway #5

Avon Village Center
2020 Combined Imp. PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	94	78	227	265	17
Future Volume (vph)	21	94	78	227	265	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.992	
Flt Protected	0.991			0.987		
Satd. Flow (prot)	1643	0	0	1839	1848	0
Flt Permitted	0.991			0.987		
Satd. Flow (perm)	1643	0	0	1839	1848	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	280			373	494	
Travel Time (s)	6.4			8.5	11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	102	85	247	288	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	125	0	0	332	306	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 48.2%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

19: Ensign Drive & Site Driveway #5

Avon Village Center

2020 Combined Imp. PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	94	78	227	265	17
Future Volume (Veh/h)	21	94	78	227	265	17
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	102	85	247	288	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				982		
pX, platoon unblocked						
vC, conflicting volume	714	297	306			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	714	297	306			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	86	93			
cM capacity (veh/h)	371	742	1255			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	125	332	306			
Volume Left	23	85	0			
Volume Right	102	0	18			
cSH	627	1255	1700			
Volume to Capacity	0.20	0.07	0.18			
Queue Length 95th (ft)	18	5	0			
Control Delay (s)	12.2	2.5	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.2	2.5	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization		48.2%		ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
20: Ensign Drive/Retail Drive #3 & Bickford Dr.

Avon Village Center
2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	183	8	184	292	81	6	84	156	88	91	14
Future Volume (vph)	13	183	8	184	292	81	6	84	156	88	91	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.980			0.914			0.990	
Flt Protected		0.997			0.984			0.999			0.978	
Satd. Flow (prot)	0	1848	0	0	1796	0	0	1701	0	0	1804	0
Flt Permitted		0.997			0.984			0.999			0.978	
Satd. Flow (perm)	0	1848	0	0	1796	0	0	1701	0	0	1804	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			734			494			296	
Travel Time (s)		8.1			16.7			11.2			6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	199	9	200	317	88	7	91	170	96	99	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	222	0	0	605	0	0	268	0	0	210	0
Sign Control		Yield			Yield			Yield			Yield	
Intersection Summary												
Area Type:	Other											
Control Type:	Roundabout											
Intersection Capacity Utilization 79.5%	ICU Level of Service D											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
20: Ensign Drive/Retail Drive #3 & Bickford Dr.

Avon Village Center
2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	13	183	8	184	292	81	6	84	156	88	91	14
Future Volume (veh/h)	13	183	8	184	292	81	6	84	156	88	91	14
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
Hourly flow rate (vph)	14	199	9	200	317	88	7	91	170	96	99	15
Approach Volume (veh/h)	222			605			268			210		
Crossing Volume (veh/h)	395			112			309			524		
High Capacity (veh/h)	1015			1269			1087			916		
High v/c (veh/h)	0.22			0.48			0.25			0.23		
Low Capacity (veh/h)	827			1056			891			739		
Low v/c (veh/h)	0.27			0.57			0.30			0.28		
Intersection Summary												
Maximum v/c High	0.48											
Maximum v/c Low	0.57											
Intersection Capacity Utilization	79.5%			ICU Level of Service					D			

Intersection				
Intersection Delay, s/veh	10.4			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	222	605	268	210
Demand Flow Rate, veh/h	226	617	273	214
Vehicles Circulating, veh/h	403	114	315	534
Vehicles Exiting, veh/h	345	474	314	197
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.4	12.3	8.3	9.8
Approach LOS	A	B	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	226	617	273	214
Cap Entry Lane, veh/h	755	1008	825	662
Entry HV Adj Factor	0.982	0.980	0.982	0.981
Flow Entry, veh/h	222	605	268	210
Cap Entry, veh/h	742	988	810	650
V/C Ratio	0.299	0.612	0.331	0.323
Control Delay, s/veh	8.4	12.3	8.3	9.8
LOS	A	B	A	A
95th %tile Queue, veh	1	4	1	1

Lanes, Volumes, Timings
21: Bickford Dr. & Fisher Drive

Avon Village Center
2020 Combined Imp. PM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	68	358	490	44	43	64
Future Volume (vph)	68	358	490	44	43	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			100	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850	0.919	
Flt Protected	0.950	0.999			0.980	
Satd. Flow (prot)	1681	1768	1863	1583	1678	0
Flt Permitted	0.950	0.999			0.980	
Satd. Flow (perm)	1681	1768	1863	1583	1678	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		734	305		171	
Travel Time (s)		16.7	6.9		3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	389	533	48	47	70
Shared Lane Traffic (%)	10%					
Lane Group Flow (vph)	67	396	533	48	117	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 51.4% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

21: Bickford Dr. & Fisher Drive

Avon Village Center
2020 Combined Imp. PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	68	358	490	44	43	64
Future Volume (Veh/h)	68	358	490	44	43	64
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	389	533	48	47	70
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			637			
pX, platoon unblocked						
vC, conflicting volume	581				1070	533
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	581				1070	533
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				79	87
cM capacity (veh/h)	993				227	547
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	49	414	533	48	117	
Volume Left	49	25	0	0	47	
Volume Right	0	0	0	48	70	
cSH	993	993	1700	1700	349	
Volume to Capacity	0.07	0.07	0.31	0.03	0.34	
Queue Length 95th (ft)	6	6	0	0	36	
Control Delay (s)	8.9	1.3	0.0	0.0	20.4	
Lane LOS	A	A			C	
Approach Delay (s)	2.1		0.0		20.4	
Approach LOS					C	
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			51.4%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
22: Bickford Dr. & Office Drive

Avon Village Center
2020 Combined Imp. PM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	427	534	2	8	3
Future Volume (vph)	1	427	534	2	8	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.966	
Flt Protected					0.964	
Satd. Flow (prot)	0	1863	1863	0	1735	0
Flt Permitted					0.964	
Satd. Flow (perm)	0	1863	1863	0	1735	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		305	332		317	
Travel Time (s)		6.9	7.5		7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	464	580	2	9	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	465	582	0	12	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 38.2%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

22: Bickford Dr. & Office Drive

Avon Village Center
2020 Combined Imp. PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	427	534	2	8	3
Future Volume (Veh/h)	1	427	534	2	8	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	464	580	2	9	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			332			
pX, platoon unblocked	0.99				0.99	0.99
vC, conflicting volume	582				1047	581
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	574				1043	573
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	99
cM capacity (veh/h)	990				252	514
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	465	582	12			
Volume Left	1	0	9			
Volume Right	0	2	3			
cSH	990	1700	288			
Volume to Capacity	0.00	0.34	0.04			
Queue Length 95th (ft)	0	0	3			
Control Delay (s)	0.0	0.0	18.0			
Lane LOS	A		C			
Approach Delay (s)	0.0	0.0	18.0			
Approach LOS			C			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization		38.2%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center

2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	22	106	96	60	25	104	690	19	31	881	373
Future Volume (vph)	280	22	106	96	60	25	104	690	19	31	881	373
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	100		0	100		100
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	50			25			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.876			0.956			0.996			0.994	0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1632	0	1770	1781	0	1770	1855	0	1770	1759	1504
Flt Permitted	0.697			0.626			0.076			0.201		
Satd. Flow (perm)	1298	1632	0	1166	1781	0	142	1855	0	374	1759	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		115			23			3			4	171
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		332			231			526			680	
Travel Time (s)		7.5			5.3			12.0			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	304	24	115	104	65	27	113	750	21	34	958	405
Shared Lane Traffic (%)												10%
Lane Group Flow (vph)	304	139	0	104	92	0	113	771	0	34	999	364
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		2
Detector Phase	4	4		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		3.0	25.0		3.0	25.0	25.0
Minimum Split (s)	29.0	29.0		29.0	29.0		7.0	29.0		7.0	29.0	29.0
Total Split (s)	29.0	29.0		29.0	29.0		7.0	54.0		7.0	54.0	54.0
Total Split (%)	32.2%	32.2%		32.2%	32.2%		7.8%	60.0%		7.8%	60.0%	60.0%
Maximum Green (s)	25.0	25.0		25.0	25.0		3.0	50.0		3.0	50.0	50.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	5.0
Recall Mode	Min	Min		Min	Min		None	Min		None	Min	Min
Act Effct Green (s)	25.0	25.0		25.0	25.0		54.6	52.8		53.0	50.0	50.0
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.61	0.59		0.59	0.56	0.56
v/c Ratio	0.84	0.26		0.32	0.18		0.81	0.71		0.13	1.02	0.40
Control Delay	53.4	8.6		29.2	20.0		52.5	18.4		7.4	55.8	7.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	53.4	8.6		29.2	20.0		52.5	18.4		7.4	55.8	7.1
LOS	D	A		C	B		D	B		A	E	A
Approach Delay		39.3			24.9			22.8			42.0	
Approach LOS		D			C			C			D	

Lanes, Volumes, Timings

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center

2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	163	10		47	29		23	311		7	~603	54
Queue Length 95th (ft)	#307	54		92	67		#80	463		17	#892	114
Internal Link Dist (ft)		252			151			446			600	
Turn Bay Length (ft)	200						100			100		100
Base Capacity (vph)	360	536		323	511		140	1089		266	979	911
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.84	0.26		0.32	0.18		0.81	0.71		0.13	1.02	0.40

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 34.6

Intersection LOS: C

Intersection Capacity Utilization 114.7%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

 Ø1	 Ø2	 Ø4
7 s	54 s	29 s
 Ø5	 Ø6	
7 s	54 s	

HCM Signalized Intersection Capacity Analysis

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center
2020 Combined Imp. PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	22	106	96	60	25	104	690	19	31	881	373
Future Volume (vph)	280	22	106	96	60	25	104	690	19	31	881	373
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.95	0.95
Frt	1.00	0.88		1.00	0.96		1.00	1.00		1.00	0.99	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1632		1770	1781		1770	1855		1770	1759	1504
Flt Permitted	0.70	1.00		0.63	1.00		0.08	1.00		0.20	1.00	1.00
Satd. Flow (perm)	1299	1632		1166	1781		141	1855		374	1759	1504
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)	304	24	115	104	65	27	113	750	21	34	958	405
RTOR Reduction (vph)	0	84	0	0	17	0	0	1	0	0	2	75
Lane Group Flow (vph)	304	55	0	104	75	0	113	770	0	34	997	289
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		2
Actuated Green, G (s)	25.0	25.0		25.0	25.0		55.8	52.8		53.4	51.6	51.6
Effective Green, g (s)	25.0	25.0		25.0	25.0		55.8	52.8		53.4	51.6	51.6
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.61	0.58		0.58	0.56	0.56
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	5.0
Lane Grp Cap (vph)	354	445		318	486		139	1069		245	990	847
v/s Ratio Prot		0.03			0.04		c0.03	0.41		0.00	c0.57	
v/s Ratio Perm	c0.23			0.09			0.47			0.08		0.19
v/c Ratio	0.86	0.12		0.33	0.15		0.81	0.72		0.14	1.01	0.34
Uniform Delay, d1	31.6	25.1		26.6	25.3		21.3	14.0		11.4	20.0	10.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	19.8	0.3		1.3	0.3		27.8	3.0		0.1	30.4	0.5
Delay (s)	51.4	25.3		27.8	25.6		49.1	17.0		11.5	50.4	11.3
Level of Service	D	C		C	C		D	B		B	D	B
Approach Delay (s)		43.2			26.8			21.1			39.3	
Approach LOS		D			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			33.5				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			91.6				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			114.7%				ICU Level of Service			H		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
 24: Routes 10/202 (Simsbury Road) & Site Driveway #8

Avon Village Center
 2020 Combined Imp. PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	16	16	802	1080	7
Future Volume (vph)	11	16	16	802	1080	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.921				0.999	
Flt Protected	0.980			0.999		
Satd. Flow (prot)	1681	0	0	1861	1861	0
Flt Permitted	0.980			0.999		
Satd. Flow (perm)	1681	0	0	1861	1861	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	357			1053	526	
Travel Time (s)	8.1			23.9	12.0	
Confl. Peds. (#/hr)			3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	17	17	872	1174	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	889	1182	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 67.3%	ICU Level of Service C					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

24: Routes 10/202 (Simsbury Road) & Site Driveway #8

Avon Village Center
2020 Combined Imp. PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	16	16	802	1080	7
Future Volume (Veh/h)	11	16	16	802	1080	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	17	17	872	1174	8
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					526	
pX, platoon unblocked	0.43	0.43	0.43			
vC, conflicting volume	2087	1181	1185			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2849	767	776			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	90	95			
cM capacity (veh/h)	8	175	365			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	29	889	1182			
Volume Left	12	17	0			
Volume Right	17	0	8			
cSH	18	365	1700			
Volume to Capacity	1.64	0.05	0.70			
Queue Length 95th (ft)	102	4	0			
Control Delay (s)	763.1	1.7	0.0			
Lane LOS	F	A				
Approach Delay (s)	763.1	1.7	0.0			
Approach LOS	F					
Intersection Summary						
Average Delay		11.3				
Intersection Capacity Utilization		67.3%		ICU Level of Service		C
Analysis Period (min)		15				

Lanes, Volumes, Timings
25: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Combined Imp. PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	2	11	8	2	3	23	729	6	2	1034	60
Future Volume (vph)	50	2	11	8	2	3	23	729	6	2	1034	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976			0.971			0.999			0.993	
Flt Protected		0.962			0.969			0.998				
Satd. Flow (prot)	0	1749	0	0	1753	0	0	1857	0	0	1850	0
Flt Permitted		0.962			0.969			0.998				
Satd. Flow (perm)	0	1749	0	0	1753	0	0	1857	0	0	1850	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		582			275			237			1053	
Travel Time (s)		13.2			6.3			5.4			23.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	2	12	9	2	3	25	792	7	2	1124	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	14	0	0	824	0	0	1191	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 70.2%	ICU Level of Service C											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

25: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Combined Imp. PM

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	50	2	11	8	2	3	23	729	6	2	1034	60								
Future Volume (Veh/h)	50	2	11	8	2	3	23	729	6	2	1034	60								
Sign Control		Stop			Stop			Free			Free									
Grade		0%			0%			0%			0%									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92								
Hourly flow rate (vph)	54	2	12	9	2	3	25	792	7	2	1124	65								
Pedestrians																				
Lane Width (ft)																				
Walking Speed (ft/s)																				
Percent Blockage																				
Right turn flare (veh)																				
Median type								None			None									
Median storage veh																				
Upstream signal (ft)								725												
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89										
vC, conflicting volume	2010	2010	1156	2019	2038	796	1189			799										
vC1, stage 1 conf vol																				
vC2, stage 2 conf vol																				
vCu, unblocked vol	2071	2070	1156	2081	2103	711	1189			715										
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1										
tC, 2 stage (s)																				
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2										
p0 queue free %	0	96	95	71	95	99	96			100										
cM capacity (veh/h)	33	46	239	31	44	387	587			791										
Direction, Lane #	EB 1	WB 1	NB 1	SB 1																
Volume Total	68	14	824	1191																
Volume Left	54	9	25	2																
Volume Right	12	3	7	65																
cSH	39	41	587	791																
Volume to Capacity	1.74	0.34	0.04	0.00																
Queue Length 95th (ft)	179	29	3	0																
Control Delay (s)	579.0	134.2	1.2	0.1																
Lane LOS	F	F	A	A																
Approach Delay (s)	579.0	134.2	1.2	0.1																
Approach LOS	F	F																		
Intersection Summary																				
Average Delay			20.2																	
Intersection Capacity Utilization			70.2%	ICU Level of Service						C										
Analysis Period (min)			15																	

Lanes, Volumes, Timings
26: Woodford Ave & Site Driveway #7

Avon Village Center
2020 Combined Imp. PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	2	3	61	82	3
Future Volume (vph)	2	2	3	61	82	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.996	
Flt Protected	0.976			0.998		
Satd. Flow (prot)	1694	0	0	1859	1855	0
Flt Permitted	0.976			0.998		
Satd. Flow (perm)	1694	0	0	1859	1855	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			205	88	
Travel Time (s)	4.0			4.7	2.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	2	3	66	89	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	69	92	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 15.7%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

26: Woodford Ave & Site Driveway #7

Avon Village Center
2020 Combined Imp. PM

									
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations									
Traffic Volume (veh/h)	2	2	3	61	82	3			
Future Volume (Veh/h)	2	2	3	61	82	3			
Sign Control	Stop			Free	Free				
Grade	0%			0%	0%				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Hourly flow rate (vph)	2	2	3	66	89	3			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type				None	None				
Median storage veh									
Upstream signal (ft)									
pX, platoon unblocked									
vC, conflicting volume	162	90	92						
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	162	90	92						
tC, single (s)	6.4	6.2	4.1						
tC, 2 stage (s)									
tF (s)	3.5	3.3	2.2						
p0 queue free %	100	100	100						
cM capacity (veh/h)	827	967	1503						
Direction, Lane #	EB 1	NB 1	SB 1						
Volume Total	4	69	92						
Volume Left	2	3	0						
Volume Right	2	0	3						
cSH	891	1503	1700						
Volume to Capacity	0.00	0.00	0.05						
Queue Length 95th (ft)	0	0	0						
Control Delay (s)	9.1	0.3	0.0						
Lane LOS	A	A							
Approach Delay (s)	9.1	0.3	0.0						
Approach LOS	A								
Intersection Summary									
Average Delay		0.4							
Intersection Capacity Utilization		15.7%	ICU Level of Service	A					
Analysis Period (min)		15							

Appendix E

Intersection Capacity Analysis Worksheets 2020 Background Traffic Volumes Saturday Midday Peak Hour

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center

2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	692	325	34	820	41	390	104	49	30	106	70
Future Volume (vph)	100	692	325	34	820	41	390	104	49	30	106	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		0	300		0	325		0	0		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.993			0.952				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3514	0	3433	1773	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3514	0	3433	1773	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			353		6			30				139
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		760			1201			448			547	
Travel Time (s)		17.3			27.3			10.2			12.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	752	353	37	891	45	424	113	53	33	115	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	752	353	37	936	0	424	166	0	33	115	76
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Detector Phase	1	6	6	5	2		7 4	7 8		4	8	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	20.0					3.0	5.0	3.0
Minimum Split (s)	9.1	22.0	22.0	9.5	27.0					7.0	26.7	9.1
Total Split (s)	13.0	35.7	35.7	10.2	32.9					7.0	26.7	13.0
Total Split (%)	14.4%	39.7%	39.7%	11.3%	36.6%					7.8%	29.7%	14.4%
Maximum Green (s)	6.9	28.7	28.7	4.1	25.9					3.0	21.0	6.9
Yellow Time (s)	3.1	5.0	5.0	3.1	5.0					3.0	3.3	3.1
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0					1.0	2.4	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Lost Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes	Yes
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Recall Mode	None	C-Min	C-Min	None	C-Min					None	None	None
Walk Time (s)											20.0	
Flash Dont Walk (s)											1.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)	10.3	40.4	40.4	7.5	32.8		15.1	21.9		4.5	9.6	25.6
Actuated g/C Ratio	0.11	0.45	0.45	0.08	0.36		0.17	0.24		0.05	0.11	0.28
v/c Ratio	0.54	0.47	0.39	0.25	0.73		0.74	0.37		0.38	0.58	0.14
Control Delay	47.0	20.5	3.9	42.1	30.0		45.1	24.5		57.0	49.4	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	47.0	20.5	3.9	42.1	30.0		45.1	24.5		57.0	49.4	0.9

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background Sat.

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	8.5
Total Split (s)	10.4
Total Split (%)	12%
Maximum Green (s)	6.9
Yellow Time (s)	3.0
All-Red Time (s)	0.5
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	1.5
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	C	A	D	C		D	C		E	D	A
Approach Delay		18.1			30.5			39.3			34.1	
Approach LOS		B			C			D			C	
Queue Length 50th (ft)	59	164	0	20	233		121	63		19	63	0
Queue Length 95th (ft)	108	249	57	49	#384		#190	112		#65	112	4
Internal Link Dist (ft)		680			1121			368			467	
Turn Bay Length (ft)	285			300			325					
Base Capacity (vph)	204	1587	904	148	1282		586	666		88	434	551
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.53	0.47	0.39	0.25	0.73		0.72	0.25		0.38	0.26	0.14

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 27.5

Intersection LOS: C

Intersection Capacity Utilization 65.2%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4	 Ø7	 Ø8
13 s	32.9 s	7 s	10.4 s	26.7 s
 Ø5	 Ø6 (R)			
10.2 s	35.7 s			

Lane Group	Ø7
LOS	
Approach Delay	
Approach LOS	
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	

HCM Signalized Intersection Capacity Analysis

1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	692	325	34	820	41	390	104	49	30	106	70
Future Volume (vph)	100	692	325	34	820	41	390	104	49	30	106	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	7.0	7.0	6.1	7.0		3.5	3.5		4.0	5.7	6.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3514		3433	1774		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3514		3433	1774		1770	1863	1583
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)	109	752	353	37	891	45	424	113	53	33	115	76
RTOR Reduction (vph)	0	0	204	0	4	0	0	23	0	0	0	59
Lane Group Flow (vph)	109	752	149	37	932	0	424	143	0	33	115	17
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Actuated Green, G (s)	10.3	37.9	37.9	5.1	32.7		15.1	19.7		4.5	9.6	19.9
Effective Green, g (s)	10.3	37.9	37.9	5.1	32.7		11.1	19.7		4.5	9.6	19.9
Actuated g/C Ratio	0.11	0.42	0.42	0.06	0.36		0.12	0.22		0.05	0.11	0.22
Clearance Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Lane Grp Cap (vph)	202	1490	666	100	1276		423	388		88	198	350
v/s Ratio Prot	c0.06	c0.21		0.02	c0.27		c0.12	0.08		0.02	c0.06	0.01
v/s Ratio Perm			0.09									0.01
v/c Ratio	0.54	0.50	0.22	0.37	0.73		1.00	0.37		0.38	0.58	0.05
Uniform Delay, d1	37.6	19.2	16.6	40.9	24.8		39.5	29.9		41.4	38.3	27.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	1.2	0.8	2.3	3.7		44.3	0.2		1.0	2.8	0.0
Delay (s)	39.0	20.4	17.4	43.2	28.5		83.8	30.1		42.4	41.1	27.6
Level of Service	D	C	B	D	C		F	C		D	D	C
Approach Delay (s)		21.2			29.1			68.7			36.7	
Approach LOS		C			C			E			D	
Intersection Summary												
HCM 2000 Control Delay			34.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)				26.3		
Intersection Capacity Utilization			65.2%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1029	26	31	1205	15	32	5	38	13	0	30
Future Volume (vph)	35	1029	26	31	1205	15	32	5	38	13	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	130		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.998			0.866			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3525	0	1770	3532	0	1770	1613	0	1770	1583	0
Flt Permitted	0.167			0.216			0.736			0.727		
Satd. Flow (perm)	311	3525	0	402	3532	0	1371	1613	0	1354	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			2			41			210	
Link Speed (mph)		30			30			15			30	
Link Distance (ft)		715			1559			277			139	
Travel Time (s)		16.3			35.4			12.6			3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	1118	28	34	1310	16	35	5	41	14	0	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	1146	0	34	1326	0	35	46	0	14	33	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Detector Phase	1	6		5	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	8.1	21.2		8.0	21.2		11.5	11.5		11.5	11.5	
Total Split (s)	12.0	44.0		12.0	44.0		24.0	24.0		24.0	24.0	
Total Split (%)	15.0%	55.0%		15.0%	55.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	7.9	37.8		8.0	37.8		18.5	18.5		18.5	18.5	
Yellow Time (s)	3.1	4.3		3.0	4.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.9		1.0	1.9		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Act Effct Green (s)	62.4	57.8		62.4	57.7		7.9	7.9		7.9	7.9	
Actuated g/C Ratio	0.78	0.72		0.78	0.72		0.10	0.10		0.10	0.10	
v/c Ratio	0.11	0.45		0.08	0.52		0.26	0.23		0.10	0.10	
Control Delay	3.1	7.5		2.8	8.4		37.3	15.5		33.4	0.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	3.1	7.5		2.8	8.4		37.3	15.5		33.4	0.5	
LOS	A	A		A	A		D	B		C	A	
Approach Delay		7.4			8.3			24.9			10.3	
Approach LOS		A			A			C			B	

Lanes, Volumes, Timings
2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	3	144		3	181		17	2		7	0	
Queue Length 95th (ft)	10	219		9	274		42	31		23	0	
Internal Link Dist (ft)		635			1479			197			59	
Turn Bay Length (ft)	150			130								
Base Capacity (vph)	390	2546		455	2547		317	404		313	527	
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	0.10	0.45		0.07	0.52		0.11	0.11		0.04	0.06	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 8.4

Intersection LOS: A

Intersection Capacity Utilization 52.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4
12 s	44 s	24 s
 Ø5	 Ø6 (R)	
12 s	44 s	

HCM Signalized Intersection Capacity Analysis

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center
2020 Background Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1029	26	31	1205	15	32	5	38	13	0	30
Future Volume (vph)	35	1029	26	31	1205	15	32	5	38	13	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.87		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)	1770	3526		1770	3533		1770	1614		1770	1583	
Flt Permitted	0.17	1.00		0.22	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	310	3526		403	3533		1370	1614		1354	1583	
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)	38	1118	28	34	1310	16	35	5	41	14	0	33
RTOR Reduction (vph)	0	1	0	0	1	0	0	38	0	0	30	0
Lane Group Flow (vph)	38	1145	0	34	1325	0	35	8	0	14	3	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Actuated Green, G (s)	57.6	53.9		57.5	53.8		6.7	6.7		6.7	6.7	
Effective Green, g (s)	57.6	53.9		57.5	53.8		6.7	6.7		6.7	6.7	
Actuated g/C Ratio	0.72	0.67		0.72	0.67		0.08	0.08		0.08	0.08	
Clearance Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	290	2375		352	2375		114	135		113	132	
v/s Ratio Prot	c0.01	0.32		0.00	c0.38			0.01			0.00	
v/s Ratio Perm	0.09			0.06			c0.03			0.01		
v/c Ratio	0.13	0.48		0.10	0.56		0.31	0.06		0.12	0.02	
Uniform Delay, d1	4.0	6.3		3.5	6.9		34.5	33.8		33.9	33.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.7		0.1	1.0		1.5	0.2		0.5	0.1	
Delay (s)	4.2	7.0		3.7	7.8		36.0	34.0		34.4	33.7	
Level of Service	A	A		A	A		D	C		C	C	
Approach Delay (s)		6.9			7.7			34.8			33.9	
Approach LOS		A			A			C			C	
Intersection Summary												
HCM 2000 Control Delay			8.6			HCM 2000 Level of Service			A			
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			80.0			Sum of lost time (s)			15.8			
Intersection Capacity Utilization			52.0%			ICU Level of Service			A			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1064	57	13	1203	1	79	1	19	2	0	2
Future Volume (vph)	2	1064	57	13	1203	1	79	1	19	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992							0.850		0.932	
Flt Protected					0.999			0.953			0.976	
Satd. Flow (prot)	0	3511	0	0	3536	0	0	1775	1583	0	1694	0
Flt Permitted		0.954			0.937			0.726			0.862	
Satd. Flow (perm)	0	3349	0	0	3316	0	0	1352	1583	0	1496	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11							85		85	
Link Speed (mph)		30			30			15			30	
Link Distance (ft)		742			715			266			140	
Travel Time (s)		16.9			16.3			12.1			3.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1157	62	14	1308	1	86	1	21	2	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1221	0	0	1323	0	0	87	21	0	4	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	20.6	20.6		20.6	20.6		12.5	12.5	12.5	12.5	12.5	
Total Split (s)	55.0	55.0		55.0	55.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	64.7%	64.7%		64.7%	64.7%		29.4%	29.4%	29.4%	29.4%	29.4%	
Maximum Green (s)	49.4	49.4		49.4	49.4		19.5	19.5	19.5	19.5	19.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.4	1.4		1.4	1.4		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.6			5.6			5.5	5.5		5.5	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		66.3			66.3			11.2	11.2		11.2	
Actuated g/C Ratio		0.78			0.78			0.13	0.13		0.13	
v/c Ratio		0.47			0.51			0.49	0.07		0.01	
Control Delay		5.3			5.7			42.7	0.5		0.0	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		5.3			5.7			42.7	0.5		0.0	
LOS		A			A			D	A		A	
Approach Delay		5.3			5.7			34.5				
Approach LOS		A			A			C				

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	5.0
Total Split (%)	6%
Maximum Green (s)	1.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		112			131			44	0		0	
Queue Length 95th (ft)		190			220			84	0		0	
Internal Link Dist (ft)		662			635			186			60	
Turn Bay Length (ft)												
Base Capacity (vph)		2615			2587			310	428		408	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.47			0.51			0.28	0.05		0.01	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

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

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 6.7

Intersection LOS: A

Intersection Capacity Utilization 59.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

  02 (R)	  03	  04
55 s	5 s	25 s

Lane Group	Ø3
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	

HCM Signalized Intersection Capacity Analysis

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Background Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1064	57	13	1203	1	79	1	19	2	0	2
Future Volume (vph)	2	1064	57	13	1203	1	79	1	19	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6			5.6			5.5	5.5		5.5	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		0.99			1.00			1.00	0.85		0.93	
Flt Protected		1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)		3512			3537			1775	1583		1695	
Flt Permitted		0.95			0.94			0.73	1.00		0.86	
Satd. Flow (perm)		3349			3314			1353	1583		1498	
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)	2	1157	62	14	1308	1	86	1	21	2	0	2
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	19	0	4	0
Lane Group Flow (vph)	0	1218	0	0	1323	0	0	87	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		64.1			64.1			9.8	9.8		9.8	
Effective Green, g (s)		64.1			64.1			9.8	9.8		9.8	
Actuated g/C Ratio		0.75			0.75			0.12	0.12		0.12	
Clearance Time (s)		5.6			5.6			5.5	5.5		5.5	
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		2525			2499			155	182		172	
v/s Ratio Prot												
v/s Ratio Perm		0.36			c0.40			c0.06	0.00		0.00	
v/c Ratio		0.48			0.53			0.56	0.01		0.00	
Uniform Delay, d1		4.0			4.3			35.6	33.3		33.3	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.7			0.8			4.6	0.0		0.0	
Delay (s)		4.7			5.1			40.2	33.3		33.3	
Level of Service		A			A			D	C		C	
Approach Delay (s)		4.7			5.1			38.8			33.3	
Approach LOS		A			A			D			C	
Intersection Summary												
HCM 2000 Control Delay		6.3			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.56										
Actuated Cycle Length (s)		85.0			Sum of lost time (s)			15.1				
Intersection Capacity Utilization		59.4%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	700	52	209	823	248	65	101	130	287	153	170
Future Volume (vph)	174	700	52	209	823	248	65	101	130	287	153	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	300		0	150		150	150		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.990			0.965				0.850		0.921	
Flt Protected	0.950			0.950				0.981		0.950		
Satd. Flow (prot)	1770	3504	0	1770	3415	0	0	1827	1583	3433	1716	0
Flt Permitted	0.950			0.950				0.981		0.950		
Satd. Flow (perm)	1770	3504	0	1770	3415	0	0	1827	1583	3433	1716	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			35				107		30	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		716			742			688			260	
Travel Time (s)		16.3			16.9			15.6			5.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	761	57	227	895	270	71	110	141	312	166	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	189	818	0	227	1165	0	0	181	141	312	351	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	21.0		11.0	21.0		11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	76.0		24.0	87.0		30.0	30.0	24.0	32.0	32.0	
Total Split (%)	8.0%	46.9%		14.8%	53.7%		18.5%	18.5%	14.8%	19.8%	19.8%	
Maximum Green (s)	9.0	70.0		20.0	81.0		26.0	26.0	20.0	28.0	28.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0		0.0	-1.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	1.5	3.0		1.5	3.0		3.0	3.0	1.5	2.5	2.5	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effect Green (s)	15.9	60.5		24.5	69.2			20.9	49.5	39.0	39.0	
Actuated g/C Ratio	0.10	0.37		0.15	0.43			0.13	0.31	0.24	0.24	
v/c Ratio	1.09	0.62		0.85	0.79			0.77	0.25	0.38	0.81	
Control Delay	157.7	43.0		92.9	42.6			88.6	13.2	54.3	67.7	
Queue Delay	0.0	0.0		0.0	0.6			0.0	0.0	0.0	0.0	
Total Delay	157.7	43.0		92.9	43.2			88.6	13.2	54.3	67.7	
LOS	F	D		F	D			F	B	D	E	
Approach Delay		64.5			51.3			55.6			61.4	
Approach LOS		E			D			E			E	

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	~252	376		238	540			188	26	142	323	
Queue Length 95th (ft)	#476	402		#441	554			270	82	207	#582	
Internal Link Dist (ft)		636			662			608			180	
Turn Bay Length (ft)	300			300					150	150		
Base Capacity (vph)	173	1539		267	1745			293	557	827	436	
Starvation Cap Reductn	0	0		0	245			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	1.09	0.53		0.85	0.78			0.62	0.25	0.38	0.81	

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 162

Offset: 23 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 57.6

Intersection LOS: E

Intersection Capacity Utilization 81.8%

ICU Level of Service D

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4	 Ø8
24 s	76 s	32 s	30 s
 Ø5	 Ø6 (R)		
13 s	87 s		

HCM Signalized Intersection Capacity Analysis

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Background Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	700	52	209	823	248	65	101	130	287	153	170
Future Volume (vph)	174	700	52	209	823	248	65	101	130	287	153	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.97	1.00	
Frt	1.00	0.99		1.00	0.97			1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3502		1770	3416			1827	1583	3433	1715	
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3502		1770	3416			1827	1583	3433	1715	
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)	189	761	57	227	895	270	71	110	141	312	166	185
RTOR Reduction (vph)	0	4	0	0	20	0	0	0	77	0	23	0
Lane Group Flow (vph)	189	814	0	227	1145	0	0	181	64	312	328	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Actuated Green, G (s)	15.9	59.6		24.5	68.2			20.9	45.4	39.0	39.0	
Effective Green, g (s)	15.9	60.6		24.5	69.2			20.9	45.4	39.0	39.0	
Actuated g/C Ratio	0.10	0.37		0.15	0.43			0.13	0.28	0.24	0.24	
Clearance Time (s)	4.0	6.0		4.0	6.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	3.0		1.5	3.0			3.0	1.5	2.5	2.5	
Lane Grp Cap (vph)	173	1310		267	1459			235	482	826	412	
v/s Ratio Prot	c0.11	0.23		c0.13	c0.34			c0.10	0.02	0.09	c0.19	
v/s Ratio Perm									0.02			
v/c Ratio	1.09	0.62		0.85	0.78			0.77	0.13	0.38	0.80	
Uniform Delay, d1	73.0	41.3		67.0	40.0			68.2	43.6	51.4	57.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	95.3	2.2		21.2	4.3			14.4	0.0	0.2	9.9	
Delay (s)	168.3	43.6		88.2	44.3			82.6	43.6	51.6	67.7	
Level of Service	F	D		F	D			F	D	D	E	
Approach Delay (s)		67.0			51.4			65.5			60.1	
Approach LOS		E			D			E			E	
Intersection Summary												
HCM 2000 Control Delay			59.1			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			162.0			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			81.8%			ICU Level of Service			D			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
5: Routes 44/202 (West Main Street) & Woodford Ave

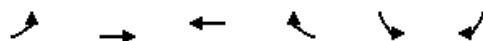
Avon Village Center
2020 Background Sat.

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	 		 	
Traffic Volume (vph)	34	916	1043	15	10	53
Future Volume (vph)	34	916	1043	15	10	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.887	
Flt Protected		0.998			0.992	
Satd. Flow (prot)	0	3532	3532	0	1639	0
Flt Permitted		0.998			0.992	
Satd. Flow (perm)	0	3532	3532	0	1639	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		437	716		273	
Travel Time (s)		9.9	13.9		6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	996	1134	16	11	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1033	1150	0	69	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	60.6%			ICU Level of Service B		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

5: Routes 44/202 (West Main Street) & Woodford Ave

Avon Village Center
2020 Background Sat.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↔	↔↔		↔↔	
Traffic Volume (veh/h)	34	916	1043	15	10	53
Future Volume (Veh/h)	34	916	1043	15	10	53
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	996	1134	16	11	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		437	716			
pX, platoon unblocked	0.73				0.76	0.73
vC, conflicting volume	1150				1714	575
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	460				920	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				94	93
cM capacity (veh/h)	799				196	790
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	369	664	756	394	69	
Volume Left	37	0	0	0	11	
Volume Right	0	0	0	16	58	
cSH	799	1700	1700	1700	533	
Volume to Capacity	0.05	0.39	0.44	0.23	0.13	
Queue Length 95th (ft)	4	0	0	0	11	
Control Delay (s)	1.5	0.0	0.0	0.0	12.8	
Lane LOS	A				B	
Approach Delay (s)	0.5		0.0		12.8	
Approach LOS					B	
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			60.6%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes, Volumes, Timings

Avon Village Center

6: Avon Office Park Drive/Ensign Drive & Routes 44/202 (West Main Street)

2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	923	7	2	1078	16	3	5	5	22	0	39
Future Volume (vph)	35	923	7	2	1078	16	3	5	5	22	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		80
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.998			0.948				0.850
Flt Protected		0.998						0.989			0.950	
Satd. Flow (prot)	0	3445	0	0	3568	0	0	1781	0	0	1752	1599
Flt Permitted		0.883			0.954			0.913			0.889	
Satd. Flow (perm)	0	3048	0	0	3404	0	0	1644	0	0	1640	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3			5				109
Link Speed (mph)		35			35			25			30	
Link Distance (ft)		1379			437			348			1535	
Travel Time (s)		26.9			8.5			9.5			34.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	0%	0%	0%	3%	0%	1%
Adj. Flow (vph)	38	1003	8	2	1172	17	3	5	5	24	0	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1049	0	0	1191	0	0	13	0	0	24	42
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Detector Phase	1	1 2 3		2 3	2 3		4	4		4	4	4
Switch Phase												
Minimum Initial (s)	5.0						7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	8.0						11.0	11.0		11.0	11.0	11.0
Total Split (s)	9.0						22.0	22.0		22.0	22.0	22.0
Total Split (%)	10.0%						24.4%	24.4%		24.4%	24.4%	24.4%
Maximum Green (s)	6.0						18.0	18.0		18.0	18.0	18.0
Yellow Time (s)	3.0						3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	0.0						1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)							0.0			0.0	0.0	0.0
Total Lost Time (s)							4.0			4.0	4.0	4.0
Lead/Lag	Lead						Lag	Lag		Lag	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0						2.0	2.0		2.0	2.0	2.0
Recall Mode	None						None	None		None	None	None
Act Effct Green (s)		79.1			69.4			7.3			7.3	7.3
Actuated g/C Ratio		0.88			0.77			0.08			0.08	0.08
v/c Ratio		0.39			0.45			0.09			0.18	0.18
Control Delay		1.5			5.6			31.9			41.6	1.7
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		1.5			5.6			31.9			41.6	1.7
LOS		A			A			C			D	A

Lane Group	Ø2	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	6.0
Minimum Split (s)	18.0	12.0
Total Split (s)	46.0	13.0
Total Split (%)	51%	14%
Maximum Green (s)	43.0	7.0
Yellow Time (s)	2.0	4.0
All-Red Time (s)	1.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	3.0
Recall Mode	C-Max	None
Act Effect Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		

Lanes, Volumes, Timings

Avon Village Center

6: Avon Office Park Drive/Ensign Drive & Routes 44/202 (West Main Street)

2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		1.5			5.6			31.9			16.2	
Approach LOS		A			A			C			B	
Queue Length 50th (ft)		38			126			4			13	0
Queue Length 95th (ft)		61			215			22			37	0
Internal Link Dist (ft)		1299			357			268			1455	
Turn Bay Length (ft)												80
Base Capacity (vph)		2735			2625			332			328	407
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.38			0.45			0.04			0.07	0.10

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.45

Intersection Signal Delay: 4.2

Intersection LOS: A

Intersection Capacity Utilization 63.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Avon Office Park Drive/Ensign Drive & Routes 44/202 (West Main Street)

 Ø1	 Ø2 (R)	 Ø3	 Ø4
9 s	46 s	13 s	22 s

Lane Group	Ø2	Ø3
Approach Delay		
Approach LOS		
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		

HCM Signalized Intersection Capacity Analysis

Avon Village Center

6: Avon Office Park Drive/Ensign Drive & Routes 44/202 (West Main Street)

2020 Background Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	923	7	2	1078	16	3	5	5	22	0	39
Future Volume (vph)	35	923	7	2	1078	16	3	5	5	22	0	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.0			2.0			4.0			4.0	4.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frt		1.00			1.00			0.95			1.00	0.85
Flt Protected		1.00			1.00			0.99			0.95	1.00
Satd. Flow (prot)		3445			3567			1781			1752	1599
Flt Permitted		0.88			0.95			0.91			0.89	1.00
Satd. Flow (perm)		3048			3404			1645			1640	1599
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)	38	1003	8	2	1172	17	3	5	5	24	0	42
RTOR Reduction (vph)	0	0	0	0	1	0	0	5	0	0	0	40
Lane Group Flow (vph)	0	1049	0	0	1190	0	0	8	0	0	24	2
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%	0%	0%	0%	3%	0%	1%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Actuated Green, G (s)		72.5			63.8			4.5			4.5	4.5
Effective Green, g (s)		74.5			64.8			4.5			4.5	4.5
Actuated g/C Ratio		0.83			0.72			0.05			0.05	0.05
Clearance Time (s)								4.0			4.0	4.0
Vehicle Extension (s)								2.0			2.0	2.0
Lane Grp Cap (vph)		2565			2450			82			82	79
v/s Ratio Prot		c0.04										
v/s Ratio Perm		0.29			c0.35			0.01			c0.01	0.00
v/c Ratio		0.41			0.49			0.10			0.29	0.03
Uniform Delay, d1		2.0			5.4			40.8			41.2	40.7
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.1			0.2			0.2			0.7	0.0
Delay (s)		2.1			5.6			41.0			41.9	40.7
Level of Service		A			A			D			D	D
Approach Delay (s)		2.1			5.6			41.0			41.2	
Approach LOS		A			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			5.2									
HCM 2000 Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			90.0									
Intersection Capacity Utilization			63.8%									
Analysis Period (min)			15									
c Critical Lane Group												

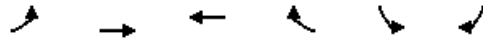
Lanes, Volumes, Timings
7: Routes 44/202 (West Main Street) & Climax Road

Avon Village Center
2020 Background Sat.

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	900	1055	65	65	71
Future Volume (vph)	77	900	1055	65	65	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	75
Storage Lanes	1			0	1	1
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.991			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3507	0	1770	1583
Flt Permitted	0.203				0.950	
Satd. Flow (perm)	378	3539	3507	0	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			11			77
Link Speed (mph)		30	30		30	
Link Distance (ft)		2388	1379		825	
Travel Time (s)		54.3	31.3		18.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	978	1147	71	71	77
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	978	1218	0	71	77
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2					4
Detector Phase	1	2	2		4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0		7.0	7.0
Minimum Split (s)	8.1	22.3	22.3		11.5	11.5
Total Split (s)	11.0	66.0	66.0		23.0	23.0
Total Split (%)	11.0%	66.0%	66.0%		23.0%	23.0%
Maximum Green (s)	7.9	58.7	58.7		18.5	18.5
Yellow Time (s)	3.0	4.2	4.2		3.0	3.0
All-Red Time (s)	0.1	3.1	3.1		1.5	1.5
Lost Time Adjust (s)	0.0	-1.2	-1.2		0.0	0.0
Total Lost Time (s)	3.1	6.1	6.1		4.5	4.5
Lead/Lag	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	1.5	1.5		2.0	2.0
Recall Mode	None	C-Max	C-Max		None	None
Act Effct Green (s)	83.2	76.0	76.0		9.0	9.0
Actuated g/C Ratio	0.83	0.76	0.76		0.09	0.09
v/c Ratio	0.21	0.36	0.46		0.45	0.36
Control Delay	1.7	6.1	6.7		51.6	14.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	1.7	6.1	6.7		51.6	14.8
LOS	A	A	A		D	B
Approach Delay		5.8	6.7		32.4	
Approach LOS		A	A		C	

Lanes, Volumes, Timings
 7: Routes 44/202 (West Main Street) & Climax Road

Avon Village Center
 2020 Background Sat.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 50th (ft)	0	219	154		44	0
Queue Length 95th (ft)	m0	275	233		86	42
Internal Link Dist (ft)		2308	1299		745	
Turn Bay Length (ft)	125					75
Base Capacity (vph)	428	2691	2669		327	355
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.20	0.36	0.46		0.22	0.22

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 7.9
 Intersection Capacity Utilization 53.5%
 Analysis Period (min) 15
 m Volume for 95th percentile queue is metered by upstream signal.

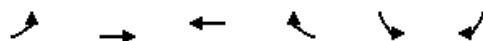
Splits and Phases: 7: Routes 44/202 (West Main Street) & Climax Road



HCM Signalized Intersection Capacity Analysis

7: Routes 44/202 (West Main Street) & Climax Road

Avon Village Center
2020 Background Sat.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	900	1055	65	65	71
Future Volume (vph)	77	900	1055	65	65	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.1	6.1	6.1		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3508		1770	1583
Flt Permitted	0.20	1.00	1.00		0.95	1.00
Satd. Flow (perm)	378	3539	3508		1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	978	1147	71	71	77
RTOR Reduction (vph)	0	0	3	0	0	71
Lane Group Flow (vph)	84	978	1215	0	71	6
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2					4
Actuated Green, G (s)	77.5	72.1	72.1		7.6	7.6
Effective Green, g (s)	77.5	73.3	73.3		7.6	7.6
Actuated g/C Ratio	0.78	0.73	0.73		0.08	0.08
Clearance Time (s)	3.1	7.3	7.3		4.5	4.5
Vehicle Extension (s)	3.0	1.5	1.5		2.0	2.0
Lane Grp Cap (vph)	368	2594	2571		134	120
v/s Ratio Prot	c0.01	0.28	c0.35		c0.04	
v/s Ratio Perm	0.16					0.00
v/c Ratio	0.23	0.38	0.47		0.53	0.05
Uniform Delay, d1	3.1	4.9	5.5		44.5	42.8
Progression Factor	0.44	1.03	1.00		1.00	1.00
Incremental Delay, d2	0.3	0.4	0.6		1.7	0.1
Delay (s)	1.7	5.4	6.1		46.2	42.9
Level of Service	A	A	A		D	D
Approach Delay (s)		5.1	6.1		44.5	
Approach LOS		A	A		D	
Intersection Summary						
HCM 2000 Control Delay			8.0		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.46			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	13.7
Intersection Capacity Utilization			53.5%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1045	34	17	1048	16	44	1	11	17	0	17
Future Volume (vph)	19	1045	34	17	1048	16	44	1	11	17	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.998				0.850		0.932	
Flt Protected		0.999			0.999			0.953			0.976	
Satd. Flow (prot)	0	3518	0	0	3529	0	0	1775	1583	0	1694	0
Flt Permitted		0.917			0.935			0.854			0.822	
Satd. Flow (perm)	0	3229	0	0	3303	0	0	1591	1583	0	1427	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			3				70		70	
Link Speed (mph)		30			30			30			25	
Link Distance (ft)		748			2388			132			279	
Travel Time (s)		17.0			54.3			3.0			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	1136	37	18	1139	17	48	1	12	18	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1194	0	0	1174	0	0	49	12	0	36	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		1	1 2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	20.4	20.4		11.0			9.3	9.3	9.3	9.3	9.3	
Total Split (s)	64.0	64.0		11.0			25.0	25.0	25.0	25.0	25.0	
Total Split (%)	64.0%	64.0%		11.0%			25.0%	25.0%	25.0%	25.0%	25.0%	
Maximum Green (s)	58.6	58.6		7.0			20.7	20.7	20.7	20.7	20.7	
Yellow Time (s)	4.1	4.1		3.0			3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.3	1.3		1.0			1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0						0.0	0.0		0.0	
Total Lost Time (s)		5.4						4.3	4.3		4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None			None	None	None	None	None	
Act Effct Green (s)		65.4			80.6			9.1	9.1		9.1	
Actuated g/C Ratio		0.65			0.81			0.09	0.09		0.09	
v/c Ratio		0.57			0.44			0.34	0.06		0.19	
Control Delay		12.3			2.7			48.0	0.5		4.6	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		12.3			2.7			48.0	0.5		4.6	
LOS		B			A			D	A		A	
Approach Delay		12.3			2.7			38.7			4.6	
Approach LOS		B			A			D			A	
Queue Length 50th (ft)		225			72			30	0		0	
Queue Length 95th (ft)		311			116			64	0		9	
Internal Link Dist (ft)		668			2308			52			199	

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		2113			2694			329	383		350	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.57			0.44			0.15	0.03		0.10	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

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

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 8.3

Intersection LOS: A

Intersection Capacity Utilization 60.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)



HCM Signalized Intersection Capacity Analysis

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Background Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1045	34	17	1048	16	44	1	11	17	0	17
Future Volume (vph)	19	1045	34	17	1048	16	44	1	11	17	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4			4.0			4.3	4.3		4.3	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.93	
Flt Protected		1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)		3520			3529			1776	1583		1695	
Flt Permitted		0.92			0.93			0.85	1.00		0.82	
Satd. Flow (perm)		3231			3301			1591	1583		1428	
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)	21	1136	37	18	1139	17	48	1	12	18	0	18
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	11	0	33	0
Lane Group Flow (vph)	0	1192	0	0	1173	0	0	49	1	0	3	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		64.6			78.4			7.9	7.9		7.9	
Effective Green, g (s)		64.6			78.4			7.9	7.9		7.9	
Actuated g/C Ratio		0.65			0.78			0.08	0.08		0.08	
Clearance Time (s)		5.4						4.3	4.3		4.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		2087			2619			125	125		112	
v/s Ratio Prot					c0.06							
v/s Ratio Perm		c0.37			0.29			c0.03	0.00		0.00	
v/c Ratio		0.57			0.45			0.39	0.01		0.03	
Uniform Delay, d1		9.9			3.6			43.8	42.4		42.5	
Progression Factor		1.00			0.94			1.00	1.00		1.00	
Incremental Delay, d2		1.1			0.1			2.0	0.0		0.1	
Delay (s)		11.1			3.5			45.8	42.5		42.6	
Level of Service		B			A			D	D		D	
Approach Delay (s)		11.1			3.5			45.1			42.6	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			8.8									
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			100.0									
Intersection Capacity Utilization			60.3%									
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
9: Climax Road & Bickford Drive

Avon Village Center
2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	3	22	45	1	18	29	93	20	30	69	3
Future Volume (vph)	8	3	22	45	1	18	29	93	20	30	69	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.910			0.961			0.981			0.996	
Flt Protected		0.988			0.966			0.990			0.985	
Satd. Flow (prot)	0	1675	0	0	1729	0	0	1809	0	0	1827	0
Flt Permitted		0.988			0.966			0.990			0.985	
Satd. Flow (perm)	0	1675	0	0	1729	0	0	1809	0	0	1827	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		690			1373			825			2081	
Travel Time (s)		15.7			31.2			18.8			47.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	3	24	49	1	20	32	101	22	33	75	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	70	0	0	155	0	0	111	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 24.8%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

9: Climax Road & Bickford Drive

Avon Village Center
2020 Background Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	3	22	45	1	18	29	93	20	30	69	3
Future Volume (Veh/h)	8	3	22	45	1	18	29	93	20	30	69	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	3	24	49	1	20	32	101	22	33	75	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								825				
pX, platoon unblocked												
vC, conflicting volume	339	330	76	344	320	112	78			123		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	339	330	76	344	320	112	78			123		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	99	98	91	100	98	98			98		
cM capacity (veh/h)	581	564	985	573	571	941	1520			1464		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	36	70	155	111								
Volume Left	9	49	32	33								
Volume Right	24	20	22	3								
cSH	797	645	1520	1464								
Volume to Capacity	0.05	0.11	0.02	0.02								
Queue Length 95th (ft)	4	9	2	2								
Control Delay (s)	9.7	11.3	1.7	2.4								
Lane LOS	A	B	A	A								
Approach Delay (s)	9.7	11.3	1.7	2.4								
Approach LOS	A	B										
Intersection Summary												
Average Delay			4.5									
Intersection Capacity Utilization			24.8%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
10: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Background Sat.

							Ø1	Ø2
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Lane Configurations								
Traffic Volume (vph)	73	46	398	67	35	421		
Future Volume (vph)	73	46	398	67	35	421		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	0.948		0.981					
Flt Protected	0.970					0.996		
Satd. Flow (prot)	1713	0	1827	0	0	1855		
Flt Permitted	0.970					0.947		
Satd. Flow (perm)	1713	0	1827	0	0	1764		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR)	27		13					
Link Speed (mph)	30		30			30		
Link Distance (ft)	2081		500			483		
Travel Time (s)	47.3		11.4			11.0		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	79	50	433	73	38	458		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	129	0	506	0	0	496		
Turn Type	Prot		NA		D.P+P	NA		
Protected Phases	4		1 2		8	1 2 8	1	2
Permitted Phases					1 2			
Detector Phase	4		1 2		8	1 2 8		
Switch Phase								
Minimum Initial (s)	6.0				2.0		2.0	15.0
Minimum Split (s)	20.0				19.0		19.0	20.0
Total Split (s)	22.0				20.0		20.0	39.0
Total Split (%)	21.8%				19.8%		20%	39%
Maximum Green (s)	18.0				17.0		17.0	35.0
Yellow Time (s)	3.0				2.0		2.0	3.0
All-Red Time (s)	1.0				1.0		1.0	1.0
Lost Time Adjust (s)	0.0							
Total Lost Time (s)	4.0							
Lead/Lag	Lag				Lead		Lag	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes
Vehicle Extension (s)	1.5				2.0		2.0	5.0
Recall Mode	None				None		Min	C-Min
Walk Time (s)	5.0				5.0		5.0	5.0
Flash Dont Walk (s)	11.0				11.0		11.0	11.0
Pedestrian Calls (#/hr)	0				0		0	0
Act Effct Green (s)	10.2		71.3			80.8		
Actuated g/C Ratio	0.10		0.71			0.80		
v/c Ratio	0.65		0.39			0.35		
Control Delay	49.3		8.4			3.2		
Queue Delay	0.0		0.0			0.0		
Total Delay	49.3		8.4			3.2		
LOS	D		A			A		
Approach Delay	49.3		8.4			3.2		
Approach LOS	D		A			A		

Lanes, Volumes, Timings
 10: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
 2020 Background Sat.

	↖	↗	↑	↘	↙	↓		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Queue Length 50th (ft)	64		87			52		
Queue Length 95th (ft)	119		257			111		
Internal Link Dist (ft)	2001		420			403		
Turn Bay Length (ft)								
Base Capacity (vph)	327		1284			1458		
Starvation Cap Reductn	0		0			0		
Spillback Cap Reductn	0		0			0		
Storage Cap Reductn	0		0			0		
Reduced v/c Ratio	0.39		0.39			0.34		

Intersection Summary

Area Type: Other
 Cycle Length: 101
 Actuated Cycle Length: 101
 Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 10.8
 Intersection Capacity Utilization 64.6%
 Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

Splits and Phases: 10: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

↖ Ø8	↕ Ø1	↕ Ø2 (R)	↖ Ø4
20 s	20 s	39 s	22 s

HCM Signalized Intersection Capacity Analysis

10: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Background Sat.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	73	46	398	67	35	421
Future Volume (vph)	73	46	398	67	35	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		3.0			3.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.95		0.98			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1713		1826			1856
Flt Permitted	0.97		1.00			0.95
Satd. Flow (perm)	1713		1826			1764
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	50	433	73	38	458
RTOR Reduction (vph)	24	0	4	0	0	0
Lane Group Flow (vph)	105	0	502	0	0	496
Turn Type	Prot		NA		D,P+P	NA
Protected Phases	4		1 2		8	1 2 8
Permitted Phases					1 2	
Actuated Green, G (s)	10.2		70.4			79.8
Effective Green, g (s)	10.2		70.4			79.8
Actuated g/C Ratio	0.10		0.70			0.79
Clearance Time (s)	4.0					
Vehicle Extension (s)	1.5					
Lane Grp Cap (vph)	172		1272			1402
v/s Ratio Prot	c0.06		c0.27			c0.03
v/s Ratio Perm						0.25
v/c Ratio	0.61		0.39			0.35
Uniform Delay, d1	43.5		6.4			3.1
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	4.1		0.1			0.1
Delay (s)	47.6		6.5			3.1
Level of Service	D		A			A
Approach Delay (s)	47.6		6.5			3.1
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			9.7		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.43			
Actuated Cycle Length (s)			101.0		Sum of lost time (s)	14.0
Intersection Capacity Utilization			64.6%		ICU Level of Service	C
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings
11: Ensign Drive & Bickford Drive

Avon Village Center
2020 Background Sat.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	48	5	10	46	56	54
Future Volume (vph)	48	5	10	46	56	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988				0.934	
Flt Protected	0.956			0.991		
Satd. Flow (prot)	1759	0	0	1846	1740	0
Flt Permitted	0.956			0.991		
Satd. Flow (perm)	1759	0	0	1846	1740	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1373			1535	767	
Travel Time (s)	31.2			34.9	17.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	5	11	50	61	59
Shared Lane Traffic (%)						
Lane Group Flow (vph)	57	0	0	61	120	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 19.6%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

11: Ensign Drive & Bickford Drive

Avon Village Center

2020 Background Sat.

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	5	10	46	56	54
Future Volume (Veh/h)	48	5	10	46	56	54
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	5	11	50	61	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	162	90	120			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	162	90	120			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	99	99			
cM capacity (veh/h)	822	967	1468			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	57	61	120			
Volume Left	52	11	0			
Volume Right	5	0	59			
cSH	833	1468	1700			
Volume to Capacity	0.07	0.01	0.07			
Queue Length 95th (ft)	5	1	0			
Control Delay (s)	9.6	1.4	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.6	1.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			19.6%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
12: Ensign Drive & Fisher Drive

Avon Village Center
2020 Background Sat.

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	12	98	18	13	81
Future Volume (vph)	4	12	98	18	13	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.897				0.884	
Flt Protected				0.960	0.993	
Satd. Flow (prot)	1671	0	0	1788	1635	0
Flt Permitted				0.960	0.993	
Satd. Flow (perm)	1671	0	0	1788	1635	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	465			1098	767	
Travel Time (s)	10.6			25.0	17.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	13	107	20	14	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	0	127	102	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 25.4%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

12: Ensign Drive & Fisher Drive

Avon Village Center
2020 Background Sat.

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	4	12	98	18	13	81
Future Volume (Veh/h)	4	12	98	18	13	81
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	13	107	20	14	88
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1098		
pX, platoon unblocked						
vC, conflicting volume			17		244	10
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			17		244	10
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		98	92
cM capacity (veh/h)			1600		694	1071
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	17	127	102			
Volume Left	0	107	14			
Volume Right	13	0	88			
cSH	1700	1600	996			
Volume to Capacity	0.01	0.07	0.10			
Queue Length 95th (ft)	0	5	9			
Control Delay (s)	0.0	6.3	9.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	6.3	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay			7.0			
Intersection Capacity Utilization			25.4%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings

13: Routes 10/202 (Simsbury Road) & Fisher Drive/Mountain View Ave

Avon Village Center

2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	10	10	102	28	13	16	492	33	9	529	72
Future Volume (vph)	65	10	10	102	28	13	16	492	33	9	529	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	125		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			50			50		
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
Frt		0.984			0.952			0.991			0.982	
Flt Protected		0.963		0.950			0.950			0.950		
Satd. Flow (prot)	0	1765	0	1770	1773	0	1770	1846	0	1770	1829	0
Flt Permitted		0.800		0.735			0.150			0.221		
Satd. Flow (perm)	0	1466	0	1369	1773	0	279	1846	0	412	1829	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			14			6			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1098			228			1601			685	
Travel Time (s)		25.0			5.2			36.4			15.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	11	11	111	30	14	17	535	36	10	575	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	93	0	111	44	0	17	571	0	10	653	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		3.0	25.0		3.0	25.0	
Minimum Split (s)	31.0	31.0		31.0	31.0		8.0	31.0		8.0	31.0	
Total Split (s)	31.0	31.0		31.0	31.0		8.0	31.0		8.0	31.0	
Total Split (%)	44.3%	44.3%		44.3%	44.3%		11.4%	44.3%		11.4%	44.3%	
Maximum Green (s)	27.0	27.0		27.0	27.0		4.0	27.0		4.0	27.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	
Recall Mode	Min	Min		Min	Min		None	Min		None	Min	
Act Effect Green (s)		25.1		25.1	25.1		27.4	26.7		27.4	26.7	
Actuated g/C Ratio		0.41		0.41	0.41		0.45	0.44		0.45	0.44	
v/c Ratio		0.15		0.20	0.06		0.08	0.71		0.04	0.81	
Control Delay		12.1		13.8	9.7		9.4	20.9		9.0	26.2	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		12.1		13.8	9.7		9.4	20.9		9.0	26.2	
LOS		B		B	A		A	C		A	C	
Approach Delay		12.1			12.6			20.6			25.9	
Approach LOS		B			B			C			C	

Lanes, Volumes, Timings

13: Routes 10/202 (Simsbury Road) & Fisher Drive/Mountain View Ave

Avon Village Center

2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		17		24	6		3	153		2	187	
Queue Length 95th (ft)		51		65	26		11	#358		8	#442	
Internal Link Dist (ft)		1018			148			1521			605	
Turn Bay Length (ft)							100			125		
Base Capacity (vph)		654		606	792		222	820		273	815	
Starvation Cap Reductn		0		0	0		0	0		0	0	
Spillback Cap Reductn		0		0	0		0	0		0	0	
Storage Cap Reductn		0		0	0		0	0		0	0	
Reduced v/c Ratio		0.14		0.18	0.06		0.08	0.70		0.04	0.80	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 61.2

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 21.6

Intersection LOS: C

Intersection Capacity Utilization 59.7%

ICU Level of Service B

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 13: Routes 10/202 (Simsbury Road) & Fisher Drive/Mountain View Ave

 Ø1	 Ø2	 Ø4
8 s	31 s	31 s
 Ø5	 Ø6	
8 s	31 s	

HCM Signalized Intersection Capacity Analysis

13: Routes 10/202 (Simsbury Road) & Fisher Drive/Mountain View Ave

Avon Village Center
2020 Background Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	10	10	102	28	13	16	492	33	9	529	72
Future Volume (vph)	65	10	10	102	28	13	16	492	33	9	529	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.98		1.00	0.95		1.00	0.99		1.00	0.98	
Flt Protected		0.96		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1766		1770	1774		1770	1845		1770	1829	
Flt Permitted		0.80		0.74	1.00		0.15	1.00		0.22	1.00	
Satd. Flow (perm)		1467		1369	1774		279	1845		412	1829	
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)	71	11	11	111	30	14	17	535	36	10	575	78
RTOR Reduction (vph)	0	7	0	0	9	0	0	4	0	0	6	0
Lane Group Flow (vph)	0	86	0	111	35	0	17	567	0	10	647	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Actuated Green, G (s)		25.1		25.1	25.1		27.4	26.7		27.4	26.7	
Effective Green, g (s)		25.1		25.1	25.1		27.4	26.7		27.4	26.7	
Actuated g/C Ratio		0.39		0.39	0.39		0.42	0.41		0.42	0.41	
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		5.0		5.0	5.0		1.5	5.0		1.5	5.0	
Lane Grp Cap (vph)		570		532	690		134	763		189	757	
v/s Ratio Prot					0.02		c0.00	0.31		0.00	c0.35	
v/s Ratio Perm		0.06		c0.08			0.05			0.02		
v/c Ratio		0.15		0.21	0.05		0.13	0.74		0.05	0.85	
Uniform Delay, d1		12.8		13.1	12.3		13.2	16.0		12.2	17.1	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3		0.4	0.1		0.2	4.7		0.0	10.1	
Delay (s)		13.0		13.5	12.3		13.4	20.7		12.2	27.3	
Level of Service		B		B	B		B	C		B	C	
Approach Delay (s)		13.0			13.2			20.5			27.0	
Approach LOS		B			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			22.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			64.5			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			59.7%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
14: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Background Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	0	17	2	0	0	13	509	1	0	591	50
Future Volume (vph)	32	0	17	2	0	0	13	509	1	0	591	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.954									0.990	
Flt Protected		0.968			0.950			0.999				
Satd. Flow (prot)	0	1720	0	0	1770	0	0	1861	0	0	1844	0
Flt Permitted		0.968			0.950			0.999				
Satd. Flow (perm)	0	1720	0	0	1770	0	0	1861	0	0	1844	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		578			259			204			1601	
Travel Time (s)		13.1			5.9			4.6			36.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	0	18	2	0	0	14	553	1	0	642	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	2	0	0	568	0	0	696	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 47.3%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

14: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Background Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	0	17	2	0	0	13	509	1	0	591	50
Future Volume (Veh/h)	32	0	17	2	0	0	13	509	1	0	591	50
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	0	18	2	0	0	14	553	1	0	642	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								666				
pX, platoon unblocked	0.97	0.97		0.97	0.97	0.97				0.97		
vC, conflicting volume	1250	1251	669	1268	1278	554	696			554		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1243	1244	669	1262	1271	525	696			526		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	76	100	96	99	100	100	98			100		
cM capacity (veh/h)	145	167	458	135	160	536	900			1011		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	53	2	568	696								
Volume Left	35	2	14	0								
Volume Right	18	0	1	54								
cSH	189	135	900	1011								
Volume to Capacity	0.28	0.01	0.02	0.00								
Queue Length 95th (ft)	27	1	1	0								
Control Delay (s)	31.3	32.0	0.4	0.0								
Lane LOS	D	D	A									
Approach Delay (s)	31.3	32.0	0.4	0.0								
Approach LOS	D	D										
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			47.3%		ICU Level of Service					A		
Analysis Period (min)			15									

Appendix E

Intersection Capacity Analysis Worksheets 2020 Combined Traffic Volumes Saturday Midday Peak Hour

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	991	415	34	1138	41	486	104	49	30	106	70
Future Volume (vph)	100	991	415	34	1138	41	486	104	49	30	106	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		0	300		0	325		0	0		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995			0.952				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3522	0	3433	1773	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3522	0	3433	1773	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			451		4			24				130
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			1189			682			591	
Travel Time (s)		20.0			27.0			15.5			13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	1077	451	37	1237	45	528	113	53	33	115	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	1077	451	37	1282	0	528	166	0	33	115	76
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Detector Phase	1	6	6	5	2		7 4	7 8		4	8	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	20.0					3.0	5.0	3.0
Minimum Split (s)	9.1	22.0	22.0	9.1	27.0					7.0	26.7	9.1
Total Split (s)	13.8	49.1	49.1	10.6	45.9					7.0	26.7	13.8
Total Split (%)	12.5%	44.6%	44.6%	9.6%	41.7%					6.4%	24.3%	12.5%
Maximum Green (s)	7.7	42.1	42.1	4.5	38.9					3.0	21.0	7.7
Yellow Time (s)	3.1	5.0	5.0	3.1	5.0					3.0	3.3	3.1
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0					1.0	2.4	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Lost Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes	Yes
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Recall Mode	None	Min	Min	None	Min					None	None	None
Walk Time (s)											20.0	
Flash Dont Walk (s)											1.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)	7.7	46.5	46.5	4.5	38.9		18.5	27.3		3.0	10.1	23.5
Actuated g/C Ratio	0.08	0.47	0.47	0.05	0.39		0.19	0.28		0.03	0.10	0.24
v/c Ratio	0.80	0.65	0.46	0.46	0.93		0.82	0.33		0.62	0.61	0.16
Control Delay	83.8	24.0	3.6	66.5	41.7		51.4	26.0		94.8	56.3	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	83.8	24.0	3.6	66.5	41.7		51.4	26.0		94.8	56.3	1.6

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Sat.

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	10.1
Total Split (s)	16.6
Total Split (%)	15%
Maximum Green (s)	11.5
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	1.5
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effect Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	C	A	E	D		D	C		F	E	A
Approach Delay		22.3			42.4			45.3			43.4	
Approach LOS		C			D			D			D	
Queue Length 50th (ft)	69	288	0	23	397		166	71		21	71	0
Queue Length 95th (ft)	#171	395	59	#66	#587		#263	127		#75	127	7
Internal Link Dist (ft)		799			1109			602			511	
Turn Bay Length (ft)	285			300			325					
Base Capacity (vph)	137	1659	981	80	1385		640	698		53	394	474
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.80	0.65	0.46	0.46	0.93		0.82	0.24		0.62	0.29	0.16

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 99.2

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 34.5

Intersection LOS: C

Intersection Capacity Utilization 77.7%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

 Ø1	 Ø2	 Ø4	 Ø7	 Ø8
13.8 s	45.9 s	7 s	16.6 s	26.7 s
 Ø5	 Ø6			
10.6 s	49.1 s			

Lane Group	Ø7
LOS	
Approach Delay	
Approach LOS	
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	

HCM Signalized Intersection Capacity Analysis

1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	991	415	34	1138	41	486	104	49	30	106	70
Future Volume (vph)	100	991	415	34	1138	41	486	104	49	30	106	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	7.0	7.0	6.1	7.0		5.1	5.1		4.0	5.7	6.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3521		3433	1774		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3521		3433	1774		1770	1863	1583
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)	109	1077	451	37	1237	45	528	113	53	33	115	76
RTOR Reduction (vph)	0	0	245	0	2	0	0	18	0	0	0	63
Lane Group Flow (vph)	109	1077	206	37	1280	0	528	148	0	33	115	13
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Actuated Green, G (s)	7.7	46.5	46.5	2.6	41.4		18.5	26.7		3.0	10.1	17.8
Effective Green, g (s)	7.7	46.5	46.5	2.6	41.4		14.5	26.7		3.0	10.1	17.8
Actuated g/C Ratio	0.08	0.46	0.46	0.03	0.41		0.14	0.26		0.03	0.10	0.18
Clearance Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Lane Grp Cap (vph)	134	1619	724	45	1434		489	466		52	185	277
v/s Ratio Prot	c0.06	c0.30		0.02	c0.36		c0.15	0.08		0.02	c0.06	0.00
v/s Ratio Perm			0.13									0.00
v/c Ratio	0.81	0.67	0.29	0.82	0.89		1.08	0.32		0.63	0.62	0.05
Uniform Delay, d1	46.2	21.5	17.2	49.3	28.0		43.5	30.1		48.8	43.9	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	28.7	0.9	0.2	70.2	7.9		63.9	0.1		17.1	4.6	0.0
Delay (s)	75.0	22.4	17.3	119.4	36.0		107.4	30.3		65.9	48.5	34.9
Level of Service	E	C	B	F	D		F	C		E	D	C
Approach Delay (s)		24.5			38.3			89.0			46.4	
Approach LOS		C			D			F			D	
Intersection Summary												
HCM 2000 Control Delay			42.0			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			101.6			Sum of lost time (s)				27.9		
Intersection Capacity Utilization			77.7%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1418	26	31	1618	15	32	5	38	13	0	30
Future Volume (vph)	35	1418	26	31	1618	15	32	5	38	13	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	130		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.999			0.866			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3536	0	1770	1613	0	1770	1583	0
Flt Permitted	0.077			0.114			0.736			0.727		
Satd. Flow (perm)	143	3529	0	212	3536	0	1371	1613	0	1354	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			1			41			194	
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		724			1561			285			144	
Travel Time (s)		16.5			35.5			13.0			6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	1541	28	34	1759	16	35	5	41	14	0	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	1569	0	34	1775	0	35	46	0	14	33	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Detector Phase	1	6		5	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	8.1	21.2		8.0	21.2		11.5	11.5		11.5	11.5	
Total Split (s)	12.0	44.0		12.0	44.0		24.0	24.0		24.0	24.0	
Total Split (%)	15.0%	55.0%		15.0%	55.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	7.9	37.8		8.0	37.8		18.5	18.5		18.5	18.5	
Yellow Time (s)	3.1	4.3		3.0	4.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.9		1.0	1.9		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Act Effct Green (s)	62.4	57.8		62.4	57.7		7.9	7.9		7.9	7.9	
Actuated g/C Ratio	0.78	0.72		0.78	0.72		0.10	0.10		0.10	0.10	
v/c Ratio	0.16	0.62		0.12	0.70		0.26	0.23		0.10	0.10	
Control Delay	4.0	9.7		3.3	11.6		37.3	15.5		33.4	0.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	4.0	9.7		3.3	11.6		37.3	15.5		33.4	0.6	
LOS	A	A		A	B		D	B		C	A	
Approach Delay		9.6			11.4			24.9			10.4	
Approach LOS		A			B			C			B	

Lanes, Volumes, Timings
2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	3	240		3	305		17	2		7	0	
Queue Length 95th (ft)	10	362		9	463		42	31		23	0	
Internal Link Dist (ft)		644			1481			205			64	
Turn Bay Length (ft)	150			130								
Base Capacity (vph)	273	2549		323	2550		317	404		313	515	
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	0.14	0.62		0.11	0.70		0.11	0.11		0.04	0.06	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 10.9

Intersection LOS: B

Intersection Capacity Utilization 63.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4
12 s	44 s	24 s
 Ø5	 Ø6 (R)	
12 s	44 s	

HCM Signalized Intersection Capacity Analysis

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1418	26	31	1618	15	32	5	38	13	0	30
Future Volume (vph)	35	1418	26	31	1618	15	32	5	38	13	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.87		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)	1770	3530		1770	3534		1770	1614		1770	1583	
Flt Permitted	0.08	1.00		0.11	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	144	3530		213	3534		1370	1614		1354	1583	
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)	38	1541	28	34	1759	16	35	5	41	14	0	33
RTOR Reduction (vph)	0	1	0	0	0	0	0	38	0	0	30	0
Lane Group Flow (vph)	38	1568	0	34	1775	0	35	8	0	14	3	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Actuated Green, G (s)	57.6	53.9		57.5	53.8		6.7	6.7		6.7	6.7	
Effective Green, g (s)	57.6	53.9		57.5	53.8		6.7	6.7		6.7	6.7	
Actuated g/C Ratio	0.72	0.67		0.72	0.67		0.08	0.08		0.08	0.08	
Clearance Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	178	2378		225	2376		114	135		113	132	
v/s Ratio Prot	c0.01	0.44		0.01	c0.50			0.01			0.00	
v/s Ratio Perm	0.14			0.10			c0.03			0.01		
v/c Ratio	0.21	0.66		0.15	0.75		0.31	0.06		0.12	0.02	
Uniform Delay, d1	6.8	7.7		5.0	8.6		34.5	33.8		33.9	33.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.5		0.3	2.2		1.5	0.2		0.5	0.1	
Delay (s)	7.4	9.1		5.3	10.8		36.0	34.0		34.4	33.7	
Level of Service	A	A		A	B		D	C		C	C	
Approach Delay (s)		9.1			10.7			34.8			33.9	
Approach LOS		A			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			10.8			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			80.0			Sum of lost time (s)			15.8			
Intersection Capacity Utilization			63.4%			ICU Level of Service			B			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1453	57	13	1616	1	79	1	19	2	0	2
Future Volume (vph)	2	1453	57	13	1616	1	79	1	19	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994							0.850		0.932	
Flt Protected								0.953			0.976	
Satd. Flow (prot)	0	3518	0	0	3539	0	0	1775	1583	0	1694	0
Flt Permitted		0.953			0.932			0.726			0.862	
Satd. Flow (perm)	0	3353	0	0	3299	0	0	1352	1583	0	1496	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8							85		85	
Link Speed (mph)		30			30			15			30	
Link Distance (ft)		691			724			207			170	
Travel Time (s)		15.7			16.5			9.4			3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1579	62	14	1757	1	86	1	21	2	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1643	0	0	1772	0	0	87	21	0	4	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	20.6	20.6		20.6	20.6		12.5	12.5	12.5	12.5	12.5	
Total Split (s)	55.0	55.0		55.0	55.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	64.7%	64.7%		64.7%	64.7%		29.4%	29.4%	29.4%	29.4%	29.4%	
Maximum Green (s)	49.4	49.4		49.4	49.4		19.5	19.5	19.5	19.5	19.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.4	1.4		1.4	1.4		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.6			5.6			5.5	5.5		5.5	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		66.3			66.3			11.2	11.2		11.2	
Actuated g/C Ratio		0.78			0.78			0.13	0.13		0.13	
v/c Ratio		0.63			0.69			0.49	0.07		0.01	
Control Delay		7.1			8.3			42.7	0.5		0.0	
Queue Delay		0.1			0.0			0.0	0.0		0.0	
Total Delay		7.2			8.3			42.7	0.5		0.0	
LOS		A			A			D	A		A	
Approach Delay		7.2			8.3			34.5				
Approach LOS		A			A			C				

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	5.0
Total Split (%)	6%
Maximum Green (s)	1.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		190			227			44	0		0	
Queue Length 95th (ft)		321			389			84	0		0	
Internal Link Dist (ft)		611			644			127			90	
Turn Bay Length (ft)												
Base Capacity (vph)		2618			2574			310	428		408	
Starvation Cap Reductn		186			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.68			0.69			0.28	0.05		0.01	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 8.6

Intersection LOS: A

Intersection Capacity Utilization 70.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

   Ø2 (R)	   Ø3	   Ø4
55 s	5 s	25 s

Lane Group	Ø3
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	

HCM Signalized Intersection Capacity Analysis

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1453	57	13	1616	1	79	1	19	2	0	2
Future Volume (vph)	2	1453	57	13	1616	1	79	1	19	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6			5.6			5.5	5.5		5.5	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		0.99			1.00			1.00	0.85		0.93	
Flt Protected		1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)		3519			3538			1775	1583		1695	
Flt Permitted		0.95			0.93			0.73	1.00		0.86	
Satd. Flow (perm)		3355			3299			1353	1583		1498	
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)	2	1579	62	14	1757	1	86	1	21	2	0	2
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	19	0	4	0
Lane Group Flow (vph)	0	1641	0	0	1772	0	0	87	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		64.1			64.1			9.8	9.8		9.8	
Effective Green, g (s)		64.1			64.1			9.8	9.8		9.8	
Actuated g/C Ratio		0.75			0.75			0.12	0.12		0.12	
Clearance Time (s)		5.6			5.6			5.5	5.5		5.5	
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		2530			2487			155	182		172	
v/s Ratio Prot												
v/s Ratio Perm		0.49			c0.54			c0.06	0.00		0.00	
v/c Ratio		0.65			0.71			0.56	0.01		0.00	
Uniform Delay, d1		5.0			5.6			35.6	33.3		33.3	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.3			1.8			4.6	0.0		0.0	
Delay (s)		6.3			7.3			40.2	33.3		33.3	
Level of Service		A			A			D	C		C	
Approach Delay (s)		6.3			7.3			38.8			33.3	
Approach LOS		A			A			D			C	
Intersection Summary												
HCM 2000 Control Delay			7.9									
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			85.0									
Intersection Capacity Utilization			70.8%									
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	1014	90	209	1143	341	106	104	130	361	156	170
Future Volume (vph)	174	1014	90	209	1143	341	106	104	130	361	156	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	300		0	150		150	150		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.988			0.965				0.850		0.922	
Flt Protected	0.950			0.950				0.975		0.950		
Satd. Flow (prot)	1770	3497	0	1770	3415	0	0	1816	1583	3433	1717	0
Flt Permitted	0.950			0.950				0.975		0.950		
Satd. Flow (perm)	1770	3497	0	1770	3415	0	0	1816	1583	3433	1717	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			35				47		29	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		738			691			688			488	
Travel Time (s)		16.8			15.7			15.6			11.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	1102	98	227	1242	371	115	113	141	392	170	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	189	1200	0	227	1613	0	0	228	141	392	355	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	21.0		11.0	21.0		11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	76.0		24.0	87.0		30.0	30.0	24.0	32.0	32.0	
Total Split (%)	8.0%	46.9%		14.8%	53.7%		18.5%	18.5%	14.8%	19.8%	19.8%	
Maximum Green (s)	9.0	70.0		20.0	81.0		26.0	26.0	20.0	28.0	28.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0		0.0	-1.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	1.5	3.0		1.5	3.0		3.0	3.0	1.5	2.5	2.5	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effct Green (s)	11.1	70.8		22.1	81.8			23.9	50.0	28.2	28.2	
Actuated g/C Ratio	0.07	0.44		0.14	0.50			0.15	0.31	0.17	0.17	
v/c Ratio	1.56	0.78		0.94	0.93			0.85	0.27	0.66	1.10	
Control Delay	330.6	43.2		111.8	46.7			94.6	29.3	68.4	134.6	
Queue Delay	0.0	0.0		0.0	45.4			0.0	0.0	0.0	0.0	
Total Delay	330.6	43.2		111.8	92.1			94.6	29.3	68.4	134.6	
LOS	F	D		F	F			F	C	E	F	
Approach Delay		82.3			94.5			69.6			99.8	
Approach LOS		F			F			E			F	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	~307	564		~258	807			235	74	202	~401	
Queue Length 95th (ft)	#476	656		#441	930			#363	136	262	#615	
Internal Link Dist (ft)		658			611			608			408	
Turn Bay Length (ft)	300			300					150	150		
Base Capacity (vph)	121	1536		241	1745			291	521	597	322	
Starvation Cap Reductn	0	0		0	334			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	1.56	0.78		0.94	1.14			0.78	0.27	0.66	1.10	

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 162

Offset: 89 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.56

Intersection Signal Delay: 89.4

Intersection LOS: F

Intersection Capacity Utilization 96.2%

ICU Level of Service F

Analysis Period (min) 15

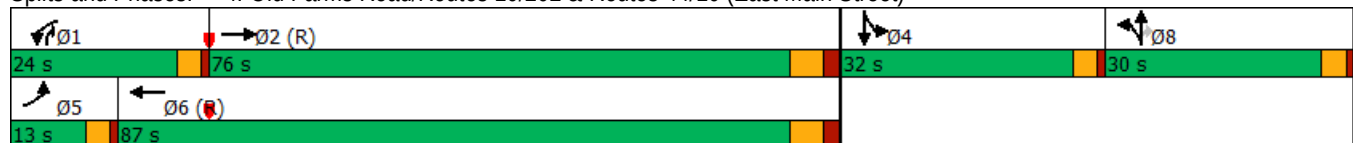
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)



HCM Signalized Intersection Capacity Analysis

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	1014	90	209	1143	341	106	104	130	361	156	170
Future Volume (vph)	174	1014	90	209	1143	341	106	104	130	361	156	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.97	1.00	
Frt	1.00	0.99		1.00	0.97			1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3496		1770	3417			1817	1583	3433	1717	
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3496		1770	3417			1817	1583	3433	1717	
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)	189	1102	98	227	1242	371	115	113	141	392	170	185
RTOR Reduction (vph)	0	4	0	0	17	0	0	0	34	0	24	0
Lane Group Flow (vph)	189	1196	0	227	1596	0	0	228	107	392	331	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Actuated Green, G (s)	11.1	69.8		22.1	80.8			23.9	46.0	28.2	28.2	
Effective Green, g (s)	11.1	70.8		22.1	81.8			23.9	46.0	28.2	28.2	
Actuated g/C Ratio	0.07	0.44		0.14	0.50			0.15	0.28	0.17	0.17	
Clearance Time (s)	4.0	6.0		4.0	6.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	3.0		1.5	3.0			3.0	1.5	2.5	2.5	
Lane Grp Cap (vph)	121	1527		241	1725			268	488	597	298	
v/s Ratio Prot	c0.11	0.34		c0.13	c0.47			c0.13	0.03	0.11	c0.19	
v/s Ratio Perm									0.04			
v/c Ratio	1.56	0.78		0.94	0.93			0.85	0.22	0.66	1.11	
Uniform Delay, d1	75.5	39.0		69.3	37.3			67.3	44.3	62.4	66.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	289.1	4.1		41.7	9.9			21.9	0.1	2.3	85.3	
Delay (s)	364.5	43.1		111.0	47.2			89.2	44.4	64.7	152.2	
Level of Service	F	D		F	D			F	D	E	F	
Approach Delay (s)		86.9			55.1			72.1			106.3	
Approach LOS		F			E			E			F	
Intersection Summary												
HCM 2000 Control Delay			75.5			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			162.0			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			96.2%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
5: Routes 44/202 (West Main Street) & Woodford Ave

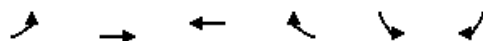
Avon Village Center
2020 Combined Sat.

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	 		 	
Traffic Volume (vph)	34	1265	1401	18	13	53
Future Volume (vph)	34	1265	1401	18	13	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.891	
Flt Protected		0.999			0.990	
Satd. Flow (prot)	0	3536	3532	0	1643	0
Flt Permitted		0.999			0.990	
Satd. Flow (perm)	0	3536	3532	0	1643	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		455	738		205	
Travel Time (s)		10.3	14.4		4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	1375	1523	20	14	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1412	1543	0	72	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 70.1%	ICU Level of Service C					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

5: Routes 44/202 (West Main Street) & Woodford Ave

Avon Village Center
2020 Combined Sat.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↔	↔↔		↔↔	
Traffic Volume (veh/h)	34	1265	1401	18	13	53
Future Volume (Veh/h)	34	1265	1401	18	13	53
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	1375	1523	20	14	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		455	738			
pX, platoon unblocked	0.58				0.65	0.58
vC, conflicting volume	1543				2294	772
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	481				969	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				91	91
cM capacity (veh/h)	624				153	627
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	495	917	1015	528	72	
Volume Left	37	0	0	0	14	
Volume Right	0	0	0	20	58	
cSH	624	1700	1700	1700	391	
Volume to Capacity	0.06	0.54	0.60	0.31	0.18	
Queue Length 95th (ft)	5	0	0	0	17	
Control Delay (s)	1.7	0.0	0.0	0.0	16.3	
Lane LOS	A				C	
Approach Delay (s)	0.6		0.0		16.3	
Approach LOS					C	
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			70.1%		ICU Level of Service	C
Analysis Period (min)			15			

Lanes, Volumes, Timings

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↑		↑	↑	↑
Traffic Volume (vph)	128	963	7	2	1167	285	3	5	5	274	0	126
Future Volume (vph)	128	963	7	2	1167	285	3	5	5	274	0	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		0	0		80
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.999			0.971			0.948				0.850
Flt Protected		0.994						0.989		0.950	0.950	
Satd. Flow (prot)	0	3427	0	0	3464	0	0	1768	0	1681	1681	1583
Flt Permitted		0.558			0.954			0.945		0.749	0.749	
Satd. Flow (perm)	0	1924	0	0	3305	0	0	1689	0	1325	1325	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			65			5				137
Link Speed (mph)		35			35			25			30	
Link Distance (ft)		1357			455			348			203	
Travel Time (s)		26.4			8.9			9.5			4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	139	1047	8	2	1268	310	3	5	5	298	0	137
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	1194	0	0	1580	0	0	13	0	149	149	137
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Detector Phase	1	1 2 3		2 3	2 3		4	4		4	4	4
Switch Phase												
Minimum Initial (s)	5.0						7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	8.0						11.0	11.0		11.0	11.0	11.0
Total Split (s)	9.0						22.0	22.0		22.0	22.0	22.0
Total Split (%)	10.0%						24.4%	24.4%		24.4%	24.4%	24.4%
Maximum Green (s)	6.0						18.0	18.0		18.0	18.0	18.0
Yellow Time (s)	3.0						3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	0.0						1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)								0.0		0.0	0.0	0.0
Total Lost Time (s)								4.0		4.0	4.0	4.0
Lead/Lag	Lead						Lag	Lag		Lag	Lag	Lag
Lead-Lag Optimize?	Yes						Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0						2.0	2.0		2.0	2.0	2.0
Recall Mode	None						None	None		None	None	None
Act Effct Green (s)		68.0			58.7			14.0		14.0	14.0	14.0
Actuated g/C Ratio		0.76			0.65			0.16		0.16	0.16	0.16
v/c Ratio		0.74			0.73			0.05		0.73	0.73	0.38
Control Delay		12.4			12.7			24.2		55.5	55.5	9.0
Queue Delay		0.0			0.0			0.0		0.0	0.0	0.0
Total Delay		12.4			12.7			24.2		55.5	55.5	9.0
LOS		B			B			C		E	E	A

Lanes, Volumes, Timings
6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center
2020 Combined Sat.

Lane Group	Ø2	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	6.0
Minimum Split (s)	18.0	12.0
Total Split (s)	46.0	13.0
Total Split (%)	51%	14%
Maximum Green (s)	43.0	7.0
Yellow Time (s)	2.0	4.0
All-Red Time (s)	1.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	3.0
Recall Mode	C-Max	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		

Lanes, Volumes, Timings

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		12.4			12.7			24.2			40.9	
Approach LOS		B			B			C			D	
Queue Length 50th (ft)		85			284			4		85	85	0
Queue Length 95th (ft)		110			371			19		147	147	47
Internal Link Dist (ft)		1277			375			268			123	
Turn Bay Length (ft)												80
Base Capacity (vph)		1610			2179			341		265	265	426
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		0.74			0.73			0.04		0.56	0.56	0.32

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 16.4

Intersection LOS: B

Intersection Capacity Utilization 96.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

 Ø1	 Ø2 (R)	 Ø3	 Ø4
9 s	46 s	13 s	22 s

Lane Group	Ø2	Ø3
Approach Delay		
Approach LOS		
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		

HCM Signalized Intersection Capacity Analysis

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑			↑↑		↑	↑	↑
Traffic Volume (vph)	128	963	7	2	1167	285	3	5	5	274	0	126
Future Volume (vph)	128	963	7	2	1167	285	3	5	5	274	0	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		2.0			2.0			4.0		4.0	4.0	4.0
Lane Util. Factor		0.95			0.95			1.00		0.95	0.95	1.00
Frt		1.00			0.97			0.95		1.00	1.00	0.85
Flt Protected		0.99			1.00			0.99		0.95	0.95	1.00
Satd. Flow (prot)		3428			3462			1767		1681	1681	1583
Flt Permitted		0.56			0.95			0.94		0.75	0.75	1.00
Satd. Flow (perm)		1925			3304			1688		1326	1326	1583
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)	139	1047	8	2	1268	310	3	5	5	298	0	137
RTOR Reduction (vph)	0	1	0	0	25	0	0	4	0	0	0	116
Lane Group Flow (vph)	0	1193	0	0	1555	0	0	9	0	149	149	21
Heavy Vehicles (%)	2%	1%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3			4			4		4
Actuated Green, G (s)		63.0			54.7			14.0		14.0	14.0	14.0
Effective Green, g (s)		65.0			55.7			14.0		14.0	14.0	14.0
Actuated g/C Ratio		0.72			0.62			0.16		0.16	0.16	0.16
Clearance Time (s)								4.0		4.0	4.0	4.0
Vehicle Extension (s)								2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1545			2044			262		206	206	246
v/s Ratio Prot		c0.08										
v/s Ratio Perm		c0.48			c0.47			0.01		c0.11	0.11	0.01
v/c Ratio		0.77			0.76			0.03		0.72	0.72	0.09
Uniform Delay, d1		7.9			12.4			32.3		36.2	36.2	32.5
Progression Factor		1.74			1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		2.2			1.7			0.0		10.1	10.1	0.1
Delay (s)		15.8			14.1			32.3		46.3	46.3	32.6
Level of Service		B			B			C		D	D	C
Approach Delay (s)		15.8			14.1			32.3			42.0	
Approach LOS		B			B			C			D	
Intersection Summary												
HCM 2000 Control Delay		18.6			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.78										
Actuated Cycle Length (s)		90.0			Sum of lost time (s)			14.0				
Intersection Capacity Utilization		96.2%			ICU Level of Service			F				
Analysis Period (min)		15										
c Critical Lane Group												

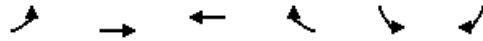
Lanes, Volumes, Timings
7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined Sat.

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	265	906	1075	225	241	232
Future Volume (vph)	265	906	1075	225	241	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11
Storage Length (ft)	125			100	215	300
Storage Lanes	1			0	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	0.95	0.97	1.00
Frt			0.974			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3447	0	3319	1531
Flt Permitted	0.103				0.950	
Satd. Flow (perm)	192	3539	3447	0	3319	1531
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			44			210
Link Speed (mph)		30	30		30	
Link Distance (ft)		2398	1357		443	
Travel Time (s)		54.5	30.8		10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	985	1168	245	262	252
Shared Lane Traffic (%)						
Lane Group Flow (vph)	288	985	1413	0	262	252
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2					4
Detector Phase	1	2	2		4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0		7.0	7.0
Minimum Split (s)	8.0	22.3	22.3		11.5	11.5
Total Split (s)	11.0	56.0	56.0		23.0	23.0
Total Split (%)	12.2%	62.2%	62.2%		25.6%	25.6%
Maximum Green (s)	8.0	48.7	48.7		18.5	18.5
Yellow Time (s)	3.0	4.2	4.2		3.0	3.0
All-Red Time (s)	0.0	3.1	3.1		1.5	1.5
Lost Time Adjust (s)	0.0	-1.2	-1.2		0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1		4.5	4.5
Lead/Lag	Lead	Lag	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes			
Vehicle Extension (s)	3.0	1.5	1.5		1.5	1.5
Recall Mode	None	C-Max	C-Max		None	None
Act Effct Green (s)	68.1	49.9	49.9		11.4	11.4
Actuated g/C Ratio	0.76	0.55	0.55		0.13	0.13
v/c Ratio	0.70	0.50	0.73		0.63	0.67
Control Delay	27.8	13.5	23.4		43.7	17.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	27.8	13.5	23.4		43.7	17.8
LOS	C	B	C		D	B
Approach Delay		16.7	23.4		31.0	

Lanes, Volumes, Timings
7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined Sat.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach LOS		B	C		C	
Queue Length 50th (ft)	80	170	318		74	22
Queue Length 95th (ft)	#237	221	402		107	92
Internal Link Dist (ft)		2318	1277		363	
Turn Bay Length (ft)	125				215	300
Base Capacity (vph)	410	1963	1931		682	481
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.70	0.50	0.73		0.38	0.52

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 22.0

Intersection LOS: C

Intersection Capacity Utilization 70.6%

ICU Level of Service C

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

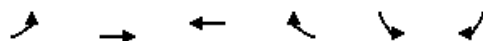
Splits and Phases: 7: Routes 44/202 (West Main Street) & Bickford Dr.



HCM Signalized Intersection Capacity Analysis

7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined Sat.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	265	906	1075	225	241	232
Future Volume (vph)	265	906	1075	225	241	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	11
Total Lost time (s)	3.0	6.1	6.1		4.5	4.5
Lane Util. Factor	1.00	0.95	0.95		0.97	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3447		3319	1531
Flt Permitted	0.10	1.00	1.00		0.95	1.00
Satd. Flow (perm)	192	3539	3447		3319	1531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	985	1168	245	262	252
RTOR Reduction (vph)	0	0	20	0	0	183
Lane Group Flow (vph)	288	985	1393	0	262	69
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2					4
Actuated Green, G (s)	63.8	48.7	48.7		11.4	11.4
Effective Green, g (s)	63.8	49.9	49.9		11.4	11.4
Actuated g/C Ratio	0.71	0.55	0.55		0.13	0.13
Clearance Time (s)	3.0	7.3	7.3		4.5	4.5
Vehicle Extension (s)	3.0	1.5	1.5		1.5	1.5
Lane Grp Cap (vph)	400	1962	1911		420	193
v/s Ratio Prot	c0.12	0.28	c0.40		c0.08	
v/s Ratio Perm	0.39					0.04
v/c Ratio	0.72	0.50	0.73		0.62	0.36
Uniform Delay, d1	18.8	12.4	15.0		37.3	35.9
Progression Factor	1.00	1.00	1.45		1.00	1.00
Incremental Delay, d2	6.1	0.9	1.8		2.1	0.4
Delay (s)	24.9	13.3	23.6		39.3	36.4
Level of Service	C	B	C		D	D
Approach Delay (s)		15.9	23.6		37.9	
Approach LOS		B	C		D	
Intersection Summary						
HCM 2000 Control Delay			22.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.71			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.6
Intersection Capacity Utilization			70.6%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1239	34	17	1231	16	44	1	11	17	0	17
Future Volume (vph)	19	1239	34	17	1231	16	44	1	11	17	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.998				0.850		0.932	
Flt Protected		0.999			0.999			0.953			0.976	
Satd. Flow (prot)	0	3522	0	0	3529	0	0	1775	1583	0	1694	0
Flt Permitted		0.914			0.933			0.850			0.824	
Satd. Flow (perm)	0	3222	0	0	3295	0	0	1583	1583	0	1431	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			3				70		70	
Link Speed (mph)		30			30			15			25	
Link Distance (ft)		769			2398			132			221	
Travel Time (s)		17.5			54.5			6.0			6.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	1347	37	18	1338	17	48	1	12	18	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1405	0	0	1373	0	0	49	12	0	36	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		1	1 2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	21.4	21.4		11.0			20.3	20.3	20.3	20.3	20.3	
Total Split (s)	64.0	64.0		11.0			25.0	25.0	25.0	25.0	25.0	
Total Split (%)	64.0%	64.0%		11.0%			25.0%	25.0%	25.0%	25.0%	25.0%	
Maximum Green (s)	58.6	58.6		7.0			20.7	20.7	20.7	20.7	20.7	
Yellow Time (s)	4.1	4.1		3.0			3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.3	1.3		1.0			1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0						0.0	0.0		0.0	
Total Lost Time (s)		5.4						4.3	4.3		4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None			None	None	None	None	None	
Act Effct Green (s)		64.1			80.5			9.3	9.3		9.3	
Actuated g/C Ratio		0.64			0.80			0.09	0.09		0.09	
v/c Ratio		0.68			0.51			0.34	0.06		0.18	
Control Delay		15.2			3.5			47.6	0.5		4.5	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		15.2			3.5			47.6	0.5		4.5	
LOS		B			A			D	A		A	
Approach Delay		15.2			3.5			38.4			4.5	
Approach LOS		B			A			D			A	
Queue Length 50th (ft)		321			94			30	0		0	
Queue Length 95th (ft)		409			157			64	0		9	
Internal Link Dist (ft)		689			2318			52			141	

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		2068			2686			327	383		351	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.68			0.51			0.15	0.03		0.10	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 13.3 (13%), Referenced to phase 2:EBWB, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 10.0

Intersection LOS: A

Intersection Capacity Utilization 65.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)



HCM Signalized Intersection Capacity Analysis

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1239	34	17	1231	16	44	1	11	17	0	17
Future Volume (vph)	19	1239	34	17	1231	16	44	1	11	17	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4			4.0			4.3	4.3		4.3	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.93	
Flt Protected		1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)		3523			3530			1776	1583		1695	
Flt Permitted		0.91			0.93			0.85	1.00		0.82	
Satd. Flow (perm)		3221			3297			1584	1583		1432	
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)	21	1347	37	18	1338	17	48	1	12	18	0	18
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	11	0	33	0
Lane Group Flow (vph)	0	1403	0	0	1372	0	0	49	1	0	3	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		63.3			78.2			8.1	8.1		8.1	
Effective Green, g (s)		63.3			78.2			8.1	8.1		8.1	
Actuated g/C Ratio		0.63			0.78			0.08	0.08		0.08	
Clearance Time (s)		5.4						4.3	4.3		4.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		2038			2612			128	128		115	
v/s Ratio Prot					c0.08							
v/s Ratio Perm		c0.44			0.33			c0.03	0.00		0.00	
v/c Ratio		0.69			0.53			0.38	0.01		0.03	
Uniform Delay, d1		11.9			4.0			43.6	42.3		42.3	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.9			0.2			1.9	0.0		0.1	
Delay (s)		13.9			4.2			45.5	42.3		42.4	
Level of Service		B			A			D	D		D	
Approach Delay (s)		13.9			4.2			44.9			42.4	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			10.3		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			100.0		Sum of lost time (s)					13.7		
Intersection Capacity Utilization			65.6%		ICU Level of Service					C		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
9: Bickford Dr. & Site Driveway #1/Site Driveway #2

Avon Village Center
2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	0	61	116	0	84	61	310	117	101	295	62
Future Volume (vph)	53	0	61	116	0	84	61	310	117	101	295	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	125		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			50			50		
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
Frt		0.928			0.943				0.850		0.974	
Flt Protected		0.977			0.972		0.950			0.950		
Satd. Flow (prot)	0	1689	0	0	1707	0	1770	1863	1583	1770	1814	0
Flt Permitted		0.977			0.972		0.950			0.950		
Satd. Flow (perm)	0	1689	0	0	1707	0	1770	1863	1583	1770	1814	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			181			443			384	
Travel Time (s)		4.0			4.1			10.1			8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	0	66	126	0	91	66	337	127	110	321	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	0	0	217	0	66	337	127	110	388	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 48.7%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

9: Bickford Dr. & Site Driveway #1/Site Driveway #2

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	0	61	116	0	84	61	310	117	101	295	62
Future Volume (Veh/h)	53	0	61	116	0	84	61	310	117	101	295	62
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	0	66	126	0	91	66	337	127	110	321	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								443				
pX, platoon unblocked												
vC, conflicting volume	1134	1170	354	1076	1077	337	388			464		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1134	1170	354	1076	1077	337	388			464		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	58	100	90	20	100	87	94			90		
cM capacity (veh/h)	138	164	689	157	186	705	1170			1097		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	124	217	66	337	127	110	388					
Volume Left	58	126	66	0	0	110	0					
Volume Right	66	91	0	0	127	0	67					
cSH	241	233	1170	1700	1700	1097	1700					
Volume to Capacity	0.52	0.93	0.06	0.20	0.07	0.10	0.23					
Queue Length 95th (ft)	67	201	4	0	0	8	0					
Control Delay (s)	34.8	86.4	8.3	0.0	0.0	8.6	0.0					
Lane LOS	D	F	A			A						
Approach Delay (s)	34.8	86.4	1.0			1.9						
Approach LOS	D	F										
Intersection Summary												
Average Delay			17.9									
Intersection Capacity Utilization			48.7%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
10: Bickford Dr. & Climax Road/Main St.

Avon Village Center
2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	18	210	23	16	0	236	188	23	0	236	25
Future Volume (vph)	39	18	210	23	16	0	236	188	23	0	236	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	100		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
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
Frt		0.894						0.993			0.987	
Flt Protected		0.993			0.971			0.974				
Satd. Flow (prot)	0	1654	0	0	1809	0	0	1802	0	0	1839	0
Flt Permitted		0.993			0.971			0.974				
Satd. Flow (perm)	0	1654	0	0	1809	0	0	1802	0	0	1839	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		271			628			384			208	
Travel Time (s)		6.2			14.3			8.7			4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	20	228	25	17	0	257	204	25	0	257	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	290	0	0	42	0	0	486	0	0	284	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 64.3%

ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
10: Bickford Dr. & Climax Road/Main St.

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	39	18	210	23	16	0	236	188	23	0	236	25
Future Volume (veh/h)	39	18	210	23	16	0	236	188	23	0	236	25
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
Hourly flow rate (vph)	42	20	228	25	17	0	257	204	25	0	257	27
Approach Volume (veh/h)	290				42		486				284	
Crossing Volume (veh/h)	282				503		62				299	
High Capacity (veh/h)	1110				931		1319				1095	
High v/c (veh/h)	0.26				0.05		0.37				0.26	
Low Capacity (veh/h)	912				752		1102				899	
Low v/c (veh/h)	0.32				0.06		0.44				0.32	
Intersection Summary												
Maximum v/c High	0.37											
Maximum v/c Low	0.44											
Intersection Capacity Utilization	64.3%				ICU Level of Service				C			

Intersection				
Intersection Delay, s/veh	8.5			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	290	42	486	284
Demand Flow Rate, veh/h	296	43	496	290
Vehicles Circulating, veh/h	287	513	63	304
Vehicles Exiting, veh/h	307	45	520	251
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.4	6.2	8.8	8.5
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	296	43	496	290
Cap Entry Lane, veh/h	848	676	1061	834
Entry HV Adj Factor	0.978	0.969	0.980	0.979
Flow Entry, veh/h	290	42	486	284
Cap Entry, veh/h	830	656	1039	816
V/C Ratio	0.349	0.064	0.468	0.348
Control Delay, s/veh	8.4	6.2	8.8	8.5
LOS	A	A	A	A
95th %tile Queue, veh	2	0	3	2

Lanes, Volumes, Timings
11: Climax Road & Bickford Ave. Ext.

Avon Village Center
2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	36	21	0	8	40	214	23	8	210	5
Future Volume (vph)	10	0	36	21	0	8	40	214	23	8	210	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.895			0.962			0.989			0.997	
Flt Protected		0.989			0.965			0.993			0.998	
Satd. Flow (prot)	0	1649	0	0	1729	0	0	1829	0	0	1853	0
Flt Permitted		0.989			0.965			0.993			0.998	
Satd. Flow (perm)	0	1649	0	0	1729	0	0	1829	0	0	1853	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		343			134			271			1156	
Travel Time (s)		7.8			3.0			6.2			26.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	0	39	23	0	9	43	233	25	9	228	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	50	0	0	32	0	0	301	0	0	242	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 41.1%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

11: Climax Road & Bickford Ave. Ext.

Avon Village Center

2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	36	21	0	8	40	214	23	8	210	5
Future Volume (Veh/h)	10	0	36	21	0	8	40	214	23	8	210	5
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	39	23	0	9	43	233	25	9	228	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	TWLTL						TWLTL					
Median storage (veh)	2						2					
Upstream signal (ft)							1156					
pX, platoon unblocked												
vC, conflicting volume	589	592	230	619	582	246	233				258	
vC1, stage 1 conf vol	248	248		332	332							
vC2, stage 2 conf vol	340	344		288	251							
vCu, unblocked vol	589	592	230	619	582	246	233				258	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	98	100	95	96	100	99	97				99	
cM capacity (veh/h)	573	548	809	542	547	793	1335				1307	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	50	32	301	242								
Volume Left	11	23	43	9								
Volume Right	39	9	25	5								
cSH	741	595	1335	1307								
Volume to Capacity	0.07	0.05	0.03	0.01								
Queue Length 95th (ft)	5	4	2	1								
Control Delay (s)	10.2	11.4	1.4	0.3								
Lane LOS	B	B	A	A								
Approach Delay (s)	10.2	11.4	1.4	0.3								
Approach LOS	B	B										
Intersection Summary												
Average Delay	2.2											
Intersection Capacity Utilization	41.1%			ICU Level of Service					A			
Analysis Period (min)	15											

Lanes, Volumes, Timings
12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Combined Sat.

							Ø1	Ø2
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Lane Configurations	W	W	T	T	L	L		
Traffic Volume (vph)	73	159	398	67	156	421		
Future Volume (vph)	73	159	398	67	156	421		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	0.907		0.981					
Flt Protected	0.985					0.987		
Satd. Flow (prot)	1664	0	1827	0	0	1839		
Flt Permitted	0.985					0.676		
Satd. Flow (perm)	1664	0	1827	0	0	1259		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR)	95		13					
Link Speed (mph)	35		40			40		
Link Distance (ft)	1156		405			551		
Travel Time (s)	22.5		6.9			9.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	79	173	433	73	170	458		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	252	0	506	0	0	628		
Turn Type	Prot		NA		D.P+P	NA		
Protected Phases	4		1 2		8	1 2 8	1	2
Permitted Phases					1 2			
Detector Phase	4		1 2		8	1 2 8		
Switch Phase								
Minimum Initial (s)	6.0				2.0		2.0	15.0
Minimum Split (s)	20.0				19.0		19.0	20.0
Total Split (s)	22.0				20.0		20.0	39.0
Total Split (%)	21.8%				19.8%		20%	39%
Maximum Green (s)	18.0				17.0		17.0	35.0
Yellow Time (s)	3.0				2.0		2.0	3.0
All-Red Time (s)	1.0				1.0		1.0	1.0
Lost Time Adjust (s)	0.0							
Total Lost Time (s)	4.0							
Lead/Lag	Lag				Lead		Lag	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes
Vehicle Extension (s)	1.5				2.0		2.0	5.0
Recall Mode	None				None		Min	Min
Walk Time (s)	5.0				5.0		5.0	5.0
Flash Dont Walk (s)	11.0				11.0		11.0	11.0
Pedestrian Calls (#/hr)	0				0		0	0
Act Effct Green (s)	12.4		53.1			65.4		
Actuated g/C Ratio	0.14		0.60			0.74		
v/c Ratio	0.80		0.46			0.62		
Control Delay	43.0		12.4			6.9		
Queue Delay	0.0		0.0			0.0		
Total Delay	43.0		12.4			6.9		
LOS	D		B			A		
Approach Delay	43.0		12.4			6.9		
Approach LOS	D		B			A		

Lanes, Volumes, Timings
 12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
 2020 Combined Sat.

								
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Queue Length 50th (ft)	89		143			95		
Queue Length 95th (ft)	182		270			182		
Internal Link Dist (ft)	1076		325			471		
Turn Bay Length (ft)								
Base Capacity (vph)	425		1186			1131		
Starvation Cap Reductn	0		0			0		
Spillback Cap Reductn	0		0			0		
Storage Cap Reductn	0		0			0		
Reduced v/c Ratio	0.59		0.43			0.56		

Intersection Summary

Area Type: Other
 Cycle Length: 101
 Actuated Cycle Length: 88.1
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 15.5
 Intersection Capacity Utilization 79.6%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

 Ø8	 Ø1	 Ø2	 Ø4
20 s	20 s	39 s	22 s

HCM Signalized Intersection Capacity Analysis

12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Combined Sat.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	73	159	398	67	156	421
Future Volume (vph)	73	159	398	67	156	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		3.0			3.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.91		0.98			1.00
Flt Protected	0.98		1.00			0.99
Satd. Flow (prot)	1664		1826			1838
Flt Permitted	0.98		1.00			0.68
Satd. Flow (perm)	1664		1826			1259
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	173	433	73	170	458
RTOR Reduction (vph)	82	0	5	0	0	0
Lane Group Flow (vph)	170	0	501	0	0	628
Turn Type	Prot		NA		D.P+P	NA
Protected Phases	4		1 2		8	1 2 8
Permitted Phases					1 2	
Actuated Green, G (s)	12.4		52.0			64.3
Effective Green, g (s)	12.4		52.0			64.3
Actuated g/C Ratio	0.14		0.59			0.73
Clearance Time (s)	4.0					
Vehicle Extension (s)	1.5					
Lane Grp Cap (vph)	235		1082			1004
v/s Ratio Prot	c0.10		0.27			c0.09
v/s Ratio Perm						c0.37
v/c Ratio	0.73		0.46			0.63
Uniform Delay, d1	36.0		10.0			5.8
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	9.0		0.1			0.9
Delay (s)	45.1		10.1			6.6
Level of Service	D		B			A
Approach Delay (s)	45.1		10.1			6.6
Approach LOS	D		B			A
Intersection Summary						
HCM 2000 Control Delay			14.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			87.7		Sum of lost time (s)	14.0
Intersection Capacity Utilization			79.6%		ICU Level of Service	D
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings
13: Site Driveway #3/Residential Drive & Bickford Dr.

Avon Village Center
2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	200	25	3	222	3	24	0	2	3	0	3
Future Volume (vph)	3	200	25	3	222	3	24	0	2	3	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.998			0.990			0.932	
Flt Protected		0.999			0.999			0.956			0.976	
Satd. Flow (prot)	0	1833	0	0	1857	0	0	1763	0	0	1694	0
Flt Permitted		0.999			0.999			0.956			0.976	
Satd. Flow (perm)	0	1833	0	0	1857	0	0	1763	0	0	1694	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			328			185			396	
Travel Time (s)		4.4			7.5			4.2			9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	217	27	3	241	3	26	0	2	3	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	247	0	0	247	0	0	28	0	0	6	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 23.8%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis 13: Site Driveway #3/Residential Drive & Bickford Dr.

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	200	25	3	222	3	24	0	2	3	0	3
Future Volume (Veh/h)	3	200	25	3	222	3	24	0	2	3	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	217	27	3	241	3	26	0	2	3	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	244			244			488	486	230	487	498	242
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	244			244			488	486	230	487	498	242
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			95	100	100	99	100	100
cM capacity (veh/h)	1322			1322			487	479	809	488	471	796
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	247	247	28	6								
Volume Left	3	3	26	3								
Volume Right	27	3	2	3								
cSH	1322	1322	501	605								
Volume to Capacity	0.00	0.00	0.06	0.01								
Queue Length 95th (ft)	0	0	4	1								
Control Delay (s)	0.1	0.1	12.6	11.0								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	0.1	12.6	11.0								
Approach LOS			B	B								
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			23.8%	ICU Level of Service					A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
14: N. Main St./Retail Drive #2 & Bickford Dr.

Avon Village Center
2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	139	0	23	169	20	0	17	22	20	15	61
Future Volume (vph)	67	139	0	23	169	20	0	17	22	20	15	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			50			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
Frt					0.984			0.923			0.914	
Flt Protected		0.984		0.950							0.990	
Satd. Flow (prot)	0	1833	0	1770	1833	0	0	1719	0	0	1686	0
Flt Permitted		0.984		0.950							0.990	
Satd. Flow (perm)	0	1833	0	1770	1833	0	0	1719	0	0	1686	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		328			250			360			304	
Travel Time (s)		7.5			5.7			8.2			6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	151	0	25	184	22	0	18	24	22	16	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	25	206	0	0	42	0	0	104	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 43.4%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

14: N. Main St./Retail Drive #2 & Bickford Dr.

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	139	0	23	169	20	0	17	22	20	15	61
Future Volume (Veh/h)	67	139	0	23	169	20	0	17	22	20	15	61
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	151	0	25	184	22	0	18	24	22	16	66
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	206			151			605	553	151	575	542	195
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	206			151			605	553	151	575	542	195
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			98			100	96	97	94	96	92
cM capacity (veh/h)	1365			1430			347	410	895	382	416	846
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	224	25	206	42	104							
Volume Left	73	25	0	0	22							
Volume Right	0	0	22	24	66							
cSH	1365	1430	1700	594	598							
Volume to Capacity	0.05	0.02	0.12	0.07	0.17							
Queue Length 95th (ft)	4	1	0	6	16							
Control Delay (s)	2.8	7.6	0.0	11.5	12.3							
Lane LOS	A	A		B	B							
Approach Delay (s)	2.8	0.8		11.5	12.3							
Approach LOS				B	B							
Intersection Summary												
Average Delay			4.3									
Intersection Capacity Utilization			43.4%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
15: N. Main St. & Site Driveway #4

Avon Village Center
2020 Combined Sat.

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	67	22	17	69	23	15
Future Volume (vph)	67	22	17	69	23	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.967		0.891			
Flt Protected	0.964					0.970
Satd. Flow (prot)	1736	0	1660	0	0	1807
Flt Permitted	0.964					0.970
Satd. Flow (perm)	1736	0	1660	0	0	1807
Link Speed (mph)	30		30			30
Link Distance (ft)	248		233			360
Travel Time (s)	5.6		5.3			8.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	24	18	75	25	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	97	0	93	0	0	41
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 20.5%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 15: N. Main St. & Site Driveway #4

Avon Village Center
2020 Combined Sat.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	67	22	17	69	23	15
Future Volume (Veh/h)	67	22	17	69	23	15
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	24	18	75	25	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	122	56			93	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	56			93	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	98			98	
cM capacity (veh/h)	859	1011			1501	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	97	93	41			
Volume Left	73	0	25			
Volume Right	24	75	0			
cSH	892	1700	1501			
Volume to Capacity	0.11	0.05	0.02			
Queue Length 95th (ft)	9	0	1			
Control Delay (s)	9.5	0.0	4.6			
Lane LOS	A		A			
Approach Delay (s)	9.5	0.0	4.6			
Approach LOS	A					
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization		20.5%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
16: N. Main St. & Main St.

Avon Village Center
2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	0	0	0	0	0	0	45	0	0	42	40
Future Volume (vph)	41	0	0	0	0	0	0	45	0	0	42	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935											
Flt Protected	0.950											
Satd. Flow (prot)	0	1770	0	0	1863	0	0	1863	0	0	1742	0
Flt Permitted	0.950											
Satd. Flow (perm)	0	1770	0	0	1863	0	0	1863	0	0	1742	0
Link Speed (mph)	30											
Link Distance (ft)	628											
Travel Time (s)	14.3											
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	0	0	0	0	0	0	49	0	0	46	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	0	0	0	49	0	0	89	0
Sign Control	Free											
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 14.7%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

16: N. Main St. & Main St.

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	0	0	0	0	0	0	45	0	0	42	40
Future Volume (Veh/h)	41	0	0	0	0	0	0	45	0	0	42	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	0	0	0	0	0	0	49	0	0	46	43
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0			0			156	90	0	114	90	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			156	90	0	114	90	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	94	100	100	94	96
cM capacity (veh/h)	1623			1623			728	778	1085	804	778	1085
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	45	0	49	89								
Volume Left	45	0	0	0								
Volume Right	0	0	0	43								
cSH	1623	1700	778	901								
Volume to Capacity	0.03	0.00	0.06	0.10								
Queue Length 95th (ft)	2	0	5	8								
Control Delay (s)	7.3	0.0	9.9	9.4								
Lane LOS	A		A	A								
Approach Delay (s)	7.3	0.0	9.9	9.4								
Approach LOS			A	A								
Intersection Summary												
Average Delay				9.0								
Intersection Capacity Utilization				14.7%	ICU Level of Service				A			
Analysis Period (min)				15								

Lanes, Volumes, Timings
17: Ensign Drive & N. Main St.

Avon Village Center
2020 Combined Sat.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	42	45	367	358	0
Future Volume (vph)	0	42	45	367	358	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1770	1863	1863	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1770	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	636			203	406	
Travel Time (s)	14.5			4.6	9.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	46	49	399	389	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	49	399	389	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	35.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

17: Ensign Drive & N. Main St.

Avon Village Center

2020 Combined Sat.

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	42	45	367	358	0
Future Volume (Veh/h)	0	42	45	367	358	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	46	49	399	389	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)				203		
pX, platoon unblocked						
vC, conflicting volume	886	389	389			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	886	389	389			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	93	96			
cM capacity (veh/h)	302	659	1170			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	46	49	399	389		
Volume Left	0	49	0	0		
Volume Right	46	0	0	0		
cSH	659	1170	1700	1700		
Volume to Capacity	0.07	0.04	0.23	0.23		
Queue Length 95th (ft)	6	3	0	0		
Control Delay (s)	10.9	8.2	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	10.9	0.9		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			35.5%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
18: Ensign Drive & Main St./Site Driveway #7

Avon Village Center
2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	97	0	27	0	261	106	29	261	0
Future Volume (vph)	0	0	0	97	0	27	0	261	106	29	261	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.971			0.961				
Flt Protected					0.962						0.995	
Satd. Flow (prot)	0	1863	0	0	1740	0	0	1790	0	0	1853	0
Flt Permitted					0.962						0.995	
Satd. Flow (perm)	0	1863	0	0	1740	0	0	1790	0	0	1853	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		692			210			406			373	
Travel Time (s)		15.7			4.8			9.2			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	105	0	29	0	284	115	32	284	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	134	0	0	399	0	0	316	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 51.6%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis 18: Ensign Drive & Main St./Site Driveway #7

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	97	0	27	0	261	106	29	261	0
Future Volume (Veh/h)	0	0	0	97	0	27	0	261	106	29	261	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	105	0	29	0	284	115	32	284	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								609				
pX, platoon unblocked												
vC, conflicting volume	718	747	284	690	690	342	284			399		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	718	747	284	690	690	342	284			399		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	70	100	96	100			97		
cM capacity (veh/h)	323	332	755	352	358	701	1278			1160		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	134	399	316								
Volume Left	0	105	0	32								
Volume Right	0	29	115	0								
cSH	1700	395	1278	1160								
Volume to Capacity	0.00	0.34	0.00	0.03								
Queue Length 95th (ft)	0	37	0	2								
Control Delay (s)	0.0	18.7	0.0	1.1								
Lane LOS	A	C		A								
Approach Delay (s)	0.0	18.7	0.0	1.1								
Approach LOS	A	C										
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			51.6%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
19: Ensign Drive & Site Driveway #5

Avon Village Center
2020 Combined Sat.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	93	97	197	205	22
Future Volume (vph)	21	93	97	197	205	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.987	
Flt Protected	0.991			0.984		
Satd. Flow (prot)	1643	0	0	1833	1839	0
Flt Permitted	0.991			0.984		
Satd. Flow (perm)	1643	0	0	1833	1839	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	280			373	494	
Travel Time (s)	6.4			8.5	11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	101	105	214	223	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	124	0	0	319	247	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

19: Ensign Drive & Site Driveway #5

Avon Village Center

2020 Combined Sat.

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	93	97	197	205	22
Future Volume (Veh/h)	21	93	97	197	205	22
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	101	105	214	223	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)				982		
pX, platoon unblocked						
vC, conflicting volume	659	235	247			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	659	235	247			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	87	92			
cM capacity (veh/h)	394	804	1319			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	124	319	247			
Volume Left	23	105	0			
Volume Right	101	0	24			
cSH	674	1319	1700			
Volume to Capacity	0.18	0.08	0.15			
Queue Length 95th (ft)	17	6	0			
Control Delay (s)	11.5	3.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.5	3.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization			44.8%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
20: Ensign Drive/Retail Drive #3 & Bickford Dr.

Avon Village Center
2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	159	5	115	187	104	5	108	100	96	99	15
Future Volume (vph)	17	159	5	115	187	104	5	108	100	96	99	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.965			0.936			0.991	
Flt Protected		0.995			0.986			0.999			0.978	
Satd. Flow (prot)	0	1848	0	0	1772	0	0	1742	0	0	1805	0
Flt Permitted		0.995			0.986			0.999			0.978	
Satd. Flow (perm)	0	1848	0	0	1772	0	0	1742	0	0	1805	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			734			494			296	
Travel Time (s)		8.1			16.7			11.2			6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	173	5	125	203	113	5	117	109	104	108	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	196	0	0	441	0	0	231	0	0	228	0
Sign Control		Yield			Yield			Yield			Yield	
Intersection Summary												
Area Type:	Other											
Control Type:	Roundabout											
Intersection Capacity Utilization 69.0%	ICU Level of Service C											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
20: Ensign Drive/Retail Drive #3 & Bickford Dr.

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	17	159	5	115	187	104	5	108	100	96	99	15
Future Volume (veh/h)	17	159	5	115	187	104	5	108	100	96	99	15
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
Hourly flow rate (vph)	18	173	5	125	203	113	5	117	109	104	108	16
Approach Volume (veh/h)	196			441			231			228		
Crossing Volume (veh/h)	337			140			295			333		
High Capacity (veh/h)	1063			1241			1099			1066		
High v/c (veh/h)	0.18			0.36			0.21			0.21		
Low Capacity (veh/h)	870			1031			902			873		
Low v/c (veh/h)	0.23			0.43			0.26			0.26		
Intersection Summary												
Maximum v/c High	0.36											
Maximum v/c Low	0.43											
Intersection Capacity Utilization	69.0%			ICU Level of Service					C			

Intersection				
Intersection Delay, s/veh	8.2			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	196	441	231	228
Demand Flow Rate, veh/h	199	450	235	232
Vehicles Circulating, veh/h	343	142	300	339
Vehicles Exiting, veh/h	228	393	242	252
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.3	9.2	7.5	7.8
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	199	450	235	232
Cap Entry Lane, veh/h	802	980	837	805
Entry HV Adj Factor	0.983	0.980	0.982	0.982
Flow Entry, veh/h	196	441	231	228
Cap Entry, veh/h	788	961	822	791
V/C Ratio	0.248	0.459	0.281	0.288
Control Delay, s/veh	7.3	9.2	7.5	7.8
LOS	A	A	A	A
95th %tile Queue, veh	1	2	1	1

Lanes, Volumes, Timings
21: Bickford Dr. & Fisher Drive

Avon Village Center
2020 Combined Sat.

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	64	292	312	46	34	67
Future Volume (vph)	64	292	312	46	34	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			100	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850	0.910	
Flt Protected	0.950	0.999			0.983	
Satd. Flow (prot)	1681	1768	1863	1583	1666	0
Flt Permitted	0.950	0.999			0.983	
Satd. Flow (perm)	1681	1768	1863	1583	1666	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		734	305		171	
Travel Time (s)		16.7	6.9		3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	317	339	50	37	73
Shared Lane Traffic (%)	10%					
Lane Group Flow (vph)	63	324	339	50	110	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 47.8% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

21: Bickford Dr. & Fisher Drive

Avon Village Center

2020 Combined Sat.

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	292	312	46	34	67
Future Volume (Veh/h)	64	292	312	46	34	67
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	317	339	50	37	73
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			637			
pX, platoon unblocked						
vC, conflicting volume	389				796	339
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	389				796	339
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				89	90
cM capacity (veh/h)	1170				335	703
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	47	340	339	50	110	
Volume Left	47	23	0	0	37	
Volume Right	0	0	0	50	73	
cSH	1170	1170	1700	1700	513	
Volume to Capacity	0.06	0.06	0.20	0.03	0.21	
Queue Length 95th (ft)	5	5	0	0	20	
Control Delay (s)	8.3	1.1	0.0	0.0	13.9	
Lane LOS	A	A			B	
Approach Delay (s)	2.0		0.0		13.9	
Approach LOS					B	
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			47.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
22: Bickford Dr. & Office Drive

Avon Village Center
2020 Combined Sat.

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	325	384	1	1	1
Future Volume (vph)	1	325	384	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.932	
Flt Protected					0.976	
Satd. Flow (prot)	0	1863	1863	0	1694	0
Flt Permitted					0.976	
Satd. Flow (perm)	0	1863	1863	0	1694	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		305	332		317	
Travel Time (s)		6.9	7.5		7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	353	417	1	1	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	354	418	0	2	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 30.3%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

22: Bickford Dr. & Office Drive

Avon Village Center
2020 Combined Sat.

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	325	384	1	1	1
Future Volume (Veh/h)	1	325	384	1	1	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	353	417	1	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			332			
pX, platoon unblocked	0.99				0.99	0.99
vC, conflicting volume	418				772	418
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	406				765	406
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1140				367	638
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	354	418	2			
Volume Left	1	0	1			
Volume Right	0	1	1			
cSH	1140	1700	466			
Volume to Capacity	0.00	0.25	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	12.8			
Lane LOS	A		B			
Approach Delay (s)	0.0	0.0	12.8			
Approach LOS			B			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			30.3%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center

2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	10	107	102	28	13	106	492	33	9	496	250
Future Volume (vph)	209	10	107	102	28	13	106	492	33	9	496	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	100		0	100		100
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			25			50			50		
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
Frt		0.863			0.952			0.991			0.950	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1608	0	1770	1773	0	1770	1846	0	1770	1770	0
Flt Permitted	0.728			0.663			0.111			0.330		
Satd. Flow (perm)	1356	1608	0	1235	1773	0	207	1846	0	615	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		116			14			6			41	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		332			231			526			680	
Travel Time (s)		7.5			5.3			12.0			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	227	11	116	111	30	14	115	535	36	10	539	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	227	127	0	111	44	0	115	571	0	10	811	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Detector Phase	4	4		4	4		1	6		5	2	
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		3.0	25.0		3.0	25.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		7.0	29.0		7.0	29.0	
Total Split (s)	32.0	32.0		32.0	32.0		8.0	50.0		8.0	50.0	
Total Split (%)	35.6%	35.6%		35.6%	35.6%		8.9%	55.6%		8.9%	55.6%	
Maximum Green (s)	28.0	28.0		28.0	28.0		4.0	46.0		4.0	46.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	
Recall Mode	Min	Min		Min	Min		None	Min		None	Min	
Act Effct Green (s)	26.1	26.1		26.1	26.1		47.0	46.3		44.7	41.6	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.57	0.56		0.55	0.51	
v/c Ratio	0.53	0.21		0.28	0.08		0.59	0.55		0.03	0.88	
Control Delay	30.3	6.8		25.9	17.1		21.9	13.9		7.2	30.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	30.3	6.8		25.9	17.1		21.9	13.9		7.2	30.6	
LOS	C	A		C	B		C	B		A	C	
Approach Delay		21.9			23.4			15.2			30.3	
Approach LOS		C			C			B			C	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	106	4		47	12		23	153		2	343	
Queue Length 95th (ft)	181	43		92	36		#60	322		8	#627	
Internal Link Dist (ft)		252			151			446			600	
Turn Bay Length (ft)	200						100			100		
Base Capacity (vph)	470	633		428	624		196	1132		392	1026	
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	0.48	0.20		0.26	0.07		0.59	0.50		0.03	0.79	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 82

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 23.2

Intersection LOS: C

Intersection Capacity Utilization 78.0%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

 Ø1	 Ø2	 Ø4
8 s	50 s	32 s
 Ø5	 Ø6	
8 s	50 s	

HCM Signalized Intersection Capacity Analysis

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	10	107	102	28	13	106	492	33	9	496	250
Future Volume (vph)	209	10	107	102	28	13	106	492	33	9	496	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.86		1.00	0.95		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1608		1770	1774		1770	1845		1770	1769	
Flt Permitted	0.73	1.00		0.66	1.00		0.11	1.00		0.33	1.00	
Satd. Flow (perm)	1357	1608		1235	1774		207	1845		614	1769	
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)	227	11	116	111	30	14	115	535	36	10	539	272
RTOR Reduction (vph)	0	80	0	0	10	0	0	3	0	0	20	0
Lane Group Flow (vph)	227	47	0	111	34	0	115	568	0	10	791	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		
Actuated Green, G (s)	26.1	26.1		26.1	26.1		49.3	46.3		44.7	44.0	
Effective Green, g (s)	26.1	26.1		26.1	26.1		49.3	46.3		44.7	44.0	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.58	0.54		0.53	0.52	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	
Lane Grp Cap (vph)	416	493		378	544		175	1003		332	914	
v/s Ratio Prot		0.03			0.02		c0.02	0.31		0.00	c0.45	
v/s Ratio Perm	c0.17			0.09			0.36			0.02		
v/c Ratio	0.55	0.09		0.29	0.06		0.66	0.57		0.03	0.87	
Uniform Delay, d1	24.6	21.1		22.5	20.9		15.3	12.8		10.5	18.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.2		0.9	0.1		6.6	1.2		0.0	9.4	
Delay (s)	27.1	21.2		23.4	21.0		21.9	14.0		10.5	27.3	
Level of Service	C	C		C	C		C	B		B	C	
Approach Delay (s)		25.0			22.7			15.3			27.1	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			22.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			85.1				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			78.0%				ICU Level of Service			D		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
 24: Routes 10/202 (Simsbury Road) & Site Driveway #8

Avon Village Center
 2020 Combined Sat.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	17	20	619	702	10
Future Volume (vph)	12	17	20	619	702	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.922				0.998	
Flt Protected	0.979			0.998		
Satd. Flow (prot)	1681	0	0	1859	1859	0
Flt Permitted	0.979			0.998		
Satd. Flow (perm)	1681	0	0	1859	1859	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	357			1053	526	
Travel Time (s)	8.1			23.9	12.0	
Confl. Peds. (#/hr)			3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	18	22	673	763	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	0	695	774	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 58.7%	ICU Level of Service B					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis
 24: Routes 10/202 (Simsbury Road) & Site Driveway #8

Avon Village Center
 2020 Combined Sat.

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	17	20	619	702	10
Future Volume (Veh/h)	12	17	20	619	702	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	18	22	673	763	11
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					526	
pX, platoon unblocked	0.65	0.65	0.65			
vC, conflicting volume	1488	772	777			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1482	379	387			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	96	97			
cM capacity (veh/h)	87	433	759			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	31	695	774			
Volume Left	13	22	0			
Volume Right	18	0	11			
cSH	162	759	1700			
Volume to Capacity	0.19	0.03	0.46			
Queue Length 95th (ft)	17	2	0			
Control Delay (s)	32.4	0.8	0.0			
Lane LOS	D	A				
Approach Delay (s)	32.4	0.8	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization		58.7%		ICU Level of Service		B
Analysis Period (min)		15				

Lanes, Volumes, Timings
25: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Combined Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	0	17	2	0	0	13	576	1	0	668	52
Future Volume (vph)	34	0	17	2	0	0	13	576	1	0	668	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.956									0.990	
Flt Protected		0.967			0.950			0.999				
Satd. Flow (prot)	0	1722	0	0	1770	0	0	1861	0	0	1844	0
Flt Permitted		0.967			0.950			0.999				
Satd. Flow (perm)	0	1722	0	0	1770	0	0	1861	0	0	1844	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		582			275			237			1053	
Travel Time (s)		13.2			6.3			5.4			23.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	0	18	2	0	0	14	626	1	0	726	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	2	0	0	641	0	0	783	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 50.8%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

25: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Combined Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	0	17	2	0	0	13	576	1	0	668	52
Future Volume (Veh/h)	34	0	17	2	0	0	13	576	1	0	668	52
Sign Control	Stop				Stop				Free			
Grade	0%				0%				0%			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	0	18	2	0	0	14	626	1	0	726	57
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1409	1410	754	1427	1438	626	783			627		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1409	1410	754	1427	1438	626	783			627		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	68	100	96	98	100	100	98			100		
cM capacity (veh/h)	115	136	409	106	131	484	835			955		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	55	2	641	783								
Volume Left	37	2	14	0								
Volume Right	18	0	1	57								
cSH	150	106	835	955								
Volume to Capacity	0.37	0.02	0.02	0.00								
Queue Length 95th (ft)	38	1	1	0								
Control Delay (s)	42.3	39.5	0.4	0.0								
Lane LOS	E	E	A									
Approach Delay (s)	42.3	39.5	0.4	0.0								
Approach LOS	E	E										
Intersection Summary												
Average Delay			1.8									
Intersection Capacity Utilization			50.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
26: Woodford Ave & Site Driveway #7

Avon Village Center
2020 Combined Sat.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	3	3	49	63	2
Future Volume (vph)	3	3	3	49	63	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.996	
Flt Protected	0.976			0.997		
Satd. Flow (prot)	1694	0	0	1857	1855	0
Flt Permitted	0.976			0.997		
Satd. Flow (perm)	1694	0	0	1857	1855	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			205	88	
Travel Time (s)	4.0			4.7	2.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	3	3	53	68	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	0	56	70	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 15.0%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

26: Woodford Ave & Site Driveway #7

Avon Village Center
2020 Combined Sat.

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	3	3	49	63	2
Future Volume (Veh/h)	3	3	3	49	63	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	3	3	53	68	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	128	69	70			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	128	69	70			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	865	994	1531			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	6	56	70			
Volume Left	3	3	0			
Volume Right	3	0	2			
cSH	925	1531	1700			
Volume to Capacity	0.01	0.00	0.04			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	8.9	0.4	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.9	0.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization		15.0%		ICU Level of Service		A
Analysis Period (min)		15				

Appendix E

Intersection Capacity Analysis Worksheets 2020 Combined Improved Traffic Volumes Saturday Midday Peak Hour

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	991	415	34	1138	41	486	104	49	30	106	70
Future Volume (vph)	100	991	415	34	1138	41	486	104	49	30	106	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	285		0	300		0	325		0	0		0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.995			0.952				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3522	0	3433	1773	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3522	0	3433	1773	0	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			451		4			24				130
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			1189			682			591	
Travel Time (s)		20.0			27.0			15.5			13.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	1077	451	37	1237	45	528	113	53	33	115	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	1077	451	37	1282	0	528	166	0	33	115	76
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Detector Phase	1	6	6	5	2		7 4	7 8		4	8	1
Switch Phase												
Minimum Initial (s)	3.0	15.0	15.0	3.0	20.0					3.0	5.0	3.0
Minimum Split (s)	9.1	22.0	22.0	9.1	27.0					7.0	26.7	9.1
Total Split (s)	13.8	49.1	49.1	10.6	45.9					7.0	26.7	13.8
Total Split (%)	12.5%	44.6%	44.6%	9.6%	41.7%					6.4%	24.3%	12.5%
Maximum Green (s)	7.7	42.1	42.1	4.5	38.9					3.0	21.0	7.7
Yellow Time (s)	3.1	5.0	5.0	3.1	5.0					3.0	3.3	3.1
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0					1.0	2.4	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Lost Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag						Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes	Yes
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Recall Mode	None	Min	Min	None	Min					None	None	None
Walk Time (s)											20.0	
Flash Dont Walk (s)											1.0	
Pedestrian Calls (#/hr)											0	
Act Effct Green (s)	7.7	46.5	46.5	4.5	38.9		18.5	27.3		3.0	10.1	23.5
Actuated g/C Ratio	0.08	0.47	0.47	0.05	0.39		0.19	0.28		0.03	0.10	0.24
v/c Ratio	0.80	0.65	0.46	0.46	0.93		0.82	0.33		0.62	0.61	0.16
Control Delay	83.8	24.0	3.6	66.5	41.7		51.4	26.0		94.8	56.3	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	83.8	24.0	3.6	66.5	41.7		51.4	26.0		94.8	56.3	1.6

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. Sat.

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	10.1
Total Split (s)	16.6
Total Split (%)	15%
Maximum Green (s)	11.5
Yellow Time (s)	3.0
All-Red Time (s)	2.1
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	1.5
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings
1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	C	A	E	D		D	C		F	E	A
Approach Delay		22.3			42.4			45.3			43.4	
Approach LOS		C			D			D			D	
Queue Length 50th (ft)	69	288	0	23	397		166	71		21	71	0
Queue Length 95th (ft)	#171	395	59	#66	#587		#263	127		#75	127	7
Internal Link Dist (ft)		799			1109			602			511	
Turn Bay Length (ft)	285			300			325					
Base Capacity (vph)	137	1659	981	80	1385		640	698		53	394	474
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.80	0.65	0.46	0.46	0.93		0.82	0.24		0.62	0.29	0.16

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 99.2

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 34.5

Intersection LOS: C

Intersection Capacity Utilization 77.7%

ICU Level of Service D

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

 Ø1	 Ø2	 Ø4	 Ø7	 Ø8
13.8 s	45.9 s	7 s	16.6 s	26.7 s
 Ø5	 Ø6			
10.6 s	49.1 s			

Lane Group	Ø7
LOS	
Approach Delay	
Approach LOS	
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	

HCM Signalized Intersection Capacity Analysis

1: Rte 10/Nod Rd & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	991	415	34	1138	41	486	104	49	30	106	70
Future Volume (vph)	100	991	415	34	1138	41	486	104	49	30	106	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	7.0	7.0	6.1	7.0		5.1	5.1		4.0	5.7	6.1
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3521		3433	1774		1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3521		3433	1774		1770	1863	1583
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)	109	1077	451	37	1237	45	528	113	53	33	115	76
RTOR Reduction (vph)	0	0	245	0	2	0	0	18	0	0	0	63
Lane Group Flow (vph)	109	1077	206	37	1280	0	528	148	0	33	115	13
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	1	6		5	2		7 4	7 8		4	8	1
Permitted Phases			6									8
Actuated Green, G (s)	7.7	46.5	46.5	2.6	41.4		18.5	26.7		3.0	10.1	17.8
Effective Green, g (s)	7.7	46.5	46.5	2.6	41.4		14.5	26.7		3.0	10.1	17.8
Actuated g/C Ratio	0.08	0.46	0.46	0.03	0.41		0.14	0.26		0.03	0.10	0.18
Clearance Time (s)	6.1	7.0	7.0	6.1	7.0					4.0	5.7	6.1
Vehicle Extension (s)	1.5	2.5	2.5	3.0	5.0					1.5	1.5	1.5
Lane Grp Cap (vph)	134	1619	724	45	1434		489	466		52	185	277
v/s Ratio Prot	c0.06	c0.30		0.02	c0.36		c0.15	0.08		0.02	c0.06	0.00
v/s Ratio Perm			0.13									0.00
v/c Ratio	0.81	0.67	0.29	0.82	0.89		1.08	0.32		0.63	0.62	0.05
Uniform Delay, d1	46.2	21.5	17.2	49.3	28.0		43.5	30.1		48.8	43.9	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	28.7	0.9	0.2	70.2	7.9		63.9	0.1		17.1	4.6	0.0
Delay (s)	75.0	22.4	17.3	119.4	36.0		107.4	30.3		65.9	48.5	34.9
Level of Service	E	C	B	F	D		F	C		E	D	C
Approach Delay (s)		24.5			38.3			89.0			46.4	
Approach LOS		C			D			F			D	
Intersection Summary												
HCM 2000 Control Delay			42.0				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			101.6				Sum of lost time (s)			27.9		
Intersection Capacity Utilization			77.7%				ICU Level of Service			D		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1418	26	31	1618	15	32	5	38	13	0	30
Future Volume (vph)	35	1418	26	31	1618	15	32	5	38	13	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	130		0	0		0	0		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			75			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.999			0.866			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3529	0	1770	3536	0	1770	1613	0	1770	1583	0
Flt Permitted	0.077			0.114			0.736			0.727		
Satd. Flow (perm)	143	3529	0	212	3536	0	1371	1613	0	1354	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			1			41			194	
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		724			1561			285			144	
Travel Time (s)		16.5			35.5			13.0			6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	1541	28	34	1759	16	35	5	41	14	0	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	1569	0	34	1775	0	35	46	0	14	33	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Detector Phase	1	6		5	2		4	4		4	4	
Switch Phase												
Minimum Initial (s)	4.0	15.0		4.0	15.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	8.1	21.2		8.0	21.2		11.5	11.5		11.5	11.5	
Total Split (s)	12.0	44.0		12.0	44.0		24.0	24.0		24.0	24.0	
Total Split (%)	15.0%	55.0%		15.0%	55.0%		30.0%	30.0%		30.0%	30.0%	
Maximum Green (s)	7.9	37.8		8.0	37.8		18.5	18.5		18.5	18.5	
Yellow Time (s)	3.1	4.3		3.0	4.3		3.3	3.3		3.3	3.3	
All-Red Time (s)	1.0	1.9		1.0	1.9		2.2	2.2		2.2	2.2	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None		None	None	
Act Effct Green (s)	62.4	57.8		62.4	57.7		7.9	7.9		7.9	7.9	
Actuated g/C Ratio	0.78	0.72		0.78	0.72		0.10	0.10		0.10	0.10	
v/c Ratio	0.16	0.62		0.12	0.70		0.26	0.23		0.10	0.10	
Control Delay	4.0	9.7		3.3	11.6		37.3	15.5		33.4	0.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	4.0	9.7		3.3	11.6		37.3	15.5		33.4	0.6	
LOS	A	A		A	B		D	B		C	A	
Approach Delay		9.6			11.4			24.9			10.4	
Approach LOS		A			B			C			B	

Lanes, Volumes, Timings

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	3	240		3	305		17	2		7	0	
Queue Length 95th (ft)	10	362		9	463		42	31		23	0	
Internal Link Dist (ft)		644			1481			205			64	
Turn Bay Length (ft)	150			130								
Base Capacity (vph)	273	2549		323	2550		317	404		313	515	
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	0.14	0.62		0.11	0.70		0.11	0.11		0.04	0.06	

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 10.9

Intersection LOS: B

Intersection Capacity Utilization 63.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4
12 s	44 s	24 s
 Ø5	 Ø6 (R)	
12 s	44 s	

HCM Signalized Intersection Capacity Analysis

2: River Park Drive/Private Drive & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1418	26	31	1618	15	32	5	38	13	0	30
Future Volume (vph)	35	1418	26	31	1618	15	32	5	38	13	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.87		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)	1770	3530		1770	3534		1770	1614		1770	1583	
Flt Permitted	0.08	1.00		0.11	1.00		0.74	1.00		0.73	1.00	
Satd. Flow (perm)	144	3530		213	3534		1370	1614		1354	1583	
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)	38	1541	28	34	1759	16	35	5	41	14	0	33
RTOR Reduction (vph)	0	1	0	0	0	0	0	38	0	0	30	0
Lane Group Flow (vph)	38	1568	0	34	1775	0	35	8	0	14	3	0
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases	6			2			4			4		
Actuated Green, G (s)	57.6	53.9		57.5	53.8		6.7	6.7		6.7	6.7	
Effective Green, g (s)	57.6	53.9		57.5	53.8		6.7	6.7		6.7	6.7	
Actuated g/C Ratio	0.72	0.67		0.72	0.67		0.08	0.08		0.08	0.08	
Clearance Time (s)	4.1	6.2		4.0	6.2		5.5	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	178	2378		225	2376		114	135		113	132	
v/s Ratio Prot	c0.01	0.44		0.01	c0.50			0.01			0.00	
v/s Ratio Perm	0.14			0.10			c0.03			0.01		
v/c Ratio	0.21	0.66		0.15	0.75		0.31	0.06		0.12	0.02	
Uniform Delay, d1	6.8	7.7		5.0	8.6		34.5	33.8		33.9	33.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.5		0.3	2.2		1.5	0.2		0.5	0.1	
Delay (s)	7.4	9.1		5.3	10.8		36.0	34.0		34.4	33.7	
Level of Service	A	A		A	B		D	C		C	C	
Approach Delay (s)		9.1			10.7			34.8			33.9	
Approach LOS		A			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			10.8			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			80.0			Sum of lost time (s)			15.8			
Intersection Capacity Utilization			63.4%			ICU Level of Service			B			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1453	57	13	1616	1	79	1	19	2	0	2
Future Volume (vph)	2	1453	57	13	1616	1	79	1	19	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994							0.850		0.932	
Flt Protected								0.953			0.976	
Satd. Flow (prot)	0	3518	0	0	3539	0	0	1775	1583	0	1694	0
Flt Permitted		0.953			0.932			0.726			0.862	
Satd. Flow (perm)	0	3353	0	0	3299	0	0	1352	1583	0	1496	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8							85		85	
Link Speed (mph)		30			30			15			30	
Link Distance (ft)		691			724			207			170	
Travel Time (s)		15.7			16.5			9.4			3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	1579	62	14	1757	1	86	1	21	2	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1643	0	0	1772	0	0	87	21	0	4	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	20.6	20.6		20.6	20.6		12.5	12.5	12.5	12.5	12.5	
Total Split (s)	55.0	55.0		55.0	55.0		25.0	25.0	25.0	25.0	25.0	
Total Split (%)	64.7%	64.7%		64.7%	64.7%		29.4%	29.4%	29.4%	29.4%	29.4%	
Maximum Green (s)	49.4	49.4		49.4	49.4		19.5	19.5	19.5	19.5	19.5	
Yellow Time (s)	4.2	4.2		4.2	4.2		3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.4	1.4		1.4	1.4		2.2	2.2	2.2	2.2	2.2	
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.6			5.6			5.5	5.5		5.5	
Lead/Lag							Lag	Lag	Lag	Lag	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None	None	None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		66.3			66.3			11.2	11.2		11.2	
Actuated g/C Ratio		0.78			0.78			0.13	0.13		0.13	
v/c Ratio		0.63			0.69			0.49	0.07		0.01	
Control Delay		7.1			8.3			42.7	0.5		0.0	
Queue Delay		0.1			0.0			0.0	0.0		0.0	
Total Delay		7.2			8.3			42.7	0.5		0.0	
LOS		A			A			D	A		A	
Approach Delay		7.2			8.3			34.5				
Approach LOS		A			A			C				

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	24.0
Total Split (s)	5.0
Total Split (%)	6%
Maximum Green (s)	1.0
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	7.0
Flash Dont Walk (s)	13.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lanes, Volumes, Timings

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		190			227			44	0		0	
Queue Length 95th (ft)		321			389			84	0		0	
Internal Link Dist (ft)		611			644			127			90	
Turn Bay Length (ft)												
Base Capacity (vph)		2618			2574			310	428		408	
Starvation Cap Reductn		186			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.68			0.69			0.28	0.05		0.01	

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

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

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 8.6

Intersection LOS: A

Intersection Capacity Utilization 70.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street)

  Ø2 (R)	  Ø3	  Ø4
55 s	5 s	25 s

Lane Group	Ø3
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	

HCM Signalized Intersection Capacity Analysis

Avon Village Center

3: Drive to Old Avon Village/Private Drive & Routes 44/10 (East Main Street) 2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1453	57	13	1616	1	79	1	19	2	0	2
Future Volume (vph)	2	1453	57	13	1616	1	79	1	19	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.6			5.6			5.5	5.5		5.5	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		0.99			1.00			1.00	0.85		0.93	
Flt Protected		1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)		3519			3538			1775	1583		1695	
Flt Permitted		0.95			0.93			0.73	1.00		0.86	
Satd. Flow (perm)		3355			3299			1353	1583		1498	
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)	2	1579	62	14	1757	1	86	1	21	2	0	2
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	19	0	4	0
Lane Group Flow (vph)	0	1641	0	0	1772	0	0	87	2	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		64.1			64.1			9.8	9.8		9.8	
Effective Green, g (s)		64.1			64.1			9.8	9.8		9.8	
Actuated g/C Ratio		0.75			0.75			0.12	0.12		0.12	
Clearance Time (s)		5.6			5.6			5.5	5.5		5.5	
Vehicle Extension (s)		3.0			3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		2530			2487			155	182		172	
v/s Ratio Prot												
v/s Ratio Perm		0.49			0.54			0.06	0.00		0.00	
v/c Ratio		0.65			0.71			0.56	0.01		0.00	
Uniform Delay, d1		5.0			5.6			35.6	33.3		33.3	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.3			1.8			4.6	0.0		0.0	
Delay (s)		6.3			7.3			40.2	33.3		33.3	
Level of Service		A			A			D	C		C	
Approach Delay (s)		6.3			7.3			38.8			33.3	
Approach LOS		A			A			D			C	
Intersection Summary												
HCM 2000 Control Delay		7.9			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.73										
Actuated Cycle Length (s)		85.0			Sum of lost time (s)			15.1				
Intersection Capacity Utilization		70.8%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	1014	90	209	1143	341	106	104	130	361	156	170
Future Volume (vph)	174	1014	90	209	1143	341	106	104	130	361	156	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	300		0	150		150	150		0
Storage Lanes	1		0	1		0	0		1	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.988			0.965				0.850		0.922	
Flt Protected	0.950			0.950				0.975		0.950		
Satd. Flow (prot)	1770	3497	0	1770	3415	0	0	1816	1583	3433	1717	0
Flt Permitted	0.950			0.950				0.975		0.950		
Satd. Flow (perm)	1770	3497	0	1770	3415	0	0	1816	1583	3433	1717	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			35				47		29	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		738			691			688			488	
Travel Time (s)		16.8			15.7			15.6			11.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	1102	98	227	1242	371	115	113	141	392	170	185
Shared Lane Traffic (%)												
Lane Group Flow (vph)	189	1200	0	227	1613	0	0	228	141	392	355	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Detector Phase	5	2		1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	21.0		11.0	21.0		11.0	11.0	11.0	11.0	11.0	
Total Split (s)	13.0	76.0		24.0	87.0		30.0	30.0	24.0	32.0	32.0	
Total Split (%)	8.0%	46.9%		14.8%	53.7%		18.5%	18.5%	14.8%	19.8%	19.8%	
Maximum Green (s)	9.0	70.0		20.0	81.0		26.0	26.0	20.0	28.0	28.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	-1.0		0.0	-1.0			0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	1.5	3.0		1.5	3.0		3.0	3.0	1.5	2.5	2.5	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Act Effct Green (s)	11.1	70.8		22.1	81.8			23.9	50.0	28.2	28.2	
Actuated g/C Ratio	0.07	0.44		0.14	0.50			0.15	0.31	0.17	0.17	
v/c Ratio	1.56	0.78		0.94	0.93			0.85	0.27	0.66	1.10	
Control Delay	330.6	43.2		111.8	46.7			94.6	29.3	68.4	134.6	
Queue Delay	0.0	0.0		0.0	45.4			0.0	0.0	0.0	0.0	
Total Delay	330.6	43.2		111.8	92.1			94.6	29.3	68.4	134.6	
LOS	F	D		F	F			F	C	E	F	
Approach Delay		82.3			94.5			69.6			99.8	
Approach LOS		F			F			E			F	

Lanes, Volumes, Timings

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center

2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	~307	564		~258	807			235	74	202	~401	
Queue Length 95th (ft)	#476	656		#441	930			#363	136	262	#615	
Internal Link Dist (ft)		658			611			608			408	
Turn Bay Length (ft)	300			300					150	150		
Base Capacity (vph)	121	1536		241	1745			291	521	597	322	
Starvation Cap Reductn	0	0		0	334			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	1.56	0.78		0.94	1.14			0.78	0.27	0.66	1.10	

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 162

Offset: 89 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.56

Intersection Signal Delay: 89.4

Intersection LOS: F

Intersection Capacity Utilization 96.2%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

 Ø1	 Ø2 (R)	 Ø4	 Ø8
24 s	76 s	32 s	30 s
 Ø5	 Ø6 (R)		
13 s	87 s		

HCM Signalized Intersection Capacity Analysis

4: Old Farms Road/Routes 10/202 & Routes 44/10 (East Main Street)

Avon Village Center
2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	1014	90	209	1143	341	106	104	130	361	156	170
Future Volume (vph)	174	1014	90	209	1143	341	106	104	130	361	156	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00	0.97	1.00	
Frt	1.00	0.99		1.00	0.97			1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3496		1770	3417			1817	1583	3433	1717	
Flt Permitted	0.95	1.00		0.95	1.00			0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3496		1770	3417			1817	1583	3433	1717	
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)	189	1102	98	227	1242	371	115	113	141	392	170	185
RTOR Reduction (vph)	0	4	0	0	17	0	0	0	34	0	24	0
Lane Group Flow (vph)	189	1196	0	227	1596	0	0	228	107	392	331	0
Turn Type	Prot	NA		Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases									8			
Actuated Green, G (s)	11.1	69.8		22.1	80.8			23.9	46.0	28.2	28.2	
Effective Green, g (s)	11.1	70.8		22.1	81.8			23.9	46.0	28.2	28.2	
Actuated g/C Ratio	0.07	0.44		0.14	0.50			0.15	0.28	0.17	0.17	
Clearance Time (s)	4.0	6.0		4.0	6.0			4.0	4.0	4.0	4.0	
Vehicle Extension (s)	1.5	3.0		1.5	3.0			3.0	1.5	2.5	2.5	
Lane Grp Cap (vph)	121	1527		241	1725			268	488	597	298	
v/s Ratio Prot	c0.11	0.34		c0.13	c0.47			c0.13	0.03	0.11	c0.19	
v/s Ratio Perm									0.04			
v/c Ratio	1.56	0.78		0.94	0.93			0.85	0.22	0.66	1.11	
Uniform Delay, d1	75.5	39.0		69.3	37.3			67.3	44.3	62.4	66.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	289.1	4.1		41.7	9.9			21.9	0.1	2.3	85.3	
Delay (s)	364.5	43.1		111.0	47.2			89.2	44.4	64.7	152.2	
Level of Service	F	D		F	D			F	D	E	F	
Approach Delay (s)		86.9			55.1			72.1			106.3	
Approach LOS		F			E			E			F	
Intersection Summary												
HCM 2000 Control Delay			75.5			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			162.0			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			96.2%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
5: Routes 44/202 (West Main Street) & Woodford Ave

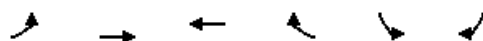
Avon Village Center
2020 Combined Imp. Sat.

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		 	 		 	
Traffic Volume (vph)	34	1265	1401	18	13	53
Future Volume (vph)	34	1265	1401	18	13	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.891	
Flt Protected		0.999			0.990	
Satd. Flow (prot)	0	3536	3532	0	1643	0
Flt Permitted		0.999			0.990	
Satd. Flow (perm)	0	3536	3532	0	1643	0
Link Speed (mph)		30	35		30	
Link Distance (ft)		455	738		205	
Travel Time (s)		10.3	14.4		4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	1375	1523	20	14	58
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1412	1543	0	72	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 70.1%	ICU Level of Service C					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

5: Routes 44/202 (West Main Street) & Woodford Ave

Avon Village Center
2020 Combined Imp. Sat.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↕↕	
Traffic Volume (veh/h)	34	1265	1401	18	13	53
Future Volume (Veh/h)	34	1265	1401	18	13	53
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	1375	1523	20	14	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		455	738			
pX, platoon unblocked	0.58				0.63	0.58
vC, conflicting volume	1543				2294	772
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	481				1184	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				87	91
cM capacity (veh/h)	624				107	627
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	495	917	1015	528	72	
Volume Left	37	0	0	0	14	
Volume Right	0	0	0	20	58	
cSH	624	1700	1700	1700	323	
Volume to Capacity	0.06	0.54	0.60	0.31	0.22	
Queue Length 95th (ft)	5	0	0	0	21	
Control Delay (s)	1.7	0.0	0.0	0.0	19.3	
Lane LOS	A				C	
Approach Delay (s)	0.6		0.0		19.3	
Approach LOS					C	
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			70.1%		ICU Level of Service	C
Analysis Period (min)			15			

Lanes, Volumes, Timings

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	963	7	2	1167	285	3	5	5	274	0	126
Future Volume (vph)	128	963	7	2	1167	285	3	5	5	274	0	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	100		0	50		0	0		0	0		80
Storage Lanes	1		0	1		1	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.999				0.850		0.948				0.850
Flt Protected	0.950			0.950				0.989		0.950	0.950	
Satd. Flow (prot)	1770	3452	0	1805	1881	1583	0	1768	0	1681	1681	1583
Flt Permitted	0.067			0.271				0.935		0.749	0.749	
Satd. Flow (perm)	125	3452	0	515	1881	1583	0	1671	0	1325	1325	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				310		5				137
Link Speed (mph)		35			35			25			30	
Link Distance (ft)		1357			455			348			203	
Travel Time (s)		26.4			8.9			9.5			4.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	139	1047	8	2	1268	310	3	5	5	298	0	137
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	139	1055	0	2	1268	310	0	13	0	149	149	137
Turn Type	D.P+P	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3		2 3	4			4		4
Detector Phase	1	1 2 3		2 3	2 3	2 3	4	4		4	4	4
Switch Phase												
Minimum Initial (s)	5.0						7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	8.0						11.0	11.0		11.0	11.0	11.0
Total Split (s)	9.0						15.0	15.0		15.0	15.0	15.0
Total Split (%)	10.0%						16.7%	16.7%		16.7%	16.7%	16.7%
Maximum Green (s)	6.0						11.0	11.0		11.0	11.0	11.0
Yellow Time (s)	3.0						3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	0.0						1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0							0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0							4.0		4.0	4.0	4.0
Lead/Lag	Lead						Lag	Lag		Lag	Lag	Lag
Lead-Lag Optimize?	Yes						Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0						2.0	2.0		2.0	2.0	2.0
Recall Mode	None						None	None		None	None	None
Act Effct Green (s)	69.0	73.0		65.0	64.0	63.0		11.0		11.0	11.0	11.0
Actuated g/C Ratio	0.77	0.81		0.72	0.71	0.70		0.12		0.12	0.12	0.12
v/c Ratio	0.68	0.38		0.01	0.95	0.26		0.06		0.93	0.93	0.44
Control Delay	34.8	1.8		3.5	28.3	1.1		28.8		95.6	95.6	11.6
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	0.0
Total Delay	34.8	1.8		3.5	28.3	1.1		28.8		95.6	95.6	11.6
LOS	C	A		A	C	A		C		F	F	B

Lanes, Volumes, Timings
6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center
2020 Combined Imp. Sat.

Lane Group	Ø2	Ø3
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Turn Type		
Protected Phases	2	3
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	15.0	6.0
Minimum Split (s)	18.0	12.0
Total Split (s)	54.0	12.0
Total Split (%)	60%	13%
Maximum Green (s)	51.0	6.0
Yellow Time (s)	2.0	4.0
All-Red Time (s)	1.0	2.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes
Vehicle Extension (s)	2.0	3.0
Recall Mode	C-Max	None
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		

Lanes, Volumes, Timings

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		5.6			22.9			28.8			69.1	
Approach LOS		A			C			C			E	
Queue Length 50th (ft)	35	30		0	542	0		4		89	89	0
Queue Length 95th (ft)	#103	38		2	#962	21		21		#210	#210	52
Internal Link Dist (ft)		1277			375			268			123	
Turn Bay Length (ft)	100			50								80
Base Capacity (vph)	205	2800		371	1337	1201		208		161	161	313
Starvation Cap Reductn	0	0		0	0	0		0		0	0	0
Spillback Cap Reductn	0	0		0	0	0		0		0	0	0
Storage Cap Reductn	0	0		0	0	0		0		0	0	0
Reduced v/c Ratio	0.68	0.38		0.01	0.95	0.26		0.06		0.93	0.93	0.44

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 22.8

Intersection LOS: C

Intersection Capacity Utilization 92.8%

ICU Level of Service F

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

 Ø1	 Ø2 (R)	 Ø3	 Ø4
9 s	54 s	12 s	15 s

Lane Group	Ø2	Ø3
Approach Delay		
Approach LOS		
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		

HCM Signalized Intersection Capacity Analysis

6: Avon Office Park/Ensign Drive & Routes 44/202 (West Main Street)

Avon Village Center
2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	963	7	2	1167	285	3	5	5	274	0	126
Future Volume (vph)	128	963	7	2	1167	285	3	5	5	274	0	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	3.0	2.0		1.0	2.0	3.0		4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00		0.95	0.95	1.00
Flt	1.00	1.00		1.00	1.00	0.85		0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99		0.95	0.95	1.00
Satd. Flow (prot)	1770	3451		1805	1881	1583		1767		1681	1681	1583
Flt Permitted	0.07	1.00		0.27	1.00	1.00		0.93		0.75	0.75	1.00
Satd. Flow (perm)	124	3451		516	1881	1583		1671		1326	1326	1583
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)	139	1047	8	2	1268	310	3	5	5	298	0	137
RTOR Reduction (vph)	0	1	0	0	0	103	0	4	0	0	0	120
Lane Group Flow (vph)	139	1054	0	2	1268	207	0	9	0	149	149	17
Heavy Vehicles (%)	2%	1%	0%	0%	1%	2%	0%	2%	0%	2%	2%	2%
Turn Type	D.P+P	NA		Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	1 2 3			2 3			4			4	
Permitted Phases	2 3			2 3		2 3	4			4		4
Actuated Green, G (s)	66.0	69.0		60.0	60.0	60.0		11.0		11.0	11.0	11.0
Effective Green, g (s)	66.0	70.0		62.0	61.0	60.0		11.0		11.0	11.0	11.0
Actuated g/C Ratio	0.73	0.78		0.69	0.68	0.67		0.12		0.12	0.12	0.12
Clearance Time (s)	3.0							4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0							2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	200	2684		355	1274	1055		204		162	162	193
v/s Ratio Prot	c0.05	0.31			c0.67							
v/s Ratio Perm	0.46			0.00		0.13		0.01		c0.11	0.11	0.01
v/c Ratio	0.69	0.39		0.01	1.00	0.20		0.04		0.92	0.92	0.09
Uniform Delay, d1	24.2	3.2		4.4	14.4	5.8		34.9		39.1	39.1	35.0
Progression Factor	1.42	0.62		1.00	1.00	1.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	9.2	0.1		0.0	23.9	0.1		0.0		46.6	46.6	0.1
Delay (s)	43.4	2.1		4.4	38.3	5.8		34.9		85.7	85.7	35.1
Level of Service	D	A		A	D	A		C		F	F	D
Approach Delay (s)		6.9			31.9			34.9			69.7	
Approach LOS		A			C			C			E	
Intersection Summary												
HCM 2000 Control Delay			27.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			14.0		
Intersection Capacity Utilization			92.8%				ICU Level of Service			F		
Analysis Period (min)			15									

c Critical Lane Group

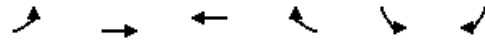
Lanes, Volumes, Timings
7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined Imp. Sat.

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	265	906	1075	225	241	232
Future Volume (vph)	265	906	1075	225	241	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11
Storage Length (ft)	125			100	215	300
Storage Lanes	1			1	1	1
Taper Length (ft)	50				50	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3539	1583	3319	1531
Flt Permitted	0.185				0.950	
Satd. Flow (perm)	345	3539	3539	1583	3319	1531
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				174		210
Link Speed (mph)		30	30		30	
Link Distance (ft)		2398	1357		443	
Travel Time (s)		54.5	30.8		10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	985	1168	245	262	252
Shared Lane Traffic (%)						
Lane Group Flow (vph)	288	985	1168	245	262	252
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2			2		4
Detector Phase	1	2	2	2	4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	7.0	7.0
Minimum Split (s)	8.0	22.3	22.3	22.3	11.5	11.5
Total Split (s)	11.0	56.0	56.0	56.0	23.0	23.0
Total Split (%)	12.2%	62.2%	62.2%	62.2%	25.6%	25.6%
Maximum Green (s)	8.0	48.7	48.7	48.7	18.5	18.5
Yellow Time (s)	3.0	4.2	4.2	4.2	3.0	3.0
All-Red Time (s)	0.0	3.1	3.1	3.1	1.5	1.5
Lost Time Adjust (s)	0.0	-1.2	-1.2	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.1	6.1	7.3	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		
Vehicle Extension (s)	3.0	1.5	1.5	1.5	1.5	1.5
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effect Green (s)	68.1	54.0	54.0	52.8	11.4	11.4
Actuated g/C Ratio	0.76	0.60	0.60	0.59	0.13	0.13
v/c Ratio	0.66	0.46	0.55	0.24	0.63	0.67
Control Delay	14.0	11.5	16.8	7.4	43.7	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	11.5	16.8	7.4	43.7	17.8
LOS	B	B	B	A	D	B
Approach Delay		12.1	15.2		31.0	

Lanes, Volumes, Timings
 7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
 2020 Combined Imp. Sat.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach LOS		B	B		C	
Queue Length 50th (ft)	31	152	250	43	74	22
Queue Length 95th (ft)	#114	221	m283	m51	107	92
Internal Link Dist (ft)		2318	1277		363	
Turn Bay Length (ft)	125			100	215	300
Base Capacity (vph)	435	2124	2124	1000	682	481
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	0.66	0.46	0.55	0.24	0.38	0.52

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

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

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 16.5

Intersection LOS: B

Intersection Capacity Utilization 63.4%

ICU Level of Service B

Analysis Period (min) 15

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

Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Routes 44/202 (West Main Street) & Bickford Dr.



HCM Signalized Intersection Capacity Analysis

7: Routes 44/202 (West Main Street) & Bickford Dr.

Avon Village Center
2020 Combined Imp. Sat.

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	265	906	1075	225	241	232
Future Volume (vph)	265	906	1075	225	241	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	11
Total Lost time (s)	3.0	6.1	6.1	7.3	4.5	4.5
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	3319	1531
Flt Permitted	0.18	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	344	3539	3539	1583	3319	1531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	985	1168	245	262	252
RTOR Reduction (vph)	0	0	0	72	0	183
Lane Group Flow (vph)	288	985	1168	173	262	69
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	1	2	2		4	
Permitted Phases	2			2		4
Actuated Green, G (s)	63.8	52.8	52.8	52.8	11.4	11.4
Effective Green, g (s)	63.8	54.0	54.0	52.8	11.4	11.4
Actuated g/C Ratio	0.71	0.60	0.60	0.59	0.13	0.13
Clearance Time (s)	3.0	7.3	7.3	7.3	4.5	4.5
Vehicle Extension (s)	3.0	1.5	1.5	1.5	1.5	1.5
Lane Grp Cap (vph)	418	2123	2123	928	420	193
v/s Ratio Prot	c0.08	0.28	0.33		c0.08	
v/s Ratio Perm	c0.40			0.11		0.04
v/c Ratio	0.69	0.46	0.55	0.19	0.62	0.36
Uniform Delay, d1	7.0	10.0	10.7	8.6	37.3	35.9
Progression Factor	1.00	1.00	1.41	2.09	1.00	1.00
Incremental Delay, d2	4.7	0.7	0.4	0.2	2.1	0.4
Delay (s)	11.7	10.7	15.6	18.2	39.3	36.4
Level of Service	B	B	B	B	D	D
Approach Delay (s)		10.9	16.1		37.9	
Approach LOS		B	B		D	
Intersection Summary						
HCM 2000 Control Delay			17.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	13.6
Intersection Capacity Utilization			63.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1239	34	17	1231	16	44	1	11	17	0	17
Future Volume (vph)	19	1239	34	17	1231	16	44	1	11	17	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.998				0.850		0.932	
Flt Protected		0.999			0.999			0.953			0.976	
Satd. Flow (prot)	0	3522	0	0	3529	0	0	1775	1583	0	1694	0
Flt Permitted		0.914			0.933			0.850			0.824	
Satd. Flow (perm)	0	3222	0	0	3295	0	0	1583	1583	0	1431	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			3				70		70	
Link Speed (mph)		30			30			15			25	
Link Distance (ft)		769			2398			132			221	
Travel Time (s)		17.5			54.5			6.0			6.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	1347	37	18	1338	17	48	1	12	18	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1405	0	0	1373	0	0	49	12	0	36	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Detector Phase	2	2		1	1 2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	15.0	15.0		7.0			5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	21.4	21.4		11.0			20.3	20.3	20.3	20.3	20.3	
Total Split (s)	64.0	64.0		11.0			25.0	25.0	25.0	25.0	25.0	
Total Split (%)	64.0%	64.0%		11.0%			25.0%	25.0%	25.0%	25.0%	25.0%	
Maximum Green (s)	58.6	58.6		7.0			20.7	20.7	20.7	20.7	20.7	
Yellow Time (s)	4.1	4.1		3.0			3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	1.3	1.3		1.0			1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0						0.0	0.0		0.0	
Total Lost Time (s)		5.4						4.3	4.3		4.3	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None			None	None	None	None	None	
Act Effct Green (s)		64.1			80.5			9.3	9.3		9.3	
Actuated g/C Ratio		0.64			0.80			0.09	0.09		0.09	
v/c Ratio		0.68			0.51			0.34	0.06		0.18	
Control Delay		15.2			3.5			47.6	0.5		4.5	
Queue Delay		0.0			0.0			0.0	0.0		0.0	
Total Delay		15.2			3.5			47.6	0.5		4.5	
LOS		B			A			D	A		A	
Approach Delay		15.2			3.5			38.4			4.5	
Approach LOS		B			A			D			A	
Queue Length 50th (ft)		321			94			30	0		0	
Queue Length 95th (ft)		409			157			64	0		9	
Internal Link Dist (ft)		689			2318			52			141	

Lanes, Volumes, Timings

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

Avon Village Center

2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		2068			2686			327	383		351	
Starvation Cap Reductn		0			0			0	0		0	
Spillback Cap Reductn		0			0			0	0		0	
Storage Cap Reductn		0			0			0	0		0	
Reduced v/c Ratio		0.68			0.51			0.15	0.03		0.10	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 13.3 (13%), Referenced to phase 2:EBWB, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 10.0

Intersection LOS: A

Intersection Capacity Utilization 65.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)



HCM Signalized Intersection Capacity Analysis

Avon Village Center

8: Avon Plaza Drive/Lawrence Ave. & Routes 44/202 (West Main Street)

2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1239	34	17	1231	16	44	1	11	17	0	17
Future Volume (vph)	19	1239	34	17	1231	16	44	1	11	17	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4			4.0			4.3	4.3		4.3	
Lane Util. Factor		0.95			0.95			1.00	1.00		1.00	
Frt		1.00			1.00			1.00	0.85		0.93	
Flt Protected		1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)		3523			3530			1776	1583		1695	
Flt Permitted		0.91			0.93			0.85	1.00		0.82	
Satd. Flow (perm)		3221			3297			1584	1583		1432	
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)	21	1347	37	18	1338	17	48	1	12	18	0	18
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	11	0	33	0
Lane Group Flow (vph)	0	1403	0	0	1372	0	0	49	1	0	3	0
Turn Type	Perm	NA		D.P+P	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	1 2			4			4	
Permitted Phases	2			2			4		4	4		
Actuated Green, G (s)		63.3			78.2			8.1	8.1		8.1	
Effective Green, g (s)		63.3			78.2			8.1	8.1		8.1	
Actuated g/C Ratio		0.63			0.78			0.08	0.08		0.08	
Clearance Time (s)		5.4						4.3	4.3		4.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		2038			2612			128	128		115	
v/s Ratio Prot					c0.08							
v/s Ratio Perm		c0.44			0.33			c0.03	0.00		0.00	
v/c Ratio		0.69			0.53			0.38	0.01		0.03	
Uniform Delay, d1		11.9			4.0			43.6	42.3		42.3	
Progression Factor		1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.9			0.2			1.9	0.0		0.1	
Delay (s)		13.9			4.2			45.5	42.3		42.4	
Level of Service		B			A			D	D		D	
Approach Delay (s)		13.9			4.2			44.9			42.4	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			10.3									HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			100.0									Sum of lost time (s) 13.7
Intersection Capacity Utilization			65.6%									ICU Level of Service C
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
9: Bickford Dr. & Site Driveway #1/Site Driveway #2

Avon Village Center
2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	0	61	116	0	84	61	310	117	101	295	62
Future Volume (vph)	53	0	61	116	0	84	61	310	117	101	295	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	125		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			50			50		
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
Frt		0.928			0.943				0.850		0.974	
Flt Protected		0.977			0.972		0.950			0.950		
Satd. Flow (prot)	0	1689	0	0	1707	0	1770	1863	1583	1770	1814	0
Flt Permitted		0.977			0.972		0.950			0.950		
Satd. Flow (perm)	0	1689	0	0	1707	0	1770	1863	1583	1770	1814	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		176			181			443			384	
Travel Time (s)		4.0			4.1			10.1			8.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	0	66	126	0	91	66	337	127	110	321	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	0	0	217	0	66	337	127	110	388	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 48.7%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

9: Bickford Dr. & Site Driveway #1/Site Driveway #2

Avon Village Center
2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	0	61	116	0	84	61	310	117	101	295	62
Future Volume (Veh/h)	53	0	61	116	0	84	61	310	117	101	295	62
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	0	66	126	0	91	66	337	127	110	321	67
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								443				
pX, platoon unblocked												
vC, conflicting volume	1134	1170	354	1076	1077	337	388			464		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1134	1170	354	1076	1077	337	388			464		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	58	100	90	20	100	87	94			90		
cM capacity (veh/h)	138	164	689	157	186	705	1170			1097		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	124	217	66	337	127	110	388					
Volume Left	58	126	66	0	0	110	0					
Volume Right	66	91	0	0	127	0	67					
cSH	241	233	1170	1700	1700	1097	1700					
Volume to Capacity	0.52	0.93	0.06	0.20	0.07	0.10	0.23					
Queue Length 95th (ft)	67	201	4	0	0	8	0					
Control Delay (s)	34.8	86.4	8.3	0.0	0.0	8.6	0.0					
Lane LOS	D	F	A			A						
Approach Delay (s)	34.8	86.4	1.0			1.9						
Approach LOS	D	F										
Intersection Summary												
Average Delay			17.9									
Intersection Capacity Utilization			48.7%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
10: Bickford Dr. & Climax Road/Main St.

Avon Village Center
2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	18	210	23	16	0	236	188	23	0	236	25
Future Volume (vph)	39	18	210	23	16	0	236	188	23	0	236	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	0		0	100		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
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
Frt		0.894						0.993			0.987	
Flt Protected		0.993			0.971			0.974				
Satd. Flow (prot)	0	1654	0	0	1809	0	0	1802	0	0	1839	0
Flt Permitted		0.993			0.971			0.974				
Satd. Flow (perm)	0	1654	0	0	1809	0	0	1802	0	0	1839	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		271			628			384			208	
Travel Time (s)		6.2			14.3			8.7			4.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	20	228	25	17	0	257	204	25	0	257	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	290	0	0	42	0	0	486	0	0	284	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary

Area Type: Other

Control Type: Roundabout

Intersection Capacity Utilization 64.3%

ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
10: Bickford Dr. & Climax Road/Main St.

Avon Village Center
2020 Combined Imp. Sat.

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Right Turn Channelized													
Traffic Volume (veh/h)	39	18	210	23	16	0	236	188	23	0	236	25	
Future Volume (veh/h)	39	18	210	23	16	0	236	188	23	0	236	25	
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	
Hourly flow rate (vph)	42	20	228	25	17	0	257	204	25	0	257	27	
Approach Volume (veh/h)	290				42				486				284
Crossing Volume (veh/h)	282				503				62				299
High Capacity (veh/h)	1110				931				1319				1095
High v/c (veh/h)	0.26				0.05				0.37				0.26
Low Capacity (veh/h)	912				752				1102				899
Low v/c (veh/h)	0.32				0.06				0.44				0.32
Intersection Summary													
Maximum v/c High	0.37												
Maximum v/c Low	0.44												
Intersection Capacity Utilization	64.3%				ICU Level of Service				C				

Intersection				
Intersection Delay, s/veh	8.5			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	290	42	486	284
Demand Flow Rate, veh/h	296	43	496	290
Vehicles Circulating, veh/h	287	513	63	304
Vehicles Exiting, veh/h	307	45	520	251
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.4	6.2	8.8	8.5
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	296	43	496	290
Cap Entry Lane, veh/h	848	676	1061	834
Entry HV Adj Factor	0.978	0.969	0.980	0.979
Flow Entry, veh/h	290	42	486	284
Cap Entry, veh/h	830	656	1039	816
V/C Ratio	0.349	0.064	0.468	0.348
Control Delay, s/veh	8.4	6.2	8.8	8.5
LOS	A	A	A	A
95th %tile Queue, veh	2	0	3	2

Lanes, Volumes, Timings
11: Climax Road & Bickford Ave. Ext.

Avon Village Center
2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	0	36	21	0	8	40	214	23	8	210	5
Future Volume (vph)	10	0	36	21	0	8	40	214	23	8	210	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.895			0.962			0.989			0.997	
Flt Protected		0.989			0.965			0.993			0.998	
Satd. Flow (prot)	0	1649	0	0	1729	0	0	1829	0	0	1853	0
Flt Permitted		0.989			0.965			0.993			0.998	
Satd. Flow (perm)	0	1649	0	0	1729	0	0	1829	0	0	1853	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		343			134			271			1156	
Travel Time (s)		7.8			3.0			6.2			26.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	0	39	23	0	9	43	233	25	9	228	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	50	0	0	32	0	0	301	0	0	242	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 41.1%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

11: Climax Road & Bickford Ave. Ext.

Avon Village Center

2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	36	21	0	8	40	214	23	8	210	5
Future Volume (Veh/h)	10	0	36	21	0	8	40	214	23	8	210	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	39	23	0	9	43	233	25	9	228	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage (veh)								2			2	
Upstream signal (ft)											1156	
pX, platoon unblocked												
vC, conflicting volume	589	592	230	619	582	246	233			258		
vC1, stage 1 conf vol	248	248		332	332							
vC2, stage 2 conf vol	340	344		288	251							
vCu, unblocked vol	589	592	230	619	582	246	233			258		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	95	96	100	99	97			99		
cM capacity (veh/h)	573	548	809	542	547	793	1335			1307		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	50	32	301	242								
Volume Left	11	23	43	9								
Volume Right	39	9	25	5								
cSH	741	595	1335	1307								
Volume to Capacity	0.07	0.05	0.03	0.01								
Queue Length 95th (ft)	5	4	2	1								
Control Delay (s)	10.2	11.4	1.4	0.3								
Lane LOS	B	B	A	A								
Approach Delay (s)	10.2	11.4	1.4	0.3								
Approach LOS	B	B										
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			41.1%	ICU Level of Service						A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Combined Imp. Sat.

							Ø1	Ø2
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Lane Configurations								
Traffic Volume (vph)	73	159	398	67	156	421		
Future Volume (vph)	73	159	398	67	156	421		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	0.907		0.981					
Flt Protected	0.985					0.987		
Satd. Flow (prot)	1664	0	1827	0	0	1839		
Flt Permitted	0.985					0.676		
Satd. Flow (perm)	1664	0	1827	0	0	1259		
Right Turn on Red		Yes		Yes				
Satd. Flow (RTOR)	95		13					
Link Speed (mph)	35		40			40		
Link Distance (ft)	1156		405			551		
Travel Time (s)	22.5		6.9			9.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	79	173	433	73	170	458		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	252	0	506	0	0	628		
Turn Type	Prot		NA		D.P+P	NA		
Protected Phases	4		1 2		8	1 2 8	1	2
Permitted Phases					1 2			
Detector Phase	4		1 2		8	1 2 8		
Switch Phase								
Minimum Initial (s)	6.0				2.0		2.0	15.0
Minimum Split (s)	20.0				19.0		19.0	20.0
Total Split (s)	22.0				20.0		20.0	39.0
Total Split (%)	21.8%				19.8%		20%	39%
Maximum Green (s)	18.0				17.0		17.0	35.0
Yellow Time (s)	3.0				2.0		2.0	3.0
All-Red Time (s)	1.0				1.0		1.0	1.0
Lost Time Adjust (s)	0.0							
Total Lost Time (s)	4.0							
Lead/Lag	Lag				Lead		Lag	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes
Vehicle Extension (s)	1.5				2.0		2.0	5.0
Recall Mode	None				None		Min	Min
Walk Time (s)	5.0				5.0		5.0	5.0
Flash Dont Walk (s)	11.0				11.0		11.0	11.0
Pedestrian Calls (#/hr)	0				0		0	0
Act Effct Green (s)	12.4		53.1			65.4		
Actuated g/C Ratio	0.14		0.60			0.74		
v/c Ratio	0.80		0.46			0.62		
Control Delay	43.0		12.4			6.9		
Queue Delay	0.0		0.0			0.0		
Total Delay	43.0		12.4			6.9		
LOS	D		B			A		
Approach Delay	43.0		12.4			6.9		
Approach LOS	D		B			A		

Lanes, Volumes, Timings
 12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
 2020 Combined Imp. Sat.

	↖	↗	↑	↘	↙	↓		
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø1	Ø2
Queue Length 50th (ft)	89		143			95		
Queue Length 95th (ft)	182		270			182		
Internal Link Dist (ft)	1076		325			471		
Turn Bay Length (ft)								
Base Capacity (vph)	425		1186			1131		
Starvation Cap Reductn	0		0			0		
Spillback Cap Reductn	0		0			0		
Storage Cap Reductn	0		0			0		
Reduced v/c Ratio	0.59		0.43			0.56		

Intersection Summary

Area Type: Other
 Cycle Length: 101
 Actuated Cycle Length: 88.1
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 15.5 Intersection LOS: B
 Intersection Capacity Utilization 79.6% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

↖ Ø8	↕ Ø1	↕ Ø2	↘ Ø4
20 s	20 s	39 s	22 s

HCM Signalized Intersection Capacity Analysis

12: Rte 167 (Bushy Hill Rd)/Bushy Hill Rd. & Climax Road

Avon Village Center
2020 Combined Imp. Sat.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	73	159	398	67	156	421
Future Volume (vph)	73	159	398	67	156	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		3.0			3.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.91		0.98			1.00
Flt Protected	0.98		1.00			0.99
Satd. Flow (prot)	1664		1826			1838
Flt Permitted	0.98		1.00			0.68
Satd. Flow (perm)	1664		1826			1259
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	173	433	73	170	458
RTOR Reduction (vph)	82	0	5	0	0	0
Lane Group Flow (vph)	170	0	501	0	0	628
Turn Type	Prot		NA		D.P+P	NA
Protected Phases	4		1 2		8	1 2 8
Permitted Phases					1 2	
Actuated Green, G (s)	12.4		52.0			64.3
Effective Green, g (s)	12.4		52.0			64.3
Actuated g/C Ratio	0.14		0.59			0.73
Clearance Time (s)	4.0					
Vehicle Extension (s)	1.5					
Lane Grp Cap (vph)	235		1082			1004
v/s Ratio Prot	c0.10		0.27			c0.09
v/s Ratio Perm						c0.37
v/c Ratio	0.73		0.46			0.63
Uniform Delay, d1	36.0		10.0			5.8
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	9.0		0.1			0.9
Delay (s)	45.1		10.1			6.6
Level of Service	D		B			A
Approach Delay (s)	45.1		10.1			6.6
Approach LOS	D		B			A
Intersection Summary						
HCM 2000 Control Delay			14.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			87.7		Sum of lost time (s)	14.0
Intersection Capacity Utilization			79.6%		ICU Level of Service	D
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings
13: Site Driveway #3/Residential Drive & Bickford Dr.

Avon Village Center
2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	200	25	3	222	3	24	0	2	3	0	3
Future Volume (vph)	3	200	25	3	222	3	24	0	2	3	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.998			0.990			0.932	
Flt Protected		0.999			0.999			0.956			0.976	
Satd. Flow (prot)	0	1833	0	0	1857	0	0	1763	0	0	1694	0
Flt Permitted		0.999			0.999			0.956			0.976	
Satd. Flow (perm)	0	1833	0	0	1857	0	0	1763	0	0	1694	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			328			185			396	
Travel Time (s)		4.4			7.5			4.2			9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	217	27	3	241	3	26	0	2	3	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	247	0	0	247	0	0	28	0	0	6	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 23.8%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

13: Site Driveway #3/Residential Drive & Bickford Dr.

Avon Village Center
2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	200	25	3	222	3	24	0	2	3	0	3
Future Volume (Veh/h)	3	200	25	3	222	3	24	0	2	3	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	217	27	3	241	3	26	0	2	3	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	244			244			488	486	230	487	498	242
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	244			244			488	486	230	487	498	242
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			95	100	100	99	100	100
cM capacity (veh/h)	1322			1322			487	479	809	488	471	796
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	247	247	28	6								
Volume Left	3	3	26	3								
Volume Right	27	3	2	3								
cSH	1322	1322	501	605								
Volume to Capacity	0.00	0.00	0.06	0.01								
Queue Length 95th (ft)	0	0	4	1								
Control Delay (s)	0.1	0.1	12.6	11.0								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	0.1	12.6	11.0								
Approach LOS			B	B								
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			23.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
14: N. Main St./Retail Drive #2 & Bickford Dr.

Avon Village Center
2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	139	0	23	169	20	0	17	22	20	15	61
Future Volume (vph)	67	139	0	23	169	20	0	17	22	20	15	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			50			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
Frt					0.984			0.923			0.914	
Flt Protected		0.984		0.950							0.990	
Satd. Flow (prot)	0	1833	0	1770	1833	0	0	1719	0	0	1686	0
Flt Permitted		0.984		0.950							0.990	
Satd. Flow (perm)	0	1833	0	1770	1833	0	0	1719	0	0	1686	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		328			250			360			304	
Travel Time (s)		7.5			5.7			8.2			6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	151	0	25	184	22	0	18	24	22	16	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	224	0	25	206	0	0	42	0	0	104	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 43.4%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

14: N. Main St./Retail Drive #2 & Bickford Dr.

Avon Village Center
2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	139	0	23	169	20	0	17	22	20	15	61
Future Volume (Veh/h)	67	139	0	23	169	20	0	17	22	20	15	61
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	151	0	25	184	22	0	18	24	22	16	66
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	206			151			605	553	151	575	542	195
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	206			151			605	553	151	575	542	195
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			98			100	96	97	94	96	92
cM capacity (veh/h)	1365			1430			347	410	895	382	416	846
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1							
Volume Total	224	25	206	42	104							
Volume Left	73	25	0	0	22							
Volume Right	0	0	22	24	66							
cSH	1365	1430	1700	594	598							
Volume to Capacity	0.05	0.02	0.12	0.07	0.17							
Queue Length 95th (ft)	4	1	0	6	16							
Control Delay (s)	2.8	7.6	0.0	11.5	12.3							
Lane LOS	A	A		B	B							
Approach Delay (s)	2.8	0.8		11.5	12.3							
Approach LOS				B	B							
Intersection Summary												
Average Delay			4.3									
Intersection Capacity Utilization			43.4%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
15: N. Main St. & Site Driveway #4

Avon Village Center
2020 Combined Imp. Sat.

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	67	22	17	69	23	15
Future Volume (vph)	67	22	17	69	23	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.967		0.891			
Flt Protected	0.964					0.970
Satd. Flow (prot)	1736	0	1660	0	0	1807
Flt Permitted	0.964					0.970
Satd. Flow (perm)	1736	0	1660	0	0	1807
Link Speed (mph)	30		30			30
Link Distance (ft)	248		233			360
Travel Time (s)	5.6		5.3			8.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	24	18	75	25	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	97	0	93	0	0	41
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 20.5%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis 15: N. Main St. & Site Driveway #4

Avon Village Center
2020 Combined Imp. Sat.

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	67	22	17	69	23	15
Future Volume (Veh/h)	67	22	17	69	23	15
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	73	24	18	75	25	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	122	56			93	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	56			93	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	98			98	
cM capacity (veh/h)	859	1011			1501	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	97	93	41			
Volume Left	73	0	25			
Volume Right	24	75	0			
cSH	892	1700	1501			
Volume to Capacity	0.11	0.05	0.02			
Queue Length 95th (ft)	9	0	1			
Control Delay (s)	9.5	0.0	4.6			
Lane LOS	A		A			
Approach Delay (s)	9.5	0.0	4.6			
Approach LOS	A					
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization		20.5%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
16: N. Main St. & Main St.

Avon Village Center
2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	0	0	0	0	0	0	45	0	0	42	40
Future Volume (vph)	41	0	0	0	0	0	0	45	0	0	42	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935											
Flt Protected	0.950											
Satd. Flow (prot)	0	1770	0	0	1863	0	0	1863	0	0	1742	0
Flt Permitted	0.950											
Satd. Flow (perm)	0	1770	0	0	1863	0	0	1863	0	0	1742	0
Link Speed (mph)	30											
Link Distance (ft)	628											
Travel Time (s)	14.3											
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	0	0	0	0	0	0	49	0	0	46	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	45	0	0	0	0	0	49	0	0	89	0
Sign Control	Free											
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 14.7%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

16: N. Main St. & Main St.

Avon Village Center

2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	0	0	0	0	0	0	45	0	0	42	40
Future Volume (Veh/h)	41	0	0	0	0	0	0	45	0	0	42	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	0	0	0	0	0	0	49	0	0	46	43
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	0			0			156	90	0	114	90	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			0			156	90	0	114	90	0
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	94	100	100	94	96
cM capacity (veh/h)	1623			1623			728	778	1085	804	778	1085
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	45	0	49	89								
Volume Left	45	0	0	0								
Volume Right	0	0	0	43								
cSH	1623	1700	778	901								
Volume to Capacity	0.03	0.00	0.06	0.10								
Queue Length 95th (ft)	2	0	5	8								
Control Delay (s)	7.3	0.0	9.9	9.4								
Lane LOS	A		A	A								
Approach Delay (s)	7.3	0.0	9.9	9.4								
Approach LOS			A	A								
Intersection Summary												
Average Delay				9.0								
Intersection Capacity Utilization				14.7%	ICU Level of Service				A			
Analysis Period (min)				15								

Lanes, Volumes, Timings
17: Ensign Drive & N. Main St.

Avon Village Center
2020 Combined Imp. Sat.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	42	45	367	358	0
Future Volume (vph)	0	42	45	367	358	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	50			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1770	1863	1863	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1770	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	636			203	406	
Travel Time (s)	14.5			4.6	9.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	46	49	399	389	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	49	399	389	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	35.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

17: Ensign Drive & N. Main St.

Avon Village Center

2020 Combined Imp. Sat.

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	42	45	367	358	0
Future Volume (Veh/h)	0	42	45	367	358	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	46	49	399	389	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)				203		
pX, platoon unblocked	0.99					
vC, conflicting volume	886	389	389			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	879	389	389			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	93	96			
cM capacity (veh/h)	301	659	1170			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	46	49	399	389		
Volume Left	0	49	0	0		
Volume Right	46	0	0	0		
cSH	659	1170	1700	1700		
Volume to Capacity	0.07	0.04	0.23	0.23		
Queue Length 95th (ft)	6	3	0	0		
Control Delay (s)	10.9	8.2	0.0	0.0		
Lane LOS	B	A				
Approach Delay (s)	10.9	0.9		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			35.5%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
18: Ensign Drive & Main St./Site Driveway #7

Avon Village Center
2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	97	0	27	0	261	106	29	261	0
Future Volume (vph)	0	0	0	97	0	27	0	261	106	29	261	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.971			0.961				
Flt Protected					0.962						0.995	
Satd. Flow (prot)	0	1863	0	0	1740	0	0	1790	0	0	1853	0
Flt Permitted					0.962						0.995	
Satd. Flow (perm)	0	1863	0	0	1740	0	0	1790	0	0	1853	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		692			210			406			373	
Travel Time (s)		15.7			4.8			9.2			8.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	105	0	29	0	284	115	32	284	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	134	0	0	399	0	0	316	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 51.6%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis 18: Ensign Drive & Main St./Site Driveway #7

Avon Village Center
2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	97	0	27	0	261	106	29	261	0
Future Volume (Veh/h)	0	0	0	97	0	27	0	261	106	29	261	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	105	0	29	0	284	115	32	284	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								609				
pX, platoon unblocked												
vC, conflicting volume	718	747	284	690	690	342	284			399		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	718	747	284	690	690	342	284			399		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	70	100	96	100			97		
cM capacity (veh/h)	323	332	755	352	358	701	1278			1160		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	134	399	316								
Volume Left	0	105	0	32								
Volume Right	0	29	115	0								
cSH	1700	395	1278	1160								
Volume to Capacity	0.00	0.34	0.00	0.03								
Queue Length 95th (ft)	0	37	0	2								
Control Delay (s)	0.0	18.7	0.0	1.1								
Lane LOS	A	C		A								
Approach Delay (s)	0.0	18.7	0.0	1.1								
Approach LOS	A	C										
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			51.6%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes, Volumes, Timings
19: Ensign Drive & Site Driveway #5

Avon Village Center
2020 Combined Imp. Sat.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	93	97	197	205	22
Future Volume (vph)	21	93	97	197	205	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890				0.987	
Flt Protected	0.991			0.984		
Satd. Flow (prot)	1643	0	0	1833	1839	0
Flt Permitted	0.991			0.984		
Satd. Flow (perm)	1643	0	0	1833	1839	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	280			373	494	
Travel Time (s)	6.4			8.5	11.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	101	105	214	223	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	124	0	0	319	247	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

19: Ensign Drive & Site Driveway #5

Avon Village Center

2020 Combined Imp. Sat.

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	93	97	197	205	22
Future Volume (Veh/h)	21	93	97	197	205	22
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	101	105	214	223	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)				982		
pX, platoon unblocked						
vC, conflicting volume	659	235	247			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	659	235	247			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	87	92			
cM capacity (veh/h)	394	804	1319			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	124	319	247			
Volume Left	23	105	0			
Volume Right	101	0	24			
cSH	674	1319	1700			
Volume to Capacity	0.18	0.08	0.15			
Queue Length 95th (ft)	17	6	0			
Control Delay (s)	11.5	3.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.5	3.1	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		3.5				
Intersection Capacity Utilization		44.8%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
20: Ensign Drive/Retail Drive #3 & Bickford Dr.

Avon Village Center
2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	159	5	115	187	104	5	108	100	96	99	15
Future Volume (vph)	17	159	5	115	187	104	5	108	100	96	99	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.965			0.936			0.991	
Flt Protected		0.995			0.986			0.999			0.978	
Satd. Flow (prot)	0	1848	0	0	1772	0	0	1742	0	0	1805	0
Flt Permitted		0.995			0.986			0.999			0.978	
Satd. Flow (perm)	0	1848	0	0	1772	0	0	1742	0	0	1805	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			734			494			296	
Travel Time (s)		8.1			16.7			11.2			6.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	173	5	125	203	113	5	117	109	104	108	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	196	0	0	441	0	0	231	0	0	228	0
Sign Control		Yield			Yield			Yield			Yield	
Intersection Summary												
Area Type:	Other											
Control Type:	Roundabout											
Intersection Capacity Utilization 69.0%	ICU Level of Service C											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis
20: Ensign Drive/Retail Drive #3 & Bickford Dr.

Avon Village Center
2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Right Turn Channelized												
Traffic Volume (veh/h)	17	159	5	115	187	104	5	108	100	96	99	15
Future Volume (veh/h)	17	159	5	115	187	104	5	108	100	96	99	15
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
Hourly flow rate (vph)	18	173	5	125	203	113	5	117	109	104	108	16
Approach Volume (veh/h)	196			441			231			228		
Crossing Volume (veh/h)	337			140			295			333		
High Capacity (veh/h)	1063			1241			1099			1066		
High v/c (veh/h)	0.18			0.36			0.21			0.21		
Low Capacity (veh/h)	870			1031			902			873		
Low v/c (veh/h)	0.23			0.43			0.26			0.26		
Intersection Summary												
Maximum v/c High	0.36											
Maximum v/c Low	0.43											
Intersection Capacity Utilization	69.0%			ICU Level of Service					C			

Intersection				
Intersection Delay, s/veh	8.2			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	196	441	231	228
Demand Flow Rate, veh/h	199	450	235	232
Vehicles Circulating, veh/h	343	142	300	339
Vehicles Exiting, veh/h	228	393	242	252
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.3	9.2	7.5	7.8
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	199	450	235	232
Cap Entry Lane, veh/h	802	980	837	805
Entry HV Adj Factor	0.983	0.980	0.982	0.982
Flow Entry, veh/h	196	441	231	228
Cap Entry, veh/h	788	961	822	791
V/C Ratio	0.248	0.459	0.281	0.288
Control Delay, s/veh	7.3	9.2	7.5	7.8
LOS	A	A	A	A
95th %tile Queue, veh	1	2	1	1

Lanes, Volumes, Timings
21: Bickford Dr. & Fisher Drive

Avon Village Center
2020 Combined Imp. Sat.

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	64	292	312	46	34	67
Future Volume (vph)	64	292	312	46	34	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			100	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850	0.910	
Flt Protected	0.950	0.999			0.983	
Satd. Flow (prot)	1681	1768	1863	1583	1666	0
Flt Permitted	0.950	0.999			0.983	
Satd. Flow (perm)	1681	1768	1863	1583	1666	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		734	305		171	
Travel Time (s)		16.7	6.9		3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	317	339	50	37	73
Shared Lane Traffic (%)	10%					
Lane Group Flow (vph)	63	324	339	50	110	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 47.8% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

21: Bickford Dr. & Fisher Drive

Avon Village Center
2020 Combined Imp. Sat.

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	292	312	46	34	67
Future Volume (Veh/h)	64	292	312	46	34	67
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	317	339	50	37	73
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			637			
pX, platoon unblocked						
vC, conflicting volume	389				796	339
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	389				796	339
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				89	90
cM capacity (veh/h)	1170				335	703
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	47	340	339	50	110	
Volume Left	47	23	0	0	37	
Volume Right	0	0	0	50	73	
cSH	1170	1170	1700	1700	513	
Volume to Capacity	0.06	0.06	0.20	0.03	0.21	
Queue Length 95th (ft)	5	5	0	0	20	
Control Delay (s)	8.3	1.1	0.0	0.0	13.9	
Lane LOS	A	A			B	
Approach Delay (s)	2.0		0.0		13.9	
Approach LOS					B	
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			47.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
22: Bickford Dr. & Office Drive

Avon Village Center
2020 Combined Imp. Sat.

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	325	384	1	1	1
Future Volume (vph)	1	325	384	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.932	
Flt Protected					0.976	
Satd. Flow (prot)	0	1863	1863	0	1694	0
Flt Permitted					0.976	
Satd. Flow (perm)	0	1863	1863	0	1694	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		305	332		317	
Travel Time (s)		6.9	7.5		7.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	353	417	1	1	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	354	418	0	2	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	30.3%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

22: Bickford Dr. & Office Drive

Avon Village Center
2020 Combined Imp. Sat.

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	325	384	1	1	1
Future Volume (Veh/h)	1	325	384	1	1	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	353	417	1	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			332			
pX, platoon unblocked	0.99				0.99	0.99
vC, conflicting volume	418				772	418
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	406				764	405
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1140				367	638
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	354	418	2			
Volume Left	1	0	1			
Volume Right	0	1	1			
cSH	1140	1700	466			
Volume to Capacity	0.00	0.25	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.0	12.8			
Lane LOS	A		B			
Approach Delay (s)	0.0	0.0	12.8			
Approach LOS			B			
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			30.3%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center

2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	10	107	102	28	13	106	492	33	9	496	250
Future Volume (vph)	209	10	107	102	28	13	106	492	33	9	496	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	100		0	100		100
Storage Lanes	1		0	1		0	1		0	1		1
Taper Length (ft)	50			25			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.863			0.952			0.991			0.993	0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1608	0	1770	1773	0	1770	1846	0	1770	1757	1504
Flt Permitted	0.728			0.676			0.206			0.325		
Satd. Flow (perm)	1356	1608	0	1259	1773	0	384	1846	0	605	1757	1504
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		116			14			6			4	182
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		332			231			526			680	
Travel Time (s)		7.5			5.3			12.0			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	227	11	116	111	30	14	115	535	36	10	539	272
Shared Lane Traffic (%)												10%
Lane Group Flow (vph)	227	127	0	111	44	0	115	571	0	10	566	245
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		2
Detector Phase	4	4		4	4		1	6		5	2	2
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		3.0	25.0		3.0	25.0	25.0
Minimum Split (s)	29.0	29.0		29.0	29.0		7.0	29.0		7.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		10.0	52.0		7.0	49.0	49.0
Total Split (%)	34.4%	34.4%		34.4%	34.4%		11.1%	57.8%		7.8%	54.4%	54.4%
Maximum Green (s)	27.0	27.0		27.0	27.0		6.0	48.0		3.0	45.0	45.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	5.0
Recall Mode	Min	Min		Min	Min		None	Min		None	Min	Min
Act Effct Green (s)	25.9	25.9		25.9	25.9		40.5	39.5		35.4	33.1	33.1
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.54	0.53		0.47	0.44	0.44
v/c Ratio	0.48	0.20		0.25	0.07		0.37	0.58		0.03	0.73	0.32
Control Delay	26.5	6.6		23.1	15.9		11.0	14.7		7.4	23.5	5.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	26.5	6.6		23.1	15.9		11.0	14.7		7.4	23.5	5.2
LOS	C	A		C	B		B	B		A	C	A
Approach Delay		19.4			21.1			14.0			17.8	
Approach LOS		B			C			B			B	

Lanes, Volumes, Timings

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center

2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	83	3		37	9		23	153		2	224	17
Queue Length 95th (ft)	184	44		94	37		46	304		8	356	60
Internal Link Dist (ft)		252			151			446			600	
Turn Bay Length (ft)	200						100			100		100
Base Capacity (vph)	500	666		464	663		321	1216		334	1083	995
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.45	0.19		0.24	0.07		0.36	0.47		0.03	0.52	0.25

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 74.7

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 17.1

Intersection LOS: B

Intersection Capacity Utilization 67.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

 Ø1	 Ø2	 Ø4
10 s	49 s	31 s
 Ø5	 Ø6	
7 s	52 s	

HCM Signalized Intersection Capacity Analysis

23: Routes 10/202 (Simsbury Road) & Bickford Dr./Mountain View Ave

Avon Village Center
2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	10	107	102	28	13	106	492	33	9	496	250
Future Volume (vph)	209	10	107	102	28	13	106	492	33	9	496	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.95	0.95
Frt	1.00	0.86		1.00	0.95		1.00	0.99		1.00	0.99	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1608		1770	1774		1770	1845		1770	1757	1504
Flt Permitted	0.73	1.00		0.68	1.00		0.21	1.00		0.33	1.00	1.00
Satd. Flow (perm)	1357	1608		1258	1774		384	1845		605	1757	1504
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)	227	11	116	111	30	14	115	535	36	10	539	272
RTOR Reduction (vph)	0	77	0	0	9	0	0	3	0	0	2	99
Lane Group Flow (vph)	227	50	0	111	35	0	115	568	0	10	564	146
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases		4			4		1	6		5	2	
Permitted Phases	4			4			6			2		2
Actuated Green, G (s)	25.9	25.9		25.9	25.9		44.0	39.5		36.0	35.5	35.5
Effective Green, g (s)	25.9	25.9		25.9	25.9		44.0	39.5		36.0	35.5	35.5
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.56	0.51		0.46	0.46	0.46
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	5.0	5.0		5.0	5.0		1.5	5.0		1.5	5.0	5.0
Lane Grp Cap (vph)	451	534		418	589		296	935		287	800	685
v/s Ratio Prot		0.03			0.02		c0.02	0.31		0.00	c0.32	
v/s Ratio Perm	c0.17			0.09			0.20			0.02		0.10
v/c Ratio	0.50	0.09		0.27	0.06		0.39	0.61		0.03	0.70	0.21
Uniform Delay, d1	20.8	17.9		19.0	17.7		11.2	13.7		12.0	17.0	12.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.8	0.2		0.7	0.1		0.3	1.7		0.0	3.6	0.3
Delay (s)	22.7	18.1		19.8	17.8		11.5	15.3		12.0	20.6	13.1
Level of Service	C	B		B	B		B	B		B	C	B
Approach Delay (s)		21.0			19.2			14.7			18.2	
Approach LOS		C			B			B			B	
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)			77.9				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			67.9%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings
 24: Routes 10/202 (Simsbury Road) & Site Driveway #8

Avon Village Center
 2020 Combined Imp. Sat.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	17	20	619	702	10
Future Volume (vph)	12	17	20	619	702	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			75
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.922				0.998	
Flt Protected	0.979			0.998		
Satd. Flow (prot)	1681	0	0	1859	1859	0
Flt Permitted	0.979			0.998		
Satd. Flow (perm)	1681	0	0	1859	1859	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	357			1053	526	
Travel Time (s)	8.1			23.9	12.0	
Confl. Peds. (#/hr)			3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	18	22	673	763	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	0	695	774	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 58.7%	ICU Level of Service B					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

24: Routes 10/202 (Simsbury Road) & Site Driveway #8

Avon Village Center
2020 Combined Imp. Sat.

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	17	20	619	702	10
Future Volume (Veh/h)	12	17	20	619	702	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	18	22	673	763	11
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					526	
pX, platoon unblocked	0.74	0.74	0.74			
vC, conflicting volume	1488	772	777			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1484	511	519			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	96	97			
cM capacity (veh/h)	98	413	770			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	31	695	774			
Volume Left	13	22	0			
Volume Right	18	0	11			
cSH	176	770	1700			
Volume to Capacity	0.18	0.03	0.46			
Queue Length 95th (ft)	15	2	0			
Control Delay (s)	29.8	0.8	0.0			
Lane LOS	D	A				
Approach Delay (s)	29.8	0.8	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay		1.0				
Intersection Capacity Utilization		58.7%		ICU Level of Service		B
Analysis Period (min)		15				

Lanes, Volumes, Timings
25: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Combined Imp. Sat.

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	0	17	2	0	0	13	576	1	0	668	52
Future Volume (vph)	34	0	17	2	0	0	13	576	1	0	668	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.956									0.990	
Flt Protected		0.967			0.950			0.999				
Satd. Flow (prot)	0	1722	0	0	1770	0	0	1861	0	0	1844	0
Flt Permitted		0.967			0.950			0.999				
Satd. Flow (perm)	0	1722	0	0	1770	0	0	1861	0	0	1844	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		582			275			237			1053	
Travel Time (s)		13.2			6.3			5.4			23.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	0	18	2	0	0	14	626	1	0	726	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	55	0	0	2	0	0	641	0	0	783	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 50.8%	ICU Level of Service A											
Analysis Period (min) 15												

HCM Unsignalized Intersection Capacity Analysis

25: Routes 10/202 (Simsbury Road) & Woodford Ave

Avon Village Center
2020 Combined Imp. Sat.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	0	17	2	0	0	13	576	1	0	668	52
Future Volume (Veh/h)	34	0	17	2	0	0	13	576	1	0	668	52
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	0	18	2	0	0	14	626	1	0	726	57
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (ft)	725											
pX, platoon unblocked												
vC, conflicting volume	1409	1410	754	1427	1438	626	783				627	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1409	1410	754	1427	1438	626	783				627	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	68	100	96	98	100	100	98				100	
cM capacity (veh/h)	115	136	409	106	131	484	835				955	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	55	2	641	783								
Volume Left	37	2	14	0								
Volume Right	18	0	1	57								
cSH	150	106	835	955								
Volume to Capacity	0.37	0.02	0.02	0.00								
Queue Length 95th (ft)	38	1	1	0								
Control Delay (s)	42.3	39.5	0.4	0.0								
Lane LOS	E	E	A									
Approach Delay (s)	42.3	39.5	0.4	0.0								
Approach LOS	E	E										
Intersection Summary												
Average Delay	1.8											
Intersection Capacity Utilization	50.8%			ICU Level of Service				A				
Analysis Period (min)	15											

Lanes, Volumes, Timings
26: Woodford Ave & Site Driveway #7

Avon Village Center
2020 Combined Imp. Sat.

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	3	3	49	63	2
Future Volume (vph)	3	3	3	49	63	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.996	
Flt Protected	0.976			0.997		
Satd. Flow (prot)	1694	0	0	1857	1855	0
Flt Permitted	0.976			0.997		
Satd. Flow (perm)	1694	0	0	1857	1855	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	175			205	88	
Travel Time (s)	4.0			4.7	2.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	3	3	53	68	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	0	0	56	70	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 15.0%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

26: Woodford Ave & Site Driveway #7

Avon Village Center
2020 Combined Imp. Sat.

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	3	3	49	63	2
Future Volume (Veh/h)	3	3	3	49	63	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	3	3	53	68	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	128	69	70			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	128	69	70			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	865	994	1531			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	6	56	70			
Volume Left	3	3	0			
Volume Right	3	0	2			
cSH	925	1531	1700			
Volume to Capacity	0.01	0.00	0.04			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	8.9	0.4	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.9	0.4	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization		15.0%		ICU Level of Service		A
Analysis Period (min)		15				

Appendix F

Crash Data Table

UConn Crash Data

Avon Village Center
Avon, Connecticut
1/1/2015 - 5/17/2018

Date Of Crash	Time Of Crash	Severity	No. of Veh.	Town	Mileage	Roadway	Intersecting Roadway	Collision Type	Weather	Light Condition	Road Surface Condition	Contributing Circumstances
1) Route 44 (West Main Street) at Lawrence Avenue												
1/10/2015	14:55:00	Possible Inj.	2	Avon	43.35	West Main St	E JCT LAWRENCE AVE	Angle	Clear	Daylight	Dry	None
7/7/2016	15:11:00	PDO	2	Avon	43.35	West Main Street	E JCT LAWRENCE AVE	Angle	Unknown	Daylight	Wet	None
11/4/2016	13:07:00	PDO	2	Avon	43.21	West Main Street	W JCT LAWRENCE AVE	Angle	Clear	Daylight	Dry	None
2) Route 44 (West Main Street) at Climax Road												
6/12/2015	14:20:00	PDO	2	Avon	43.79	MAIN ST	CLIMAX RD	Front to rear	Clear	Daylight	Dry	None
9/16/2015	14:19:00	Suspected Inj.	4	Avon	43.79	West Main Street	CLIMAX RD	Front to rear	Clear	Daylight	Dry	None
9/25/2015	14:27:00	PDO	2	Avon	43.49	WEST MAIN ST	CLIMAX RD	Angle	Clear	Daylight	Dry	Other
11/2/2015	16:33:00	PDO	2	Avon	43.79	W MAIN ST	CLIMAX RD	Angle	Clear	Dusk	Dry	None
11/3/2015	12:32:00	Possible Inj.	3	Avon	43.79	West Main Street	CLIMAX RD	Front to rear	Clear	Daylight	Dry	None
5/10/2016	16:24:00	PDO	2	Avon	43.79	West Main Street	CLIMAX RD	Angle	Clear	Daylight	Dry	None
12/27/2016	12:39:00	PDO	2	Avon	43.79	West Main Street	CLIMAX RD	Front to rear	Clear	Daylight	Dry	None
4/12/2017	6:51:00	PDO	2	Avon	43.79	West Main Street	CLIMAX RD	Front to rear	Clear	Daylight	Dry	None
8/14/2017	21:22:00	PDO	2	Avon	43.79	W MAIN ST	CLIMAX RD	Angle	Clear	Dark-Not Lighted	Dry	None
8/28/2017	17:29:00	PDO	2	Avon	43.79	West Main Street	CLIMAX RD	Front to rear	Clear	Daylight	Dry	None
10/11/2017	12:14:00	PDO	2	Avon	43.79	WEST MAIN STREET	CLIMAX RD	Other	Clear	Daylight	Dry	None
10/29/2017	16:37:00	PDO	2	Avon	43.79	MAIN ST	CLIMAX RD	Front to rear	Rain	Dark-Lighted	Wet	None
3/19/2018	18:08:00	PDO	2	Avon	43.79	44-E	CLIMAX RD	Front to rear	Clear	Daylight	Dry	None
3) Route 44 (West Main Street) at Ensign Drive and Office Park Driveway												
1/21/2015	10:46:00	PDO	2	Avon	44.06	MAIN ST	ENSIGN DR	Front to rear	Clear	Daylight	Dry	None
4/13/2015	15:32:00	PDO	2	Avon	44.06	West Main St	ENSIGN DR	Angle	Clear	Daylight	Dry	None
6/22/2015	13:36:00	PDO	2	Avon	44.06	MAIN ST	ENSIGN DR	Front to rear	Clear	Daylight	Dry	None
2/26/2016	12:29:00	PDO	2	Avon	44.06	West Main Street	ENSIGN DR	Front to rear	Clear	Daylight	Dry	None
7/10/2016	18:24:00	Possible Inj.	2	Avon	44.06	West Main Street	ENSIGN DR	Front to rear	Clear	Daylight	Dry	None
6/26/2016	3:43:00	PDO	1	Avon	44.06	MAIN ST	ENSIGN DR	Not Applicable	Clear	Dark-Lighted	Dry	None
3/16/2016	19:46:00	PDO	2	Avon	44.06	WEST MAIN ST	ENSIGN DR	Front to rear	Rain	Dark-Lighted	Wet	Weather
11/23/2016	12:40:00	PDO	2	Avon	44.06	West Main Street	ENSIGN DR	Sideswipe, same dir.	Clear	Daylight	Dry	None
6/27/2017	8:53:00	PDO	3	Avon	44.06	West Main Street	ENSIGN DR	Front to rear	Clear	Daylight	Wet	None
1/10/2018	8:33:00	PDO	2	Avon	44.06	44-E	ENSIGN DR	Sideswipe, same dir.	Clear	Daylight	Dry	None
3/20/2018	8:16:00	PDO	2	Avon	44.06	44-E	ENSIGN DR	Front to rear	Clear	Daylight	Dry	None
4) Route 44 (West Main Street) at Woodford Avenue												
12/14/2015	15:06:00	PDO	2	Avon	44.16	West Main Street	unknown	Angle	, Smog, Sm	Daylight	Wet	None
10/17/2016	8:07:00	PDO	3	Avon	44.15	W Main St	unknown	Front to rear	Clear	Daylight	Dry	None
3/13/2017	15:54:00	PDO	2	Avon	0.16	WOODFORD AVE	US 44-WEST MAIN ST	Angle	Clear	Daylight	Dry	None
1/4/2017	16:11:00	PDO	2	Avon	44.14	Woodford Ave	WOODFORD AVE	Angle	Clear	Daylight	Dry	None
3/7/2017	20:42:00	Possible Inj.	2	Avon	44.14	MAIN ST	WOODFORD AVE	Front to rear	Rain	Dark-Lighted	Wet	None
3/31/2017	17:08:00	PDO	2	Avon	44.14	West Main Street	WOODFORD AVE	Front to rear	Rain	Daylight	Wet	Weather
10/27/2017	14:20:00	Possible Inj.	2	Avon	0.16	WOODFORD AVE	US 44-WEST MAIN ST	Front to rear	Clear	Daylight	Dry	None
11/20/2017	17:00:00	PDO	2	Avon	44.14	West Main St	WOODFORD AVE	Angle	Clear	Dark-Not Lighted	Dry	None
12/21/2017	20:02:00	PDO	2	Avon	44.14	MAIN ST	WOODFORD AVE	Front to rear	Clear	Dark-Lighted	Dry	None

5) Route 44 (East/West Main Street) at Route 10/202 (Simsbury Road) and Old Farms Road

3/6/2015	18:13:00	PDO	2	Avon	45.02	West Main Street	RTE 10(WATERVILLE RD)	Front to rear	Clear	Dark-Lighted	Dry	None
4/11/2015	23:06:00	PDO	2	Avon	45.02	East Main Street	RTE 10(WATERVILLE RD)	Front to rear	Clear	Dark-Lighted	Dry	None
8/15/2015	11:04:00	PDO	2	Avon	44.28	MAIN ST	US 202 & RTE 10(SIMSBURY RD)	Front to rear	Clear	Daylight	Dry	None
9/4/2015	5:59:00	PDO	2	Avon	45.04	MAIN ST	WATERVILLE RD	Front to rear	Clear	Daylight	Dry	None
2/1/2016	18:23:00	Suspected Inj.	2	Avon	45.11	AVON MOUNTAIN RD	WATERVILLE RD	Angle	Clear	Dark-Lighted	Dry	None
3/8/2016	12:52:00	PDO	2	Avon	44.28	East Main Street	US 202 & RTE 10(SIMSBURY RD)	Front to rear	Clear	Daylight	Dry	None
9/9/2016	15:36:00	PDO	2	Avon	45.02	MAIN ST	RTE 10(WATERVILLE RD)	Front to rear	Clear	Daylight	Dry	None
9/14/2016	8:58:00	Possible Inj.	2	Avon	44.28	East Main Street	US 202 & RTE 10(SIMSBURY RD)	Front to rear	Clear	Daylight	Dry	None
11/29/2016	16:39:00	PDO	2	Avon	44.28	West Main Street	US 202 & RTE 10(SIMSBURY RD)	Front to rear	Rain	Dusk	Wet	Weather
2/21/2017	10:24:00	PDO	2	Avon	45.02	East Main Street	RTE 10(WATERVILLE RD)	Front to rear	Clear	Daylight	Dry	None
3/25/2017	7:29:00	PDO	1	Avon	45.02	AVON MOUNTAIN RD	RTE 10(WATERVILLE RD)	Not Applicable	Cloudy	Daylight	Wet	None
3/27/2017	17:22:00	PDO	2	Avon	44.28	EAST MAIN STREET	US 202 & RTE 10(SIMSBURY RD)	Front to rear	Clear	Daylight	Dry	None
4/30/2017	22:34:00	PDO	2	Avon	45.02	AVON MOUNTAIN RD	RTE 10(WATERVILLE RD)	Sideswipe, same dir.	Clear	Dark-Lighted	Dry	None
7/5/2017	15:24:00	PDO	2	Avon	44.28	East Main Street	US 202 & RTE 10(SIMSBURY RD)	Front to rear	Clear	Daylight	Dry	None
7/18/2017	14:18:00	PDO	2	Avon	44.28	East Main Street	US 202 & RTE 10(SIMSBURY RD)	Front to rear	Clear	Daylight	Dry	None
8/27/2017	8:45:00	PDO	2	Avon	44.28	East Main Street	US 202 & RTE 10(SIMSBURY RD)	Front to rear	Clear	Daylight	Dry	None
10/29/2017	17:16:00	Possible Inj.	2	Avon	44.28	East Main Street	US 202 & RTE 10(SIMSBURY RD)	Front to rear	Rain	Other	Wet	Weather
12/11/2017	14:58:00	PDO	2	Avon	44.28	MAIN ST	US 202 & RTE 10(SIMSBURY RD)	Angle	Clear	Daylight	Dry	None

6) Route 44 (East/West Main Street) at Avon Village Drive & Private Drive

6/11/2015	19:12:00	PDO	2	Avon	40.62	MAIN ST		Front to rear	Clear	Daylight	Dry	Visual Obst.
5/16/2016	7:26:00	PDO	2	Avon	44.39	MAIN ST	unknown	Front to rear	Clear	Daylight	Dry	None
6/18/2016	12:34:00	Possible Inj.	2	Avon	44.4	MAIN ST	TOWPATH LA(PVT)	Angle	Clear	Daylight	Dry	None
8/4/2016	11:25:00	PDO	2	Avon	44.4	East Main Street	TOWPATH LA(PVT)	Angle	Clear	Daylight	Dry	None
1/8/2016	7:48:00	Suspected Inj.	3	Avon	44.42	MAIN ST	DR TO OLD AVON VILLAGE NO	Angle	Clear	Daylight	Dry	None
10/6/2016	13:47:00	Possible Inj.	2	Avon	44.42	East Main St	DR TO OLD AVON VILLAGE NO	Front to rear	Clear	Daylight	Dry	None
11/22/2016	11:47:00	PDO	2	Avon	44.4	MAIN ST	TOWPATH LA(PVT)	Angle	Clear	Daylight	Dry	None
6/7/2017	13:37:00	Possible Inj.	2	Avon	40.6	MAIN ST	unknown	Front to rear	Clear	Daylight	Dry	None
7/25/2017	15:16:00	PDO	2	Avon	44.41	East Main Street	unknown	Front to rear	Clear	Daylight	Dry	None
7/30/2017	13:02:00	PDO	2	Avon	44.48	East Main Street	unknown	Sideswipe, same dir.	Clear	Daylight	Dry	None
8/7/2017	16:51:00	PDO	2	Avon	44.4	East Main Street	TOWPATH LA(PVT)	Sideswipe, same dir.	Rain	Daylight	Wet	None
9/28/2017	17:45:00	Suspected Inj.	3	Avon	44.42	East Main Street	DR TO OLD AVON VILLAGE NO	Front to rear	Clear	Daylight	Dry	None
1/9/2018	18:06:00	PDO	2	Avon	44.42	44-E	unknown	Front to rear	Clear	Daylight	Dry	None
1/10/2018	7:43:00	PDO	2	Avon	44.42	44-E	unknown	Angle	Clear	Daylight	Dry	None
3/8/2018	16:10:00	PDO	2	Avon	44.44	44-E	unknown	Front to rear	Clear	Daylight	Dry	None

7) Route 44 (East/West Main Street) at River Park Drive & Plaza Drive

4/21/2015	7:35:00	PDO	2	Avon	44.49	MAIN ST	MOUNTAIN VIEW AVE #1(DE)	Sideswipe, same dir.	Rain	Daylight	Wet	None
2/19/2016	8:12:00	PDO	2	Avon	40.65	East Main Street		Sideswipe, same dir.	Clear	Daylight	Dry	None
8/11/2016	15:23:00	Suspected Inj.	2	Avon	44.59	East Main Street	unknown	Front to rear	Rain	Daylight	Wet	None
8/11/2016	16:20:00	Suspected Inj.	2	Avon	44.56	East Main Street	EXIT FR FAIRWAY SHOPS	Angle	Clear	Daylight	Wet	None
1/10/2016	8:59:00	PDO	2	Avon	44.59	East Main Street	unknown	Angle	Rain	Daylight	Wet	None
12/8/2016	17:41:00	PDO	2	Avon	44.59	East Main Street	unknown	Front to rear	Clear	Dark-Lighted	Wet	None
10/25/2017	8:27:00	PDO	2	Avon	44.57	MAIN ST	ENT TO FAIRWAY SHOPS	Front to rear	Cloudy	Daylight	Wet	None
11/22/2017	11:15:00	PDO	2	Avon	44.56	East Main Street	EXIT FR FAIRWAY SHOPS	Front to rear	ain or Free:	Daylight	Wet	None

8) Route 44 (East/West Main Street) at Route 10 (Waterville Road) and Nod Road

1/13/2015	15:29:00	PDO	2	Avon	39.42	WATERVILLE RD	US 44(AVON MOUNTAIN RD)	Front to rear	Clear	Daylight	Dry	None
1/20/2015	14:39:00	PDO	2	Avon	45.02	US route 044	NOD RD	Front to rear	Clear	Daylight	Dry	None
3/6/2015	18:13:00	PDO	2	Avon	45.02	West Main Street	RTE 10(WATERVILLE RD)	Front to rear	Clear	Dark-Lighted	Dry	None
3/26/2015	7:54:00	PDO	2	Avon	44.92	East Main Street		Front to rear	Rain	Daylight	Wet	None

5/21/2015	13:40:00	PDO	2	Avon	45.03	AVON MOUNTAIN RD		Sideswipe, same dir.	Clear	Daylight	Dry	None
10/12/2015	14:34:00	PDO	2	Avon	39.41	Waterville Road		Front to rear	Clear	Daylight	Dry	None
11/11/2015	17:19:00	Possible Inj.	2	Avon	45	East Main St		Front to rear	Clear	Dark-Not Lighted	Dry	None
6/24/2015	21:50:00	Suspected Inj.	2	Avon	39.42	AVON MOUNTAIN RD	US 44(AVON MOUNTAIN RD)	Angle	Clear	Dark-Lighted	Dry	Other
7/14/2016	8:06:00	PDO	3	Avon	45.04	Avon Mountain Road	unknown	Sideswipe, same dir.	Clear	Daylight	Dry	None
9/9/2016	15:36:00	PDO	2	Avon	45.02	MAIN ST	RTE 10(WATERVILLE RD)	Front to rear	Clear	Daylight	Dry	None
2/3/2016	8:28:00	PDO	2	Avon	39.4	WATERVILLE RD	unknown	Front to rear	Rain	Daylight	Wet	None
3/21/2016	18:15:00	PDO	2	Avon	45.03	East Main Street	unknown	Front to rear	Clear	Daylight	Dry	None
4/1/2016	10:41:00	PDO	2	Avon	39.42	NOD RD	US 44(AVON MOUNTAIN RD)	Angle	Rain	Daylight	Wet	None
5/19/2015	10:19:00	PDO	2	Avon	39.42	WATERVILLE RD	US 44(AVON MOUNTAIN RD)	Front to rear	Rain	Daylight	Wet	Other
12/9/2016	9:53:00	PDO	2	Avon	0	NOD RD	US 44-AVON MOUNTAIN RD	Front to rear	Clear	Daylight	Dry	None
12/27/2016	9:41:00	PDO	2	Avon	39.42	Waterville Road	US 44(AVON MOUNTAIN RD)	Front to rear	Clear	Daylight	Wet	None
2/21/2017	10:24:00	PDO	2	Avon	45.02	East Main Street	RTE 10(WATERVILLE RD)	Front to rear	Clear	Daylight	Dry	None
2/12/2017	10:17:00	PDO	2	Avon	39.42	WATERVILLE RD	US 44(AVON MOUNTAIN RD)	Front to rear	Snow	Daylight	Snow	Weather
10/21/2016	13:37:00	PDO	2	Avon	45.02	Avon Mountain Road	NOD RD	Front to rear	Rain	Daylight	Wet	None
2/23/2017	17:35:00	PDO	2	Avon	39.4	WATERVILLE RD	unknown	Front to rear	Clear	Daylight	Dry	None
3/25/2017	7:29:00	PDO	1	Avon	45.02	AVON MOUNTAIN RD	RTE 10(WATERVILLE RD)	Not Applicable	Cloudy	Daylight	Wet	None
4/22/2017	11:22:00	PDO	2	Avon	39.41	WATERVILLE RD	unknown	Front to rear	Rain	Daylight	Wet	None
4/30/2017	22:34:00	PDO	2	Avon	45.02	AVON MOUNTAIN RD	RTE 10(WATERVILLE RD)	Sideswipe, same dir.	Clear	Dark-Lighted	Dry	None
5/18/2017	23:17:00	PDO	2	Avon	0	Nod Rd	US 44-AVON MOUNTAIN RD	Front to rear	Cloudy	Dark-Lighted	Dry	None
6/30/2017	17:47:00	PDO	2	Avon	44.28	WATERVILLE ROAD	US 44-E MAIN ST/JNTHN TRMBLL HV	Sideswipe, same dir.	Rain	Daylight	Wet	None
8/25/2017	12:48:00	PDO	2	Avon	39.42	WATERVILLE RD	BGN OVLP US 44(WEST MAIN ST)	Front to rear	Clear	Daylight	Dry	None
9/5/2017	15:35:00	PDO	2	Avon	45	East Main St	unknown	Front to rear	Clear	Daylight	Dry	None
12/7/2017	14:52:00	PDO	2	Avon	39.42	Waterville Road	US 44(AVON MOUNTAIN RD)	Front to rear	Clear	Daylight	Dry	None
12/13/2017	19:07:00	PDO	2	Avon	45.02	Avon Mountain Road	RTE 10(WATERVILLE RD)	Angle	Clear	Dark-Lighted	Dry	None
12/13/2017	9:32:00	PDO	2	Avon	39.42	Waterville Road	US 44(AVON MOUNTAIN RD)	Angle	Clear	Daylight	Dry	None
12/21/2017	9:43:00	PDO	2	Avon	39.42	Waterville Road	US 44(AVON MOUNTAIN RD)	Front to rear	Clear	Daylight	Dry	None
2/19/2018	16:15:00	PDO	2	Avon	39.43	10-N	unknown	Front to rear	Rain	Daylight	Wet	None
3/26/2018	7:49:00	Possible Inj.	1	Avon	39.42	10-N	NOD RD	Not Applicable	Clear	Daylight	Dry	Glare
9) Route 10/202 (Simsbury Road) at Woodford Avenue												
1/26/2016	18:27:00	Possible Inj.	2	Avon	40.28	SIMSBURY RD	WOODFORD AVE	Angle	Clear	Dark-Lighted	Wet	None
7/24/2016	22:56:00	PDO	1	Avon	40.28	SIMSBURY RD	WOODFORD AVE	Not Applicable	Clear	Dark-Lighted	Dry	None
1/12/2018	18:08:00	PDO	2	Avon	61.03	202-N	WOODFORD AV	Angle	, Smog, Sm	Dark-Lighted	Wet	Weather
10) Route 10/202 (Simsbury Road) at Fisher Drive and Mountain View Avenue												
6/7/2015	12:54:00	Possible Inj.	2	Avon	40.58	SIMSBURY RD	FISHER DR(CDS)	Angle	Clear	Daylight	Dry	None
7/10/2015	12:28:00	PDO	2	Avon	40.58	SIMSBURY RD	FISHER DR(CDS)	Front to rear	Clear	Daylight	Dry	None
1/13/2017	15:41:00	PDO	3	Avon	40.58	SIMSBURY RD	FISHER DR(CDS)	Front to rear	Clear	Daylight	Dry	None
11) Ensign Drive at Fisher Drive												
1/21/2015	8:33:00	Possible Inj.	2	Avon	0.2	FISHER DR	ENSIGN DR	Angle	Clear	Daylight	Dry	None
12) Ensign Drive at Bickford Drive												
12/8/2016	11:49:00	Possible Inj.	2	Avon	0	Bickford Drive	ENSIGN DR	Angle	Clear	Daylight	Dry	None
13) Climax Road at Bickford Drive												
12/14/2016	13:06:00	PDO	2	Avon	0.16	Climax Road	BICKFORD DR (PVT)	Angle	Clear	Daylight	Dry	None
6/19/2017	11:32:00	Possible Inj.	4	Avon	0.16	Climax Road	BICKFORD DR NO 2	Angle	Clear	Daylight	Dry	None
14) Route 167 (Bushy Hill Road) at Climax Road												
4/29/2015	13:34:00	PDO	2	imsbur	5.83	Bushy Hill Road	CLIMAX RD	Front to rear	Clear	Daylight	Dry	None
12/24/2015	9:50:00	PDO	2	imsbur	5.83	BUSHY HILL RD	CLIMAX RD	Front to rear	, Smog, Sm	Daylight	Wet	None
1/6/2016	12:25:00	PDO	2	imsbur	5.82	BUSHY HILL RD		Front to rear	Clear	Daylight	Dry	None
5/9/2016	18:22:00	PDO	2	imsbur	5.83	BUSHY HILL RD	CLIMAX RD	Front to rear	Clear	Daylight	Dry	None

10/29/2015	8:06:00	Possible Inj.	2	imsbur	5.83	BUSHY HILL RD	unknown	Front to rear	Clear	Daylight	Dry	None
10/19/2016	11:07:00	PDO	1	imsbur	0	Climax Road	RT 167-BUSHY HILL RD	Not Applicable	Clear	Daylight	Dry	None
1/11/2017	17:21:00	PDO	2	imsbur	5.83	Bushy Hill Road	CLIMAX RD	Front to rear	Clear	Dark-Not Lighted	Dry	None
3/11/2017	10:25:00	PDO	2	imsbur	5.84	BUSHY HILL RD	unknown	Front to rear	Clear	Daylight	Dry	None
8/7/2017	8:45:00	PDO	2	imsbur	5.83	BUSHY HILL RD	CLIMAX RD	Front to rear	Clear	Daylight	Dry	None
12/9/2017	12:07:00	PDO	1	imsbur	0.01	Climax Rd	unknown	Not Applicable	Snow	Daylight	Snow	Weather

PDO- Property Damage only