WEST MAIN STREET ROAD DIET AND PAVEMENT MARKING STUDY
and
OAK-POPLAR NEIGHBORHOOD TRAFFIC CIRCULATION STUDY

Prepared For:

Town of Carrboro

Durham-Chapel Hill-Carrboro Metropolitan Planning Organization

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DRAFT

Prepared By:

MARTIN ALEXIOU BRYSON

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1 INTRODUCTION AND BACKGROUND

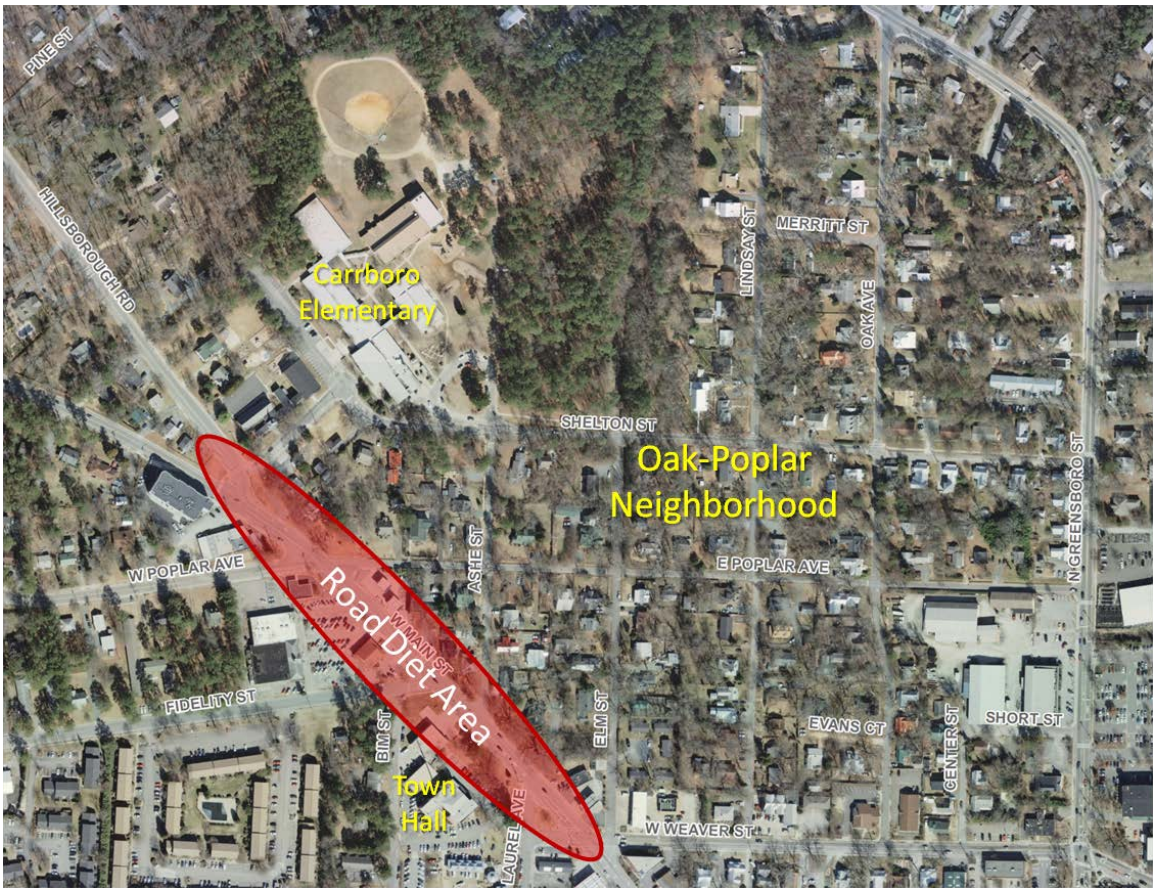
1.1 Purpose of the Study

This study was developed to provide recommendations to address existing and projected multimodal deficiencies for West Main Street between Weaver Street and Hillsborough Road in Carrboro, NC and address traffic concerns in the Oak-Poplar neighborhood. This study has two main parts. The first part is a set of road design recommendations, including a pavement marking and signage plan, for West Main Street. The second part of the study identifies existing and projected traffic and circulation concerns in the adjacent Oak-Poplar neighborhood and provides recommendations for the Town of Carrboro to explore to mitigate traffic issues.

1.2 Project Background and Context

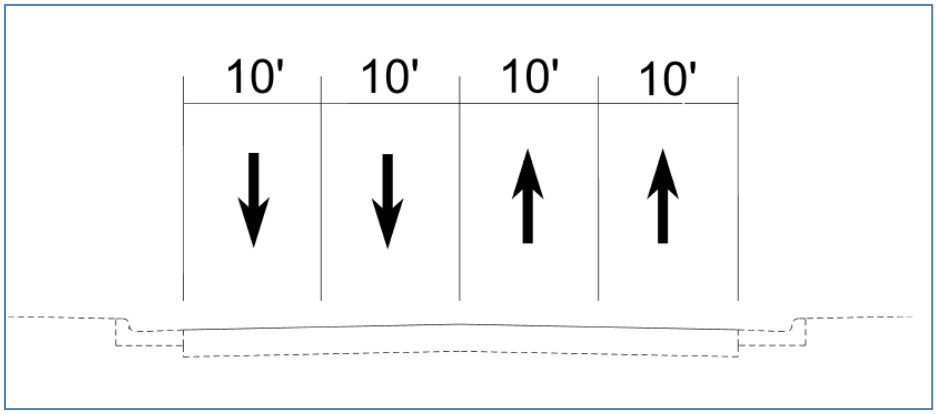
West Main Street is an important street for Carrboro residents, connecting neighborhoods on the west side of town with downtown and providing access to Town Hall and the popular Farmer's Market. West Main Street is listed as State Route 1010. The Study Area for the first part of the project covers the section of West Main Street between Hillsborough Road to the north and Weaver Street to the south. The Study Area for the second portion of this project is the adjacent Oak-Poplar neighborhood which is roughly bounded by West Main Street to the west, Carrboro Elementary and North Greensboro Street to the north, North Greensboro Street to the east, and Weaver Street to the south (see Figure 1).

Figure 1: Study Area



The typical cross-section for the portion of West Main Street in the Study Area is two travel lanes in each direction (see Figure 2). Immediately to the north and south of the Study Area, West Main Street has only one travel lane in each direction. This section of West Main Street does not contain any facilities dedicated to bicyclists. Immediately to the north of the study area, there are bicycle lanes on both sides of West Main Street and Hillsborough Road. There are also bicycle lanes on both sides of Weaver Street east of the Study Area, Poplar Avenue to the west, and a section of West Main Street further south outside of the study area (after the intersection with Jones Ferry Road). Thus, the section of West Main Street in the Study Area represents a gap in the existing bicycle lane network.

Figure 2: Typical West Main Street Cross-Section - Existing



The pavement marking portion of the study analyzed possible "road diet" alignments for West Main Street that would reduce the travel lanes to one in each direction plus provide a continuous, two-way turn lane. This alignment allows room for bike lanes in each direction. The road diet cross-section would also be consistent with immediately adjacent sections of West Main Street. It is anticipatd that changes to the pavement markings associated with a road diet will be implemented after a scheduled resurfacing of West Main Street; therefore no additional costs are associated with the removal of the existing pavement markings in the study area.

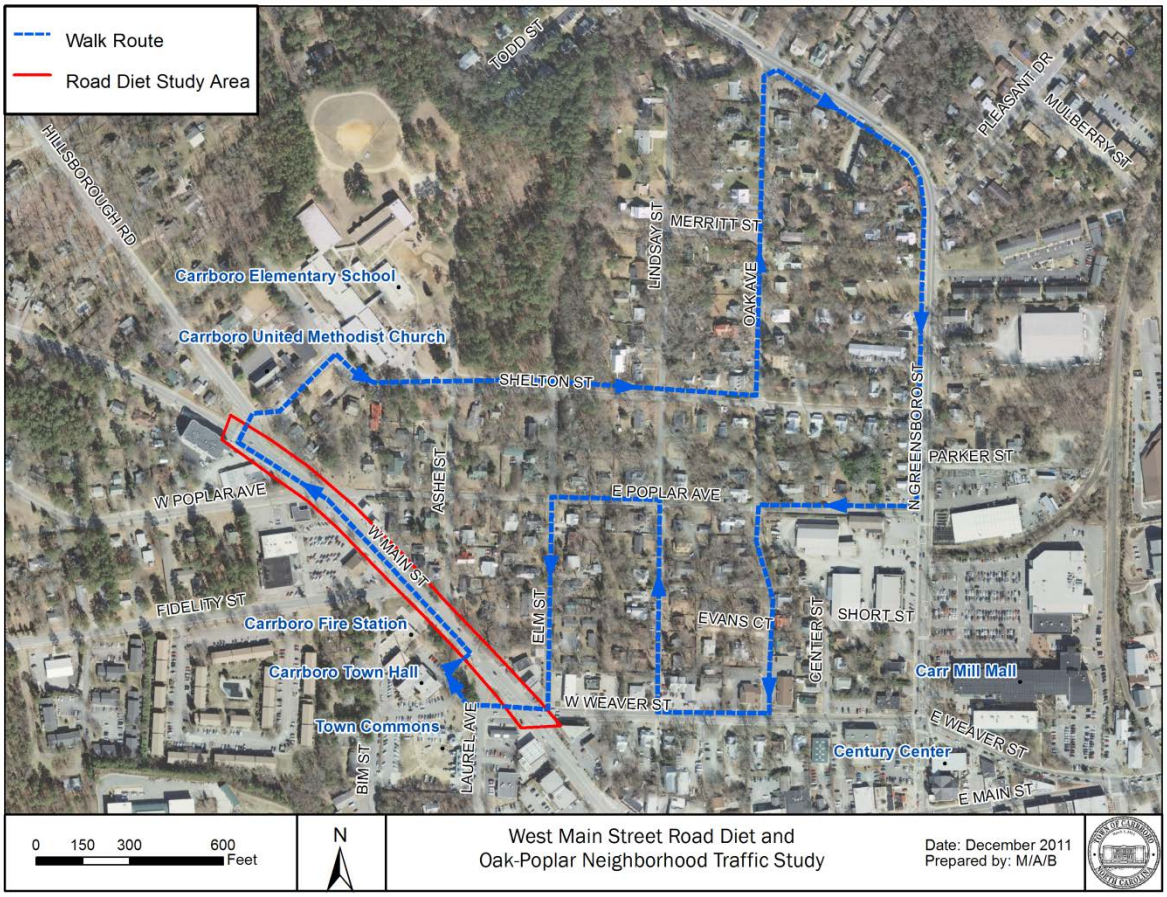
The second portion of the study concerns the 15-block Oak-Poplar neighborhood immediately adjacent to the section of West Main Street in the first part of the study. This neighborhood is residential in character and contains Carrboro Elementary School. The main roads within the neighborhood include Shelton Street (which has a one block, one-way section, westbound between Ashe Street and Hillsborough Road), Poplar Avenue (one-way eastbound), Ashe Street (which has a one block, one-way section, northbound between Poplar Avenue and Shelton Street), Elm Street, Lindsay Street, and Oak Avenue.

The Oak-Poplar Neighborhood Traffic and Circulation Study identified concerns and issues relating to transportation within the neighborhood and any possible impacts that might result from a road diet on West Main Street. This portion of the study includes preliminary recommendations for low-cost, high-yield changes to transportation infrastructure in the neighborhood to improve traffic and circulation issues. Like the road diet portion of the study, this neighborhood traffic study will be focused on multimodal solutions.

1.3 Community Involvement

A critical component of this study is involvement from the community to ensure the issues and concerns that are most important to the neighborhood residents are addressed and that potential solutions will comport with the expectations and desires of the community. In order to foster strong public participation, the project team held a neighborhood walk on November 3, 2011, and a public meeting on December 5, 2011. The neighborhood walk took place at 5:30 pm on a Thursday evening and had ten participants from the neighborhood (see Figure 4). The walk started and ended at Town Hall and took the route shown in Figure 3 through the Oak-Poplar neighborhood. The walk took about an hour and provided detailed feedback from community members on trouble spots, traffic concerns, and neighborhood transportation issues. Project team members also had a chance to ask questions of community members to gauge the importance of different circulation issues in the community.

Figure 3: Neighborhood Walk Route



The public meeting was held on a Monday night at 5:30 pm, at Carrboro Elementary School. Eleven members of the public were present. The meeting lasted about two and a half hours, including time at the beginning and end of the meeting where project team members were available for more informal, one-on-one discussions with community members. The presentation from the project team, which included ample opportunities for comments and feedback from members of the public, took about an hour and a half. The presentation contained a draft pavement marking plan for a road diet on West Main Street and a summary of

feedback and neighborhood traffic concerns heard to date. Figure 5 shows a neighborhood map with participant comments that was part of the public meeting process.

Figure 4: Neighborhood Walk

The neighborhood walk and public meeting generated a number of comments from members of the public about various neighborhood transportation concerns. In addition to input at the walk and the public meeting, a number of comments were received, via email, by project staff. A summary of the comments received regarding the road diet plan and traffic concerns in the Oak-Poplar neighborhood is contained in Appendix 2.

Figure 5: Public Meeting Map Exercise

1.4 Background Resources

In addition to feedback from the public, the project team utilized a number of other resources in this study. Town of Carrboro staff members provided input and their professional judgment of various options. M/A/B staff collected traffic count data, including for pedestrians and bicyclists, along the West Main Street Study Area section. M/A/B staff also made neighborhood traffic observations independent of the neighborhood walk in order to better understand transportation issues in the Oak-Poplar neighborhood (see Figure 6).

Figure 6: Roadway Data Gathering

In addition to community engagement, independent observation, and Town input, M/A/B staff examined existing Town of Carrboro plans and policies to ensure that recommendations are in accordance with other plans and goals. Plans and policies that have been reviewed include:

- Draft Safe Routes to School Strategic Action Plan (December, 2010)
- Town of Carrboro Comprehensive Bicycle Transportation Plan (March, 2009)
- Town of Carrboro Sidewalk Bond Referendum Project List

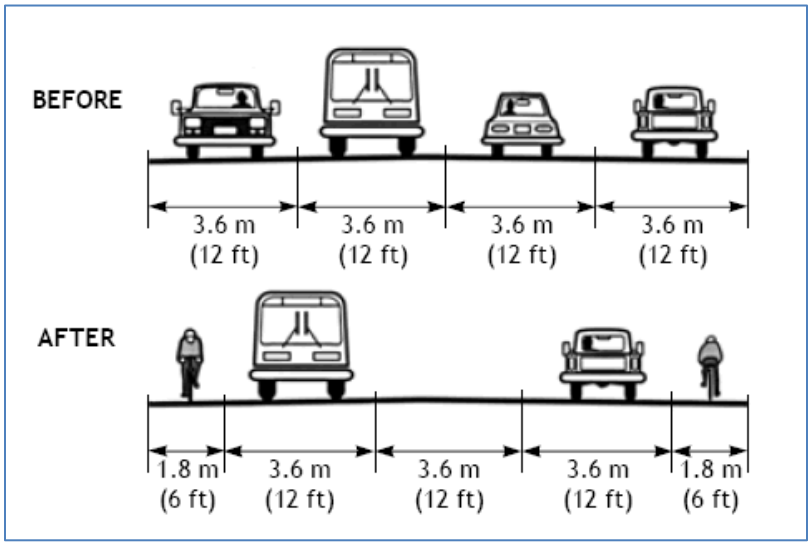
2 WEST MAIN STREET ROAD DIET AND PAVEMENT MARKING STUDY

2.1 Introduction

A road diet is a form of road engineering wherein travel lanes (and sometimes lane width) are reduced in order to improve traffic flow, road safety, and to better accommodate pedestrians and bicyclists. A common road diet is to replace a four lane cross-section (two travel lanes in each direction) with a cross-section featuring two travel lanes (one in each direction), a two-way, center turn lane, and the either bike lanes or on-street parking. The concept can have safety benefits for drivers, pedestrians, and bicyclists. By reducing lanes, drivers no longer can switch lanes and weave around traffic. Average travel speed is often reduced as traffic flows at the speed of the slowest driver. Pedestrians benefit from fewer lanes to cross when crossing the street. If bike lanes are added as part of the road diet, then bicyclists benefit from the additional

infrastructure, reduced vehicle speeds, and the elimination of lane changing. Road diets are also a cost-effective traffic control measure because they do not involve moving curbs and gutters, merely restriping a road section. Typically, the restriping is scheduled to be done after the road is resurfaced, which makes the marginal cost of the road diet essentially zero because the pavement markings would have to be repainted anyway and the only change is the pavement marking design. This is what is proposed on West Main Street. Average daily traffic typically should be less than 20,000 cars per day for a road diet to work. Figure 7 shows typical before and after cross-sections. Figure 8 shows the existing conditions on West Main Street.

Figure 7: Typical Road Diet Before and After Cross-Sections



Source: FHWA

Analyses were performed to assess the feasibility and traffic impacts of a road diet on West Main Street between Weaver Street and Hillsborough Road. Traffic analyses were performed to assess the existing traffic conditions on West Main Street and the conditions anticipated to result should the proposed road diet be implemented. Peak period intersection level of service analyses were performed using traffic data collected in the fall of 2011. To illustrate the potential layout of West Main Street, a concept pavement marking plan was prepared. The findings of the analyses indicate that the pavement markings on West Main Street could be modified to provide a travel lane each direction, a center two-way left-turn lane, and bike lanes on each side of the street and still provide acceptable levels of service at the intersections in the study area. The Town is considering possibly extending the road diet beyond the study area extent south of Weaver Street between Weaver Street and Jones Ferry Road. Based on our assessment, this would likely be feasible.

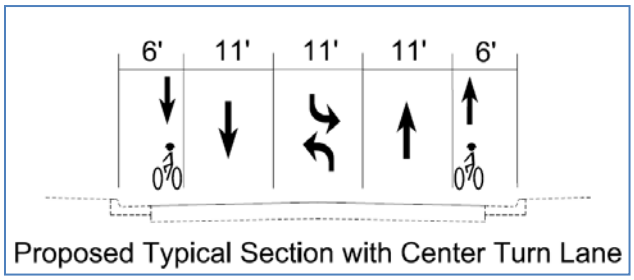
Chapel Hill Transit currently provides transit service on West Main Street on the CW Route. The headways are approximately 30 minutes during peak hours, 60 minutes during off-peak hours, and 90 minutes on Saturdays. It is not anticipated that a road diet on West Main Street would have any impact on transit service or operations nor are any modification to the transit service proposed as part of the road diet.

Figure 8: West Main Street - Existing

2.2 Road Diet Feasibility and Concept Plan

The goal of the road diet for West Main Street is to provide two travel lanes in each direction, a center two-way left-turn lane, and a bike lane in each direction between Weaver Street and Hillsborough Road without widening the existing road. The existing typical section of West Main Street includes two travel lanes in each direction between Weaver Street and Hillsborough Road. North of Hillsborough Road the typical section includes one travel lane in each direction with marked bike lanes in each direction. Field measurements indicate that the desired typical section can be accommodated within the existing curb to curb width of West Main Street. A concept plan for the road diet pavement markings is included in Appendix 1. The typical section that could potentially result from the road diet is illustrated below in Figure 9. It is anticipated that any new pavement markings associated with a road diet will be implemented after a scheduled resurfacing of West Main Street and would therefore not require any additional cost to remove the existing marking or to install the new markings. It is also anticipated that the speed limit on West Main Street will not be reduced as part of the road diet.

Figure 9: Proposed West Main Street Typical Section



It is anticipated that the adjustments in the lane markings on West Main Street due to a road diet may require that the existing traffic signal heads be adjusted to properly align with the approaching vehicles on southbound West Main Street at the intersection with West Weaver Street. The existing traffic signal at the intersection is pre-timed (does not include any vehicle detector loops); therefore no adjustments for vehicle detection will be required.

The draft pavement markings plan also shows a bike box on West Main Street at the intersection with Weaver Street. A bike box can be installed at intersections to allow bicyclists to move to the front of the queue, which improves the visibility of bicyclists to motorists and improves the safety of left and right bicycle turning movements (see Figure 10). Bicyclists can position themselves to more easily make left turns without having to merge into traffic, and the bike box would be painted a solid color to increase visibility. The safety of right turning movements is also improved as motorists are prohibited from turning right on red and are less likely to conflict with bicycle through traffic when turning right on green. Bicycle boxes are relatively new and not yet included within the MUTCD or AASHTO guidelines. Cities such as Portland, Minneapolis, and New York City have successfully implemented bike boxes. Because of the geometry of the intersection at West Main Street and Weaver Street and the relatively low volume of traffic, a bike box is not recommended at this location, although it was examined as an option. If a bike box were to be provided, then it would be painted a solid color to contrast with the asphalt, and consideration could also be given to painting the entire bike lane a solid color to improve visibility (as shown in the bike box example in Figure 10); this would entail higher maintenance costs and require approval from NCDOT.

Figure 10: Bike Box Example

Source: stelsewhere.blogspot.com

2.3 Traffic Data Collection

In order to assess the traffic impacts of a road diet, peak period intersection turning volumes were collected at the following intersections:

- West Main Street at Weaver Street
- West Main Street at Ashe Street
- West Main Street at Fidelity Street
- West Main Street at Poplar Avenue
- West Main Street at Hillsborough Road

West Weaver Street was closed to traffic at the time the traffic data was collected; therefore the data was adjusted based on historical traffic data to reflect conditions that would have been typical with Weaver Street open to traffic.

Daily traffic volume data were also provided by the Town of Carrboro. The daily traffic volumes range from approximately 6,300 vehicles per day between Weaver Street and Ashe Street to approximately 6,000 vehicles per day between Poplar Avenue and Hillsborough Road. Daily traffic volumes are illustrated below in Figure 11.

Figure 11: Average Daily Traffic Volume

*Note that traffic volume data was collected when East Weaver Street was closed. Traffic volumes on West Main Street north of Weaver Street may exceed the volumes indicated in the figure above after Weaver Street is opened to traffic.

2.4 Level of Service Analyses

Peak period intersection level of service analyses were performed for existing conditions on West Main Street and for the conditions anticipated to result should a road diet be implemented. Analyses were also performed to assess the impact of converting the signalized intersection of West Main Street at West Weaver Street to roundabout in addition to implementing a road diet. The results of the level of service (LOS) analyses are illustrated below in Figure 12 and detailed in Table 1.

The analyses indicated that all of the intersections in the study area are currently operating at acceptable (LOS A and B) levels of service during the A.M. peak hour and during the P.M. peak hour of traffic and would be expected to continue to operate at acceptable LOS should the road diet be implemented. The analyses also indicate that the approaches of West Main Street, West Weaver Street, and Elm Street would operate at acceptable LOS if the existing intersections of those streets were to be converted to a roundabout. While the analyses indicated that traffic operations should be acceptable with a roundabout, impacts on adjacent properties and driveways should be more fully assessed before making a recommendation to construct a roundabout at this location. The peak period intersection turning volumes and detailed traffic analysis reports from *Synchro* (intersection analyses) and *Sidra* (roundabout analyses) are provided in Appendix 3.

Implementation of the road diet concept will require that detailed pavement marking plans and traffic signal modification plans (if necessary) be submitted to NCDOT for approval. The necessary design documents will be prepared following the selection of the preferred road diet options by the Town.

Figure 12: Level of Service Analysis

Table 1: Peak Period Intersection Level of Service Results

West Main Street Intersection	Traffic Control	Existing (2011)		Road Diet (2011)	
		AM	PM	AM	PM
Hillsborough Road	Unsignalized	(WB-B)	(WB-B)	(WB-B)	(WB-B)
Poplar Avenue	Unsignalized	(EB-B)	(EB-B)	(EB-B)	(EB-B)
Fidelity Street	Unsignalized	(EB-B)	(EB-B)	(EB-B)	(EB-B)
Ashe Street	Unsignalized	(SB-A)	(WB-A)	(WB-A)	(WB-B)
Weaver Street	Signalized	B (SB-B)	B (NB-B)	B (SB-B)	B (NB-B)
Elm Street	Unsignalized	(SB-A)	(SB-B)	(SB-A)	(SB-B)
Weaver Street/Elm Street Roundabout	Roundabout	-	-	A (SB-A)	A (SB-A)

Legend: X (X-X) = overall intersection LOS for signalized intersection (worst approach – worst approach LOS)
X = Worst LOS for uncontrolled approach at unsignalized intersection

3 OAK-POPLAR NEIGHBORHOOD TRAFFIC AND CIRCULATION STUDY

3.1 Introduction

The Oak-Poplar neighborhood is roughly bounded by West Main Street to the west, Carrboro Elementary and North Greensboro Street to the north, North Greensboro Street to the east, and Weaver Street to the south. It is a mostly residential neighborhood that also includes Carrboro Elementary School, located on Shelton Street. The main roads within the neighborhood include Shelton Street (which has a one block, one-way section, westbound between Ashe Street and Hillsborough Road), Poplar Avenue (one-way eastbound), Ashe Street (which has a one block, one-way section, northbound between Poplar Avenue and Shelton Street), Elm Street, Lindsay Street, and Oak Avenue. The neighborhood streets are primarily arranged in a grid pattern with some variation, particularly at edges to the neighborhood.

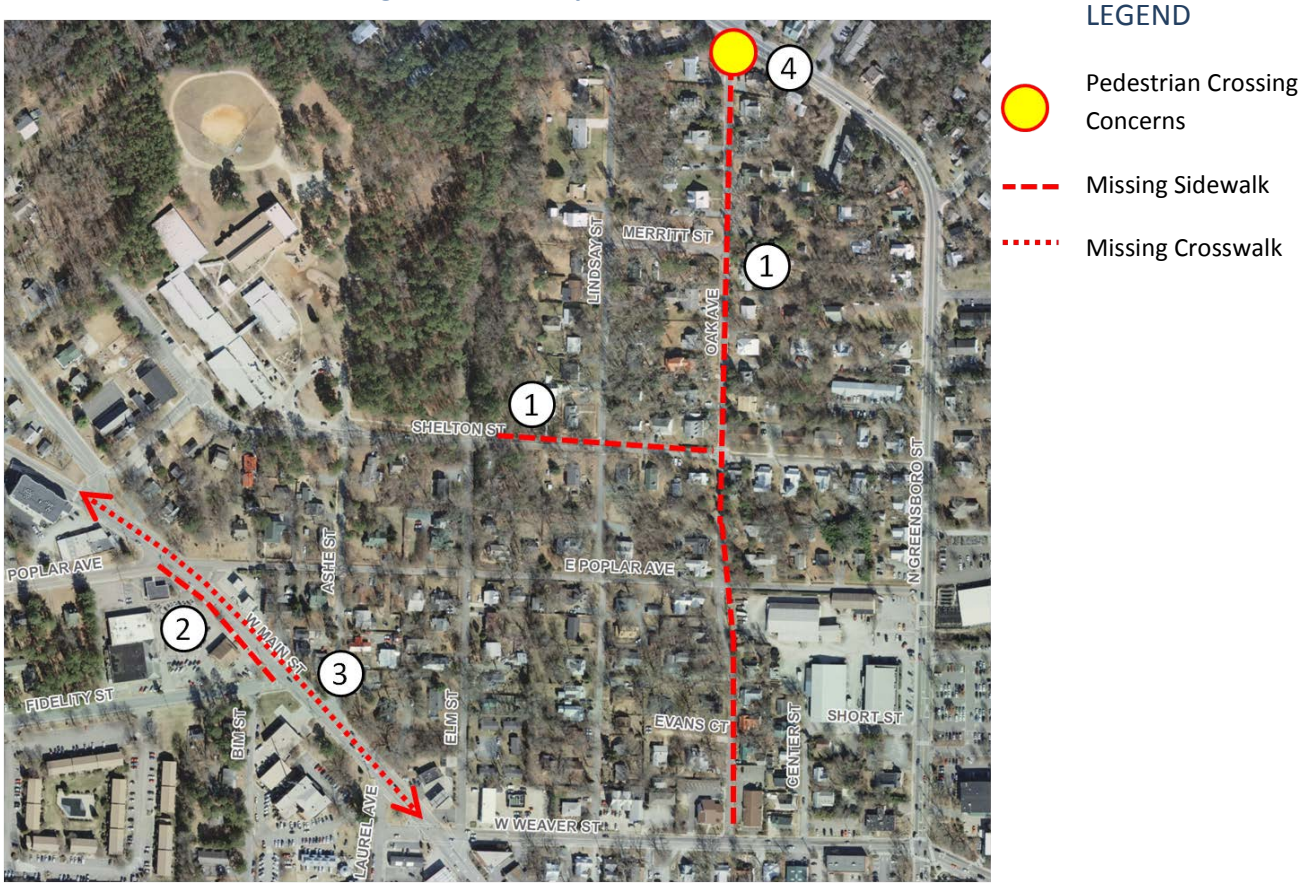
Because the Oak-Poplar neighborhood is older, many of its roads were designed and constructed prior to current engineering standards. Therefore, many of the roads in the neighborhood are narrower than typical roads, and most road segments do not have sidewalks. Additionally, the right-of-way is sometimes narrow on neighborhood streets with houses, trees, and utility poles occasionally close to the roadway. All of this complicates possible multimodal transportation facility improvements, and currently bicyclists, pedestrians, and vehicles often share the same space (see Figure 13). Residents of the neighborhood have voiced a number of concerns about traffic and transportation issues in the neighborhood, which are discussed below grouped by type of concern.

Figure 13: Multimodalism on Oak Avenue

3.2 Pedestrian Issues

Figure 14 shows pedestrian issues identified in the Oak-Poplar neighborhood. Most of the roads within the Oak-Poplar community do not have sidewalks. Ashe Street has a sidewalk on the block between Poplar Avenue and Shelton Street. Shelton Street has sidewalks, except for the portion between the greenway and Oak Avenue. Major roads in the area (North Greensboro Street, Weaver Street, and West Main Street) all have sidewalks on both sides, except for missing segments on the west side of West Main Street between Fidelity Street and Poplar Avenue. Many of the neighborhood streets in this segment are narrow and most lack curbs, meaning pedestrians and vehicles are not separated and travel close to each other.

Figure 14: Oak-Poplar Pedestrian Issues



Based on comments from the public and observations, the lack of sidewalks on key neighborhood roads, Shelton Street and Oak Avenue, was the biggest complaint (Number 1 in Figure 14 and Figure 15). According to members of the neighborhood, these two roads are frequently used by pedestrians both in the neighborhood and by residents outside the neighborhood to cross through the Oak-Poplar neighborhood. Additionally, Carrboro Elementary School is located at the western end of Shelton Street.

On West Main Street, there is a gap in the sidewalk on the western side between Fidelity Street and Poplar Avenue (Number 2 in Figure 14). There is some space to walk in the fitness center parking lot and the chiropractor's office driveway to avoid walking in the street; even so, this section is not very accommodating to pedestrians, particularly those with disabilities or pedestrians with strollers. Additionally, there are no crosswalks on West Main Street between Hillsborough Road and Weaver Street (Number 3 in Figure 14 and Figure 16). This was the top issue cited in public comments concerning West Main Street. Several commenters requested well-marked crosswalks like those on North Greensboro Street at Shelton Street. A road diet would reduce the number of vehicle travel lanes to cross at a mid-block crossing, but would also mean crossing bike lanes and in this case does not reduce the overall width of the crossing. A refuge island in the center or a raised median could potentially be added which could make it more feasible to provide a mid-block crosswalk.

Figure 15: Missing Sidewalks on Shelton Street

Figure 16: Pedestrian Crossing West Main Street

In addition to the pedestrian crossing issues along West Main Street, there were concerns raised about the intersection of Oak Avenue and North Greensboro Street. There is no marked pedestrian crossing here, either for pedestrians trying to cross Oak Avenue while traveling along North Greensboro Street or for pedestrians seeking to cross North Greensboro Street; the closest crossings of North Greensboro Street are Estes Drive to

the west and Shelton Street to the south. There is a striped yellow triangle which attempts to demarcate a traffic island, but this is faded (see Number 4 in Figure 14 and Figure 17). Cars can turn from North Greensboro Street into Oak Avenue at a high speed and pedestrians walking along North Greensboro Street do not have a raised pedestrian refuge while crossing Oak Avenue.

Figure 17: Oak Ave. and N. Greensboro St. Intersection

3.3 School Circulation Concerns

There are a number of circulation issues that are specific to the blocks adjacent to Carrboro Elementary School, and the concerns are largely as a result of trips generated going to and from the school (see Figure 18). Perhaps the primary issue cited here is the lack of traffic control for cars leaving the drop-off circle at Ashe Street and Shelton Street (Number 5 in Figure 18 and Figure 19). The other two streets at the intersection, northbound Ashe Street (one-way) and westbound Shelton Street (one-way west of the intersection), have stops signs. When school is starting or letting out, there is a traffic guard here who helps direct traffic. However, at other times of day, there is no clear indication of how a car leaving the traffic circle should proceed. The lack of appropriate controls may leave drivers unclear whether to stop, yield, or do neither.

Figure 18: School Circulation Concerns

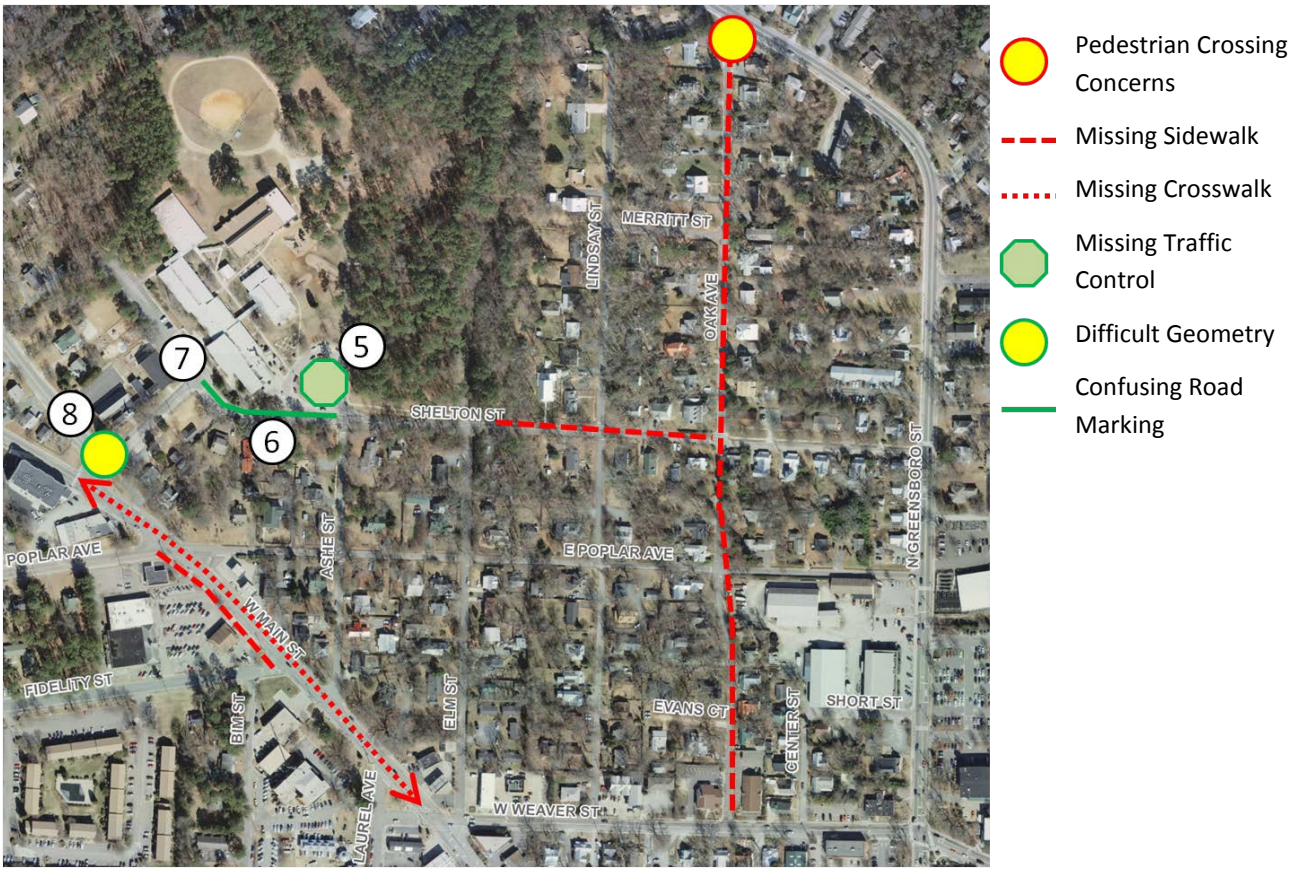


Figure 19: Carrboro Elementary Drop-Off Circle

Shelton Street in front of the school also can be confusing for drivers (Number 6 in Figure 18 and Figure 20). Approaching the school (i.e., east of Ashe Street), Shelton Street is two-way. However, it is one-way in front of

the school with a solid white line separating two lanes. First, it is unclear, initially, that there are two available travel lanes. Second, it is implied from the solid line that it is improper to change lanes. Third, when the two lanes reach a stop sign at the turn in the road on Shelton Street, both lanes are allowed to turn left, yet only one lane exists into which to turn left (Number 7 in Figure 18). This set-up is most likely to aid in pick-up and drop-off during school times when traffic flow is assisted by guards, but it leads to a confusing couple blocks at other times.

Figure 20: Pavement Markings on Shelton Street

The third primary issue around Carrboro Elementary is the road geometry at the intersection of Shelton Street, Hillsborough Road, and West Main Street (Number 8 in Figure 18 and Figure 21). Shelton Street intersects with Hillsborough Road only a few feet from where Hillsborough Road intersects with West Main Street. This leads to a situation where traffic during school drop-off and pick-up times is not permitted to take a left-turn from Shelton Street onto Hillsborough Road because there is not enough queuing space. Some of these cars that are forced to take a right-turn cut through a private driveway on Hillsborough Road to reach West Main Street, despite posted signs directing drivers that the driveway is private and should not be entered. The traffic flow is better here at non-school peak times because there is space for cars to queue up on Shelton Street if needed. Additionally, residents noted some accidents at this intersection because they believe drivers traveling south on Hillsborough Road failed to notice the curve in the road just before the stop sign at Main Street.

Figure 21: Intersection of West Main Street, Hillsborough Road, and Shelton Street

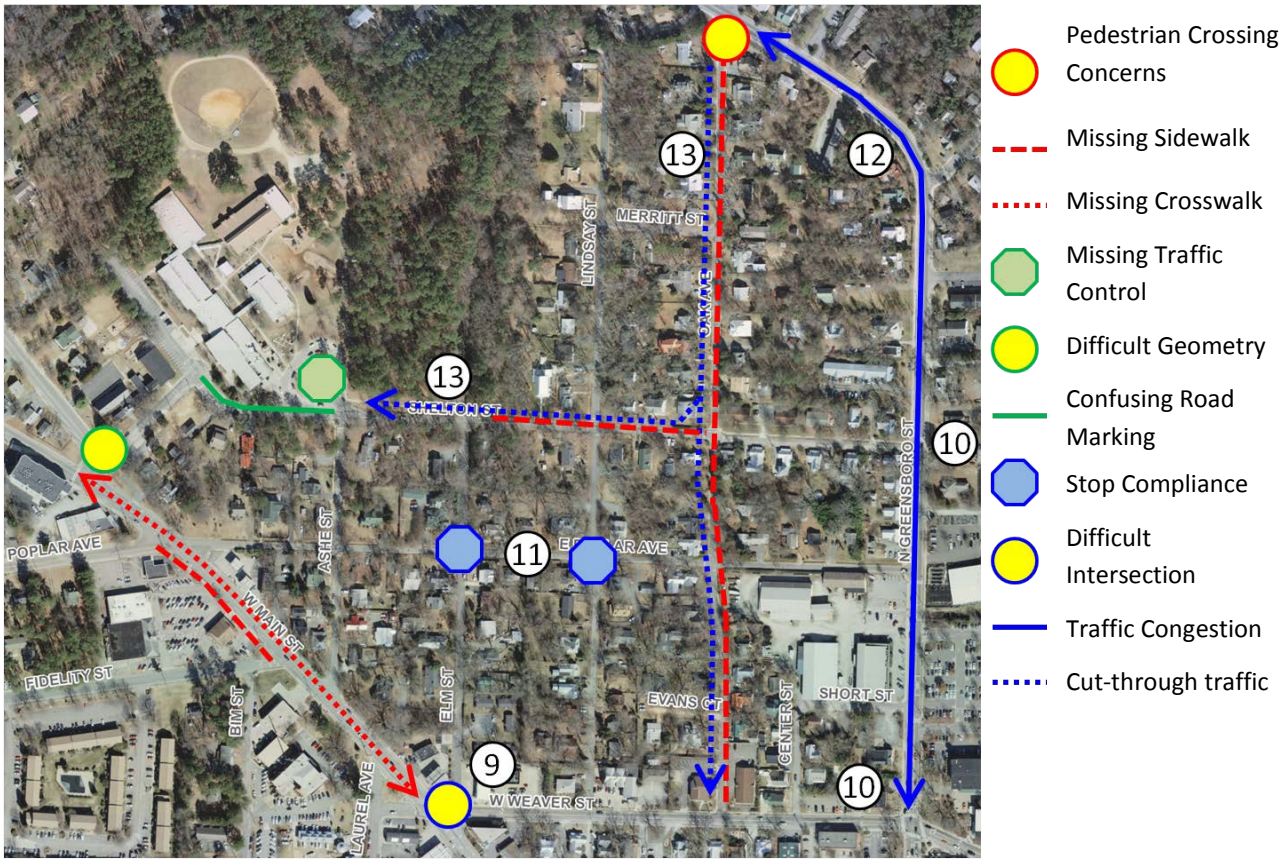
3.4 General Circulation Issues

There are some additional neighborhood traffic and circulation issues which have been highlighted by the public and the project team for additional attention (see Figure 23). A number of public comments cited cut-through traffic as an issue affecting the Oak-Poplar neighborhood. The primary roads that were mentioned as having cut-through traffic were Shelton Street and Oak Avenue, which makes sense based on the road characteristics. These two roads allow drivers to avoid downtown Carrboro when traveling from the north to the west or vice versa (Number 13 in Figure 23 and Figure 22).

Figure 22: Traffic on Poplar Avenue

A number of comments concerned failure to comply with stop signs throughout the Oak-Poplar neighborhood (Number 11 in Figure 23). There are no traffic signals within the neighborhood and all intersections are controlled with stop signs. Many of the public comments received noted that a number of drivers in the neighborhood fail to stop at stop signs and many fail to slow down much at all.

Figure 23: General Circulation Issues



The intersection at Elm Street, West Main Street, and Weaver Street is another intersection with odd geometry (Number 9 in Figure 23). Elm Street intersects with Weaver Street within a few feet of the signalized Weaver Street and West Main Street intersection. There is confusing signage on Weaver Street regarding whether right turns onto West Main Street are permitted during red light cycles. The sign, placed before Elm Street, states, "Stop Here on Red," in order to prevent queued vehicles from blocking Elm Street. However, it is not clear whether drivers can proceed forward to the Main Street intersection to take a right turn if that action would not block Elm Street. All turning movements into and out of Elm Street at this location were noted by some members of the public as difficult.

Traffic on North Greensboro Street can be heavy at peak travel times and queues from the traffic signal at Weaver Street and North Greensboro Street can stretch back to Poplar Avenue (Number 12 in Figure 23). The congestion on this section of North Greensboro Street may be encouraging cut-through traffic into the Oak-Poplar neighborhood to avoid the North Greensboro Street and Weaver Street intersection. Exiting the Oak-Poplar neighborhood at peak travel times can be difficult using any of the eastern egress points – Poplar Avenue, Shelton Street, or Oak Avenue. In particular, left turns to travel northbound on North Greensboro Street were noted by members of the public as particularly hard.

Connected with concerns about traffic on North Greensboro Street, there were many comments received about possible new developments on North Greensboro Street and the potential traffic impacts for the neighborhood resulting from these new developments (Number 10 in Figure 23). The two development proposals currently being considered are for a mixed-use development featuring over 100 apartment units (proposed for North Greensboro Street across from Shelton Street) and a CVS drug store at the corner of Weaver Street and North Greensboro Street. As part of the development review process, the impacts to the surrounding transportation network will be identified and addressed.

3.5 Potential Solutions

There are a variety of possible traffic measures for the Oak-Poplar neighborhood to address the traffic and circulation concerns identified by this study. These possible measures are shown below in a matrix in Table 2, but many need more extensive investigation to determine their feasibility and the possible traffic effects. Note that measures which change traffic patterns on one street may increase traffic on adjacent neighborhood streets.

The matrix shows problems addressed by each potential treatment, expected outcomes, next steps needed to implement the treatment, and a qualitative assessment of affordability, feasibility, and effectiveness. It is important to stress that these qualitative assessments are a high-level expectation based on neighborhood observations and similar projects in other locations; the actual assessment of the project may change after more detailed study of the unique planning and engineering elements of each treatment.

Each qualitative assessment category contains one to three plus signs denoting whether the treatment scores lowly (one plus mark), highly (three plus marks), or somewhere in the middle (two plus marks) for that category. Affordability scores are classified as: + means greater than $50,000 expected cost, ++ means between $10,000 and $50,000 expected cost, and +++ means less than $10,000 expected cost (note: detailed cost estimates were not completed for this study). Feasibility is a low (+), medium (++), or high (+++) ranking of the engineering, technical, and approval challenges posed by the project. Effectiveness is a low (+), medium (++), or high (+++) assessment of the degree to which the potential treatment solves the particular problems it seeks to address.

For example, a chicane on Shelton Street (introducing a horizontal “jog” or shift into an otherwise straight section of roadway) scores “+” for affordability, “+” for feasibility, and “++” for effectiveness. This means that this type of treatment is expected to cost more than $50,000, have a high degree of engineering and/or regulatory approval concerns, and be moderately effective at accomplishing the stated goals, in this case reducing traffic speeds. For an example of a chicane, see Figure 24.

Figure 24: Chicane Example

Source: walkinginfo.org

Table 2: Potential Solutions Matrix

Potential Solution	Problem(s) Addressed	Expected Outcomes and Impacts	Affordability [1]	Feasibility [1]	Effectiveness [1]	Next Steps
Oak Avenue One-Way	▪ Cut through traffic ▪ Limited space for autos and pedestrians on Oak Avenue	▪ Less cut through traffic ▪ Increased travel distance for residents ▪ Possible level of service impacts at intersections	++	+	++	Detailed Traffic Impact Analysis report
Traffic calming: traffic humps or speed tables on Oak Avenue	▪ Speeding ▪ Cut through traffic	▪ Slower traffic	++	++	++	Detailed engineering study on possible locations
Traffic calming: chicanes or traffic circles on Shelton Street	▪ Speeding ▪ Cut through traffic	▪ Slower traffic	+	+	++	Detailed treatment location / traffic impact study
Raised Pedestrian Islands at the North Greensboro Street and Oak Avenue intersection and the West Main Street and Weaver Street intersection	▪ Pedestrian discomfort at crossings	▪ Slower traffic ▪ Safer pedestrian crossings	++	+++	++	Town and NCDOT approval
Close Elm Street and Weaver Street intersection to vehicle traffic	▪ Difficult turning movements into and out of Elm Street	▪ Better traffic operations at Weaver Street and West Main Street ▪ Increased travel distance for residents of Elm Street ▪ Possible increase in traffic on neighboring streets	++	+	++	Traffic Impact Analysis report

Potential Solution	Problem(s) Addressed	Expected Outcomes and Impacts	Affordability [1]	Feasibility [1]	Effectiveness [1]	Next Steps
Reconstruct Shelton Street / Hillsborough Road / West Main Street intersection	▪ Lack of queue space on Hillsborough Road between West Main Street and Shelton Street ▪ Difficult turning movements ▪ Right only from Shelton Street during school drop-off and pick-up	▪ Better traffic movements, particularly from Shelton Street ▪ Possible increase in traffic on neighboring streets	+	+	+++	Planning and engineering study of traffic impacts, capital costs, new road alignments, and new traffic patterns.
Construct sidewalks on Oak Avenue, Shelton Street, and/or Elm Street (Note: Construction of a sidewalk on Elm Street is anticipated to begin in April/May 2012 and be completed in September 2012.)	▪ Pedestrians and vehicles having to share the same space on neighborhood streets	▪ Increased pedestrian safety and comfort ▪ May require new right-of-way acquisition and/or relocating utilities	+	++	+++	Detailed sidewalk layout study to determine sidewalk alignments and impacts on properties, right-of-way, trees, and utilities.
Mid-block, marked , pedestrian crossings on West Main Street (possibly with raised, pedestrian refuge islands)	▪ Haphazard pedestrian crossings ▪ Lack of marked crossings on West Main Street	▪ Increased pedestrian safety and comfort	+++ (++ if raised refuge islands are used)	+++	+++	Location study and NCDOT approval

[1] Scoring:

Score	Affordability	Feasibility	Effectiveness
+	Cost > $50,000	Low	Low
++	Cost $10,000 - $50,000	Moderate	Moderate
+++	Cost < $10,000	High	High

APPENDIX 1: DRAFT PAVEMENT MARKING PLAN

Figure 27 shows a possible pavement marking plan for a road diet on Main St., and Figure 25 shows a close-up view of the typical section for the road diet pavement marking plan. The plan shows one travel lane in each direction with a shared center turn lane and bike lanes in each direction. There is some possibility for alternative plans as well. For example, parking could possibly be added in front of Town Hall, although that would possibly require eliminating one or more of the bike lanes in this portion. Also, Figure 26 shows a bike box concept which could be included in a restriping project, but is not recommended in this particular case because of the geometry of the intersection at West Main Street and Weaver Street. Bike lanes could be painted a solid color to increase visibility, but this involves higher maintenance costs and NCDOT approval. It is anticipated that any revisions to the existing pavement markings associated with the road diet will be implemented following the scheduled repaving of West Main Street which would reduce the costs.

Figure 25: Road Diet Typical Section

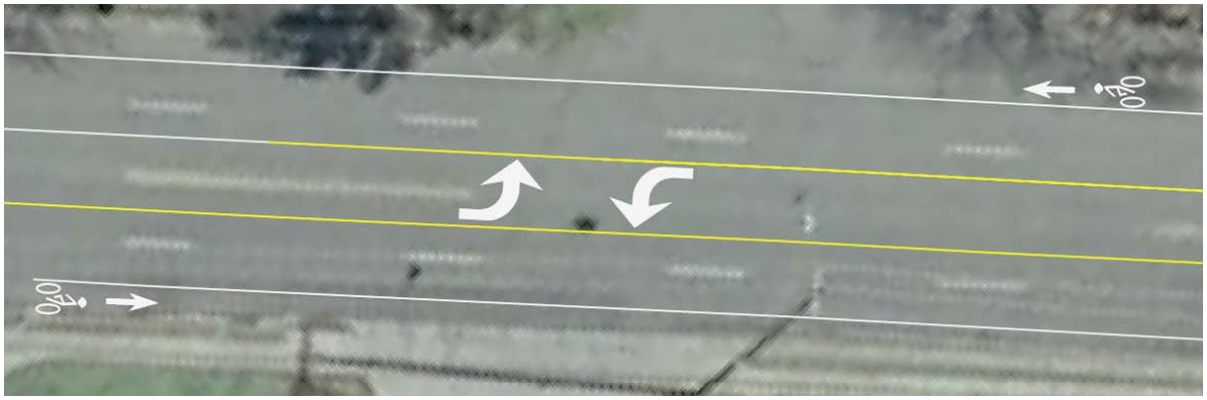


Figure 26: Bike Box Concept

Figure 27: Road Diet Pavement Marking Plan

APPENDIX 2: COMMENTS FROM THE PUBLIC

The following comments were received from the public during this process.

On the Neighborhood Walk:

- Crossing West Main Street as a pedestrian is difficult without any marked crossings, but many people make this crossing.
- The drop-off circle at Carrboro Elementary School is dangerous and several members of the walk commented on nearly having accidents with cars exiting the circle.
- The solid white line on Shelton Street in front of Carrboro Elementary School was noted as being confusing.
- Cut-through traffic is a problem, particularly on Oak Avenue and Shelton Street.
- Drivers sometimes fail to properly observe stop signs in the neighborhood by coming to a complete stop; some drivers barely slow down.
- A couple participants on the walk expressed a desire for Oak Avenue to be one-way.
- Several participants expressed a desire for speed humps on Oak Avenue, and speed humps larger than the one currently on Oak Avenue between Poplar Avenue and Weaver Street.
- The Oak Avenue and North Greensboro Street intersection was described by a couple of participants as difficult both for drivers and pedestrians.
- Many participants in the walk expressed concern over the possible traffic effects of proposed new development at North Greensboro Street across from Shelton Street.
- Turning movements from Elm Street onto Weaver Street or into Elm Street were described as difficult.
- A number of participants expressed a desire for sidewalks along Oak Avenue, or at least space demarcated for pedestrians to provide some separation from vehicles traveling in the road.
- Several comments expressed concern over the speed of traffic traveling through the neighborhood.

At the Public Meeting:

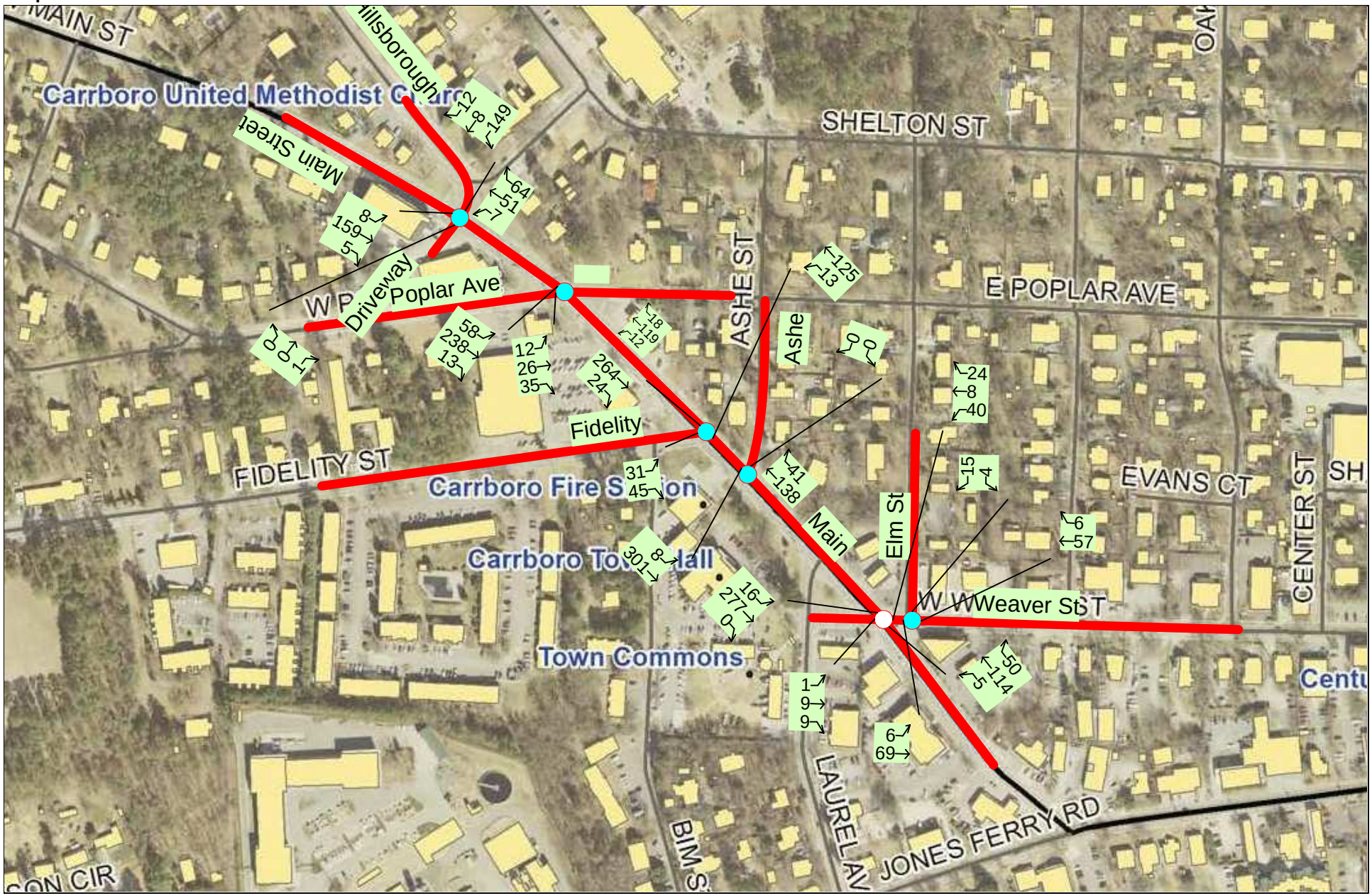
- Several members of the public expressed a desire to have some sort of “gateway” treatment at the north end of North Greensboro Street to signal to drivers that they are entering the downtown area and should proceed slowly and with caution.
- Several attendees expressed a desire to have crosswalks installed on West Main Street in the Road Diet Study Area section.
- Concerns were raised about the possible traffic and transportation impacts of new developments on North Greensboro Street across from Shelton Street and the proposed new CVS at North Greensboro Street and Weaver Street.
- Stop sign compliance was noted as a problem for neighborhood streets.
- Cut-through traffic was cited by a couple participants as a problem, particularly on Oak Avenue and Shelton Street.
- Town staff noted that bus headways are 30-minute peak and 60-minute off-peak for service along West Main Street in the Study Area.
- A couple participants noted that the intersection of Shelton Street, Hillsborough Road, and West Main Street is dangerous and they have observed accidents here when drivers were unaware of the turn in Hillsborough road before West Main Street.

- Several participants commented that drivers sometimes speed through the neighborhood and the existing stop signs do not appear to be effective devices for reducing vehicle speeds.

APPENDIX 3: SYNCHRO AND SIDRA REPORTS FOR STUDY INTERSECTIONS

The following pages contain the Synchro traffic analysis for the peak period turning movements in the study Area.

Map - West Main Street Road Diet



MAB

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	149	8	12	7	51	64	8	159	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	1	166	9	13	8	57	71	9	177	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1289				
pX, platoon unblocked												
vC, conflicting volume	287	341	179	271	272	57	182			128		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	287	341	179	271	272	57	182			128		
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	75	99	99	99			99		
cM capacity (veh/h)	643	574	863	675	627	1010	1393			1458		

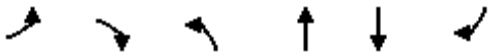
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	1	188	64	71	191
Volume Left	0	166	8	0	9
Volume Right	1	13	0	71	6
cSH	863	689	1393	1700	1458
Volume to Capacity	0.00	0.27	0.01	0.04	0.01
Queue Length 95th (ft)	0	28	0	0	0
Control Delay (s)	9.2	12.2	1.0	0.0	0.4
Lane LOS	A	B	A		A
Approach Delay (s)	9.2	12.2	0.5		0.4
Approach LOS	A	B			

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	37.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	26	35	0	0	0	12	119	18	58	238	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	29	39	0	0	0	13	132	20	64	264	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1006				
pX, platoon unblocked												
vC, conflicting volume	493	579	139	483	577	76	279			152		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493	579	139	483	577	76	279			152		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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	93	96	100	100	100	99			95		
cM capacity (veh/h)	439	401	883	404	403	970	1281			1426		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	81	79	86	197	147
Volume Left	13	13	0	64	0
Volume Right	39	0	20	0	14
cSH	554	1281	1700	1426	1700
Volume to Capacity	0.15	0.01	0.05	0.05	0.09
Queue Length 95th (ft)	13	1	0	4	0
Control Delay (s)	12.6	1.4	0.0	2.8	0.0
Lane LOS	B	A		A	
Approach Delay (s)	12.6	0.7		1.6	
Approach LOS	B				

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	27.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	31	45	13	125	264	24
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	34	50	14	139	293	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				568		
pX, platoon unblocked						
vC, conflicting volume	405	160	320			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	405	160	320			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	94	99			
cM capacity (veh/h)	567	857	1237			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	34	50	61	93	196	124
Volume Left	34	0	14	0	0	0
Volume Right	0	50	0	0	0	27
cSH	567	857	1237	1700	1700	1700
Volume to Capacity	0.06	0.06	0.01	0.05	0.12	0.07
Queue Length 95th (ft)	5	5	1	0	0	0
Control Delay (s)	11.8	9.5	2.0	0.0	0.0	0.0
Lane LOS	B	A	A			
Approach Delay (s)	10.4		0.8		0.0	
Approach LOS	B					

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	138	41	8	301
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	153	46	9	334
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			
pX, platoon unblocked						
vC, conflicting volume	361	99			199	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	361	99			199	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	607	937			1371	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	102	97	120	223
Volume Left	0	0	0	9	0
Volume Right	0	0	46	0	0
cSH	1700	1700	1700	1371	1700
Volume to Capacity	0.00	0.06	0.06	0.01	0.13
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.6	0.0
Lane LOS	A			A	
Approach Delay (s)	0.0	0.0		0.2	
Approach LOS	A				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		

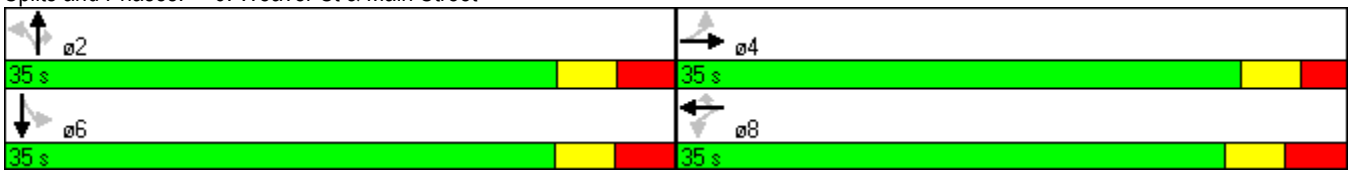
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	9	9	40	8	24	5	114	50	16	277	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	10	10	11	12	12	10	9	12
Storage Length (ft)	0		0	0		0	50		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	0		0	0		0	100		100	0		0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.936				0.850			0.850			
Flt Protected		0.998			0.960		0.950			0.950		
Satd. Flow (prot)	0	1856	0	0	1669	1478	1711	1863	1583	1652	1676	0
Flt Permitted		0.986			0.748		0.573			0.676		
Satd. Flow (perm)	0	1834	0	0	1300	1478	1032	1863	1583	1175	1676	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		157			63			401			437	
Travel Time (s)		4.3			1.7			10.9			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	10	10	44	9	27	6	127	56	18	308	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	53	27	6	127	56	18	308	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	32.6	32.6		33.5	33.5	33.5	29.2	29.2	29.2	29.4	29.4	
Total Split (s)	35.0	35.0	0.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	29.4	29.4		28.5	28.5	28.5	28.8	28.8	28.8	28.6	28.6	
Yellow Time (s)	3.1	3.1		3.2	3.2	3.2	3.1	3.1	3.1	3.2	3.2	
All-Red Time (s)	2.5	2.5		3.3	3.3	3.3	3.1	3.1	3.1	3.2	3.2	
Lost Time Adjust (s)	-2.0	-0.6	-2.0	-2.0	-1.5	-1.5	-1.2	-1.2	-1.2	-1.4	-1.4	-2.0
Total Lost Time (s)	3.6	5.0	2.0	4.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	4	4		4	4	4	7	7	7	5	5	
Act Effct Green (s)		13.6			14.5	14.5	25.7	25.7	25.7	25.7	25.7	
Actuated g/C Ratio		0.34			0.36	0.36	0.64	0.64	0.64	0.64	0.64	
v/c Ratio		0.03			0.11	0.05	0.01	0.11	0.05	0.02	0.29	
Control Delay		9.6			10.0	9.5	9.6	8.8	9.0	9.6	9.7	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		9.6			10.0	9.5	9.6	8.8	9.0	9.6	9.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A			A	A	A	A	A	A	A	
Approach Delay		9.6			9.8			8.9			9.7	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)		3			8	4	1	15	6	2	41	
Queue Length 95th (ft)		14			29	17	8	62	33	15	149	
Internal Link Dist (ft)		77			1			321			357	
Turn Bay Length (ft)							50		100			
Base Capacity (vph)		1475			1045	1188	830	1498	1273	945	1347	
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		0.01			0.05	0.02	0.01	0.08	0.04	0.02	0.23	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 39.9
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.29
Intersection Signal Delay: 9.5 Intersection LOS: A
Intersection Capacity Utilization 37.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Weaver St & Main Street



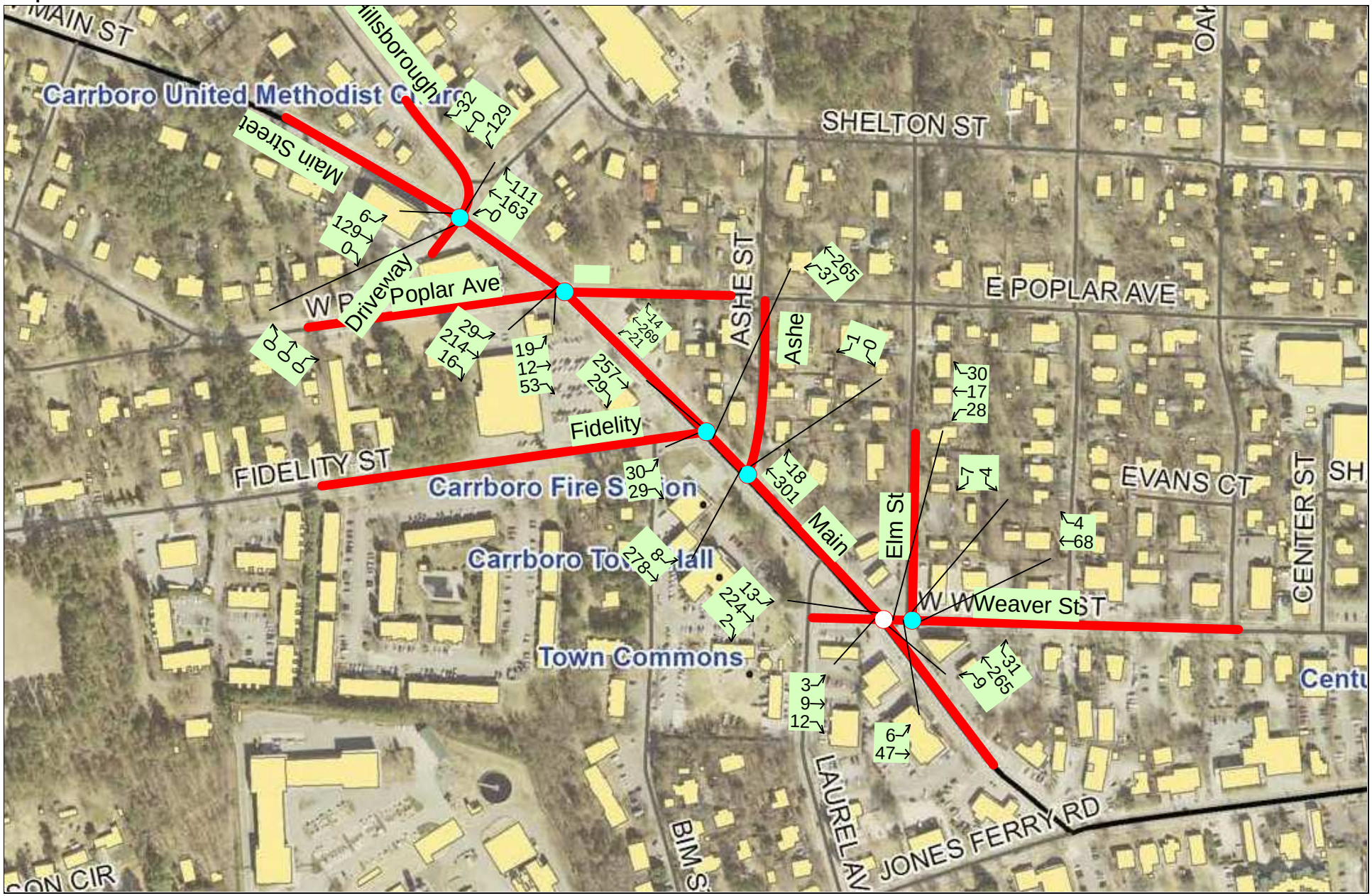
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	6	69	57	6	4	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	77	63	7	4	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		63				
pX, platoon unblocked						
vC, conflicting volume	70				153	63
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	70				153	63
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				99	98
cM capacity (veh/h)	1531				835	1001

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	83	63	7	21
Volume Left	7	0	0	4
Volume Right	0	0	7	17
cSH	1531	1700	1700	961
Volume to Capacity	0.00	0.04	0.00	0.02
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	0.6	0.0	0.0	8.8
Lane LOS	A			A
Approach Delay (s)	0.6	0.0		8.8
Approach LOS				A

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

West Main Street Road Diet **Existing PM without Weaver Open**

Map - West Main Street Road Diet



MAB

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	129	0	32	0	163	111	6	129	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	143	0	36	0	181	123	7	143	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)								1289				
pX, platoon unblocked												
vC, conflicting volume	373	461	143	338	338	181	143			304		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	373	461	143	338	338	181	143			304		
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	77	100	96	100			99		
cM capacity (veh/h)	557	495	904	614	580	862	1439			1256		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	0	179	181	123	150
Volume Left	0	143	0	0	7
Volume Right	0	36	0	123	0
cSH	1700	651	1439	1700	1256
Volume to Capacity	0.00	0.27	0.00	0.07	0.01
Queue Length 95th (ft)	0	28	0	0	0
Control Delay (s)	0.0	12.6	0.0	0.0	0.4
Lane LOS	A	B			A
Approach Delay (s)	0.0	12.6	0.0		0.4
Approach LOS	A	B			

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	27.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	12	53	0	0	0	21	269	14	29	214	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	21	13	59	0	0	0	23	299	16	32	238	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)								1006				
pX, platoon unblocked												
vC, conflicting volume	507	672	128	602	673	157	256			314		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	507	672	128	602	673	157	256			314		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	95	96	93	100	100	100	98			97		
cM capacity (veh/h)	434	359	899	337	359	860	1306			1243		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	93	173	165	151	137
Volume Left	21	23	0	32	0
Volume Right	59	0	16	0	18
cSH	617	1306	1700	1243	1700
Volume to Capacity	0.15	0.02	0.10	0.03	0.08
Queue Length 95th (ft)	13	1	0	2	0
Control Delay (s)	11.9	1.2	0.0	1.9	0.0
Lane LOS	B	A		A	
Approach Delay (s)	11.9	0.6		1.0	
Approach LOS	B				

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	30.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	30	29	37	265	257	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	32	41	294	286	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				568		
pX, platoon unblocked						
vC, conflicting volume	531	159	318			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	531	159	318			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	96	97			
cM capacity (veh/h)	462	858	1239			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	33	32	139	196	190	127
Volume Left	33	0	41	0	0	0
Volume Right	0	32	0	0	0	32
cSH	462	858	1239	1700	1700	1700
Volume to Capacity	0.07	0.04	0.03	0.12	0.11	0.07
Queue Length 95th (ft)	6	3	3	0	0	0
Control Delay (s)	13.4	9.4	2.6	0.0	0.0	0.0
Lane LOS	B	A	A			
Approach Delay (s)	11.4		1.1		0.0	
Approach LOS	B					

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	1	301	18	8	278
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1	334	20	9	309
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			
pX, platoon unblocked						
vC, conflicting volume	517	177			354	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	517	177			354	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	484	835			1201	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	1	223	131	112	206
Volume Left	0	0	0	9	0
Volume Right	1	0	20	0	0
cSH	835	1700	1700	1201	1700
Volume to Capacity	0.00	0.13	0.08	0.01	0.12
Queue Length 95th (ft)	0	0	0	1	0
Control Delay (s)	9.3	0.0	0.0	0.7	0.0
Lane LOS	A			A	
Approach Delay (s)	9.3	0.0		0.2	
Approach LOS	A				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		

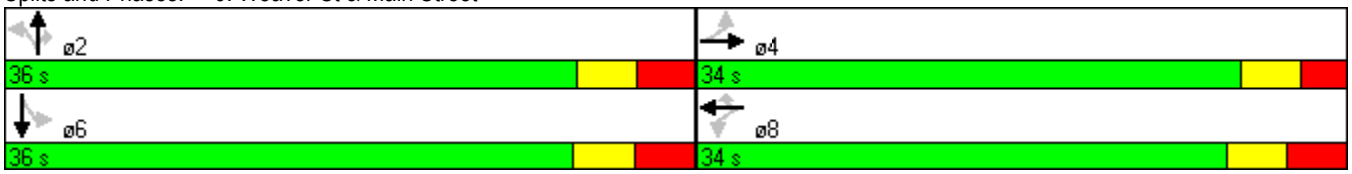
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	9	12	28	17	30	9	265	31	13	224	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	10	10	11	12	12	10	9	12
Storage Length (ft)	0		0	0		0	50		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	0		0	0		0	100		100	0		0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.932				0.850			0.850		0.999	
Flt Protected		0.994			0.970		0.950			0.950		
Satd. Flow (prot)	0	1841	0	0	1686	1478	1711	1863	1583	1652	1675	0
Flt Permitted		0.965			0.796		0.603			0.580		
Satd. Flow (perm)	0	1787	0	0	1384	1478	1086	1863	1583	1008	1675	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		157			63			401			437	
Travel Time (s)		4.3			1.7			10.9			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	10	13	31	19	33	10	294	34	14	249	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	50	33	10	294	34	14	251	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	32.6	32.6		33.4	33.4	33.4	29.2	29.2	29.2	29.4	29.4	
Total Split (s)	34.0	34.0	0.0	34.0	34.0	34.0	36.0	36.0	36.0	36.0	36.0	0.0
Total Split (%)	48.6%	48.6%	0.0%	48.6%	48.6%	48.6%	51.4%	51.4%	51.4%	51.4%	51.4%	0.0%
Maximum Green (s)	28.4	28.4		27.6	27.6	27.6	29.8	29.8	29.8	29.6	29.6	
Yellow Time (s)	3.1	3.1		3.2	3.2	3.2	3.1	3.1	3.1	3.2	3.2	
All-Red Time (s)	2.5	2.5		3.2	3.2	3.2	3.1	3.1	3.1	3.2	3.2	
Lost Time Adjust (s)	-2.0	-0.6	-2.0	-2.0	-1.4	-1.4	-1.2	-1.2	-1.2	-1.4	-1.4	-2.0
Total Lost Time (s)	3.6	5.0	2.0	4.4	5.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	13	13		10	10	10	8	8	8	8	8	
Act Effct Green (s)		13.9			14.3	14.3	25.4	25.4	25.4	25.4	25.4	
Actuated g/C Ratio		0.35			0.36	0.36	0.64	0.64	0.64	0.64	0.64	
v/c Ratio		0.04			0.10	0.06	0.01	0.25	0.03	0.02	0.23	
Control Delay		9.3			9.7	9.4	9.6	9.2	9.3	9.6	9.4	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		9.3			9.7	9.4	9.6	9.2	9.3	9.6	9.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A			A	A	A	A	A	A	A	
Approach Delay		9.3			9.6			9.2			9.4	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)		4			7	5	1	37	4	2	32	
Queue Length 95th (ft)		17			27	20	10	136	23	13	119	
Internal Link Dist (ft)		77			1			321			357	
Turn Bay Length (ft)							50		100			
Base Capacity (vph)		1399			1084	1157	909	1559	1325	844	1402	
Starvation Cap Reductn		0			0	0	0	0	0	0	0	
Spillback Cap Reductn		0			0	0	0	0	0	0	0	
Storage Cap Reductn		0			0	0	0	0	0	0	0	
Reduced v/c Ratio		0.02			0.05	0.03	0.01	0.19	0.03	0.02	0.18	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 39.6
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.25
Intersection Signal Delay: 9.3 Intersection LOS: A
Intersection Capacity Utilization 43.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Weaver St & Main Street



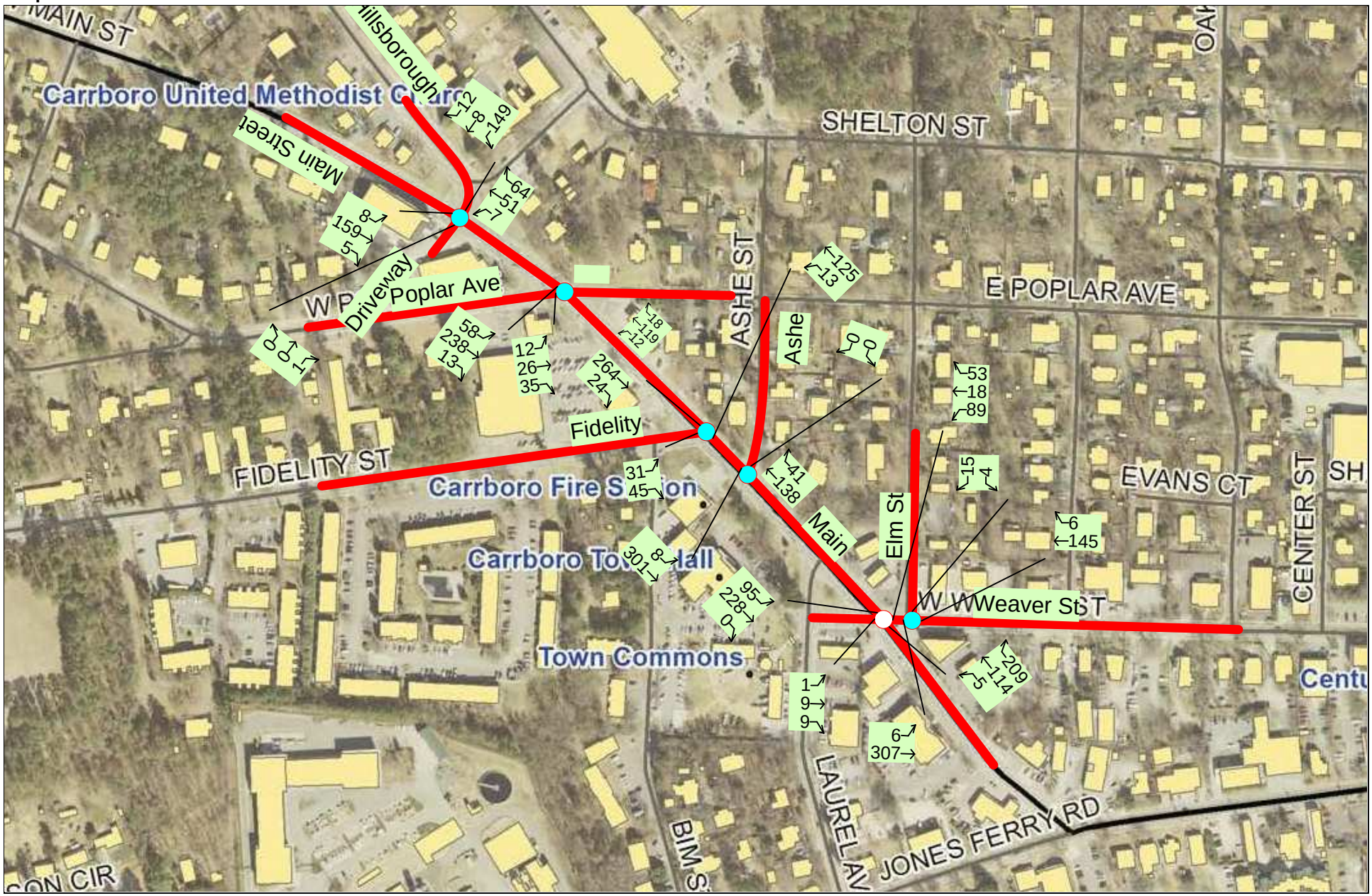
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	6	47	68	4	4	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	52	76	4	4	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		63				
pX, platoon unblocked						
vC, conflicting volume	80				141	76
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	80				141	76
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				99	99
cM capacity (veh/h)	1518				848	986

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	59	76	4	12
Volume Left	7	0	0	4
Volume Right	0	0	4	8
cSH	1518	1700	1700	931
Volume to Capacity	0.00	0.04	0.00	0.01
Queue Length 95th (ft)	0	0	0	1
Control Delay (s)	0.9	0.0	0.0	8.9
Lane LOS	A			A
Approach Delay (s)	0.9	0.0		8.9
Approach LOS				A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	17.5%	ICU Level of Service	A
Analysis Period (min)	15		

West Main Street Road Diet **Existing AM with Weaver Open**

Map - West Main Street Road Diet



MAB

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	149	8	12	7	51	64	8	159	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	1	166	9	13	8	57	71	9	177	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1289				
pX, platoon unblocked												
vC, conflicting volume	287	341	179	271	272	57	182			128		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	287	341	179	271	272	57	182			128		
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	75	99	99	99			99		
cM capacity (veh/h)	643	574	863	675	627	1010	1393			1458		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	1	188	64	71	191
Volume Left	0	166	8	0	9
Volume Right	1	13	0	71	6
cSH	863	689	1393	1700	1458
Volume to Capacity	0.00	0.27	0.01	0.04	0.01
Queue Length 95th (ft)	0	28	0	0	0
Control Delay (s)	9.2	12.2	1.0	0.0	0.4
Lane LOS	A	B	A		A
Approach Delay (s)	9.2	12.2	0.5		0.4
Approach LOS	A	B			

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	37.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	26	35	0	0	0	12	119	18	58	238	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	29	39	0	0	0	13	132	20	64	264	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1006				
pX, platoon unblocked												
vC, conflicting volume	493	579	139	483	577	76	279			152		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493	579	139	483	577	76	279			152		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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	93	96	100	100	100	99			95		
cM capacity (veh/h)	439	401	883	404	403	970	1281			1426		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	81	79	86	197	147
Volume Left	13	13	0	64	0
Volume Right	39	0	20	0	14
cSH	554	1281	1700	1426	1700
Volume to Capacity	0.15	0.01	0.05	0.05	0.09
Queue Length 95th (ft)	13	1	0	4	0
Control Delay (s)	12.6	1.4	0.0	2.8	0.0
Lane LOS	B	A		A	
Approach Delay (s)	12.6	0.7		1.6	
Approach LOS	B				

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	27.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	31	45	13	125	264	24
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	34	50	14	139	293	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				568		
pX, platoon unblocked						
vC, conflicting volume	405	160	320			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	405	160	320			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	94	99			
cM capacity (veh/h)	567	857	1237			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	34	50	61	93	196	124
Volume Left	34	0	14	0	0	0
Volume Right	0	50	0	0	0	27
cSH	567	857	1237	1700	1700	1700
Volume to Capacity	0.06	0.06	0.01	0.05	0.12	0.07
Queue Length 95th (ft)	5	5	1	0	0	0
Control Delay (s)	11.8	9.5	2.0	0.0	0.0	0.0
Lane LOS	B	A	A			
Approach Delay (s)	10.4		0.8		0.0	
Approach LOS	B					

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	138	41	8	301
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	153	46	9	334
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			
pX, platoon unblocked						
vC, conflicting volume	361	99			199	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	361	99			199	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	607	937			1371	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	102	97	120	223
Volume Left	0	0	0	9	0
Volume Right	0	0	46	0	0
cSH	1700	1700	1700	1371	1700
Volume to Capacity	0.00	0.06	0.06	0.01	0.13
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.6	0.0
Lane LOS	A			A	
Approach Delay (s)	0.0	0.0		0.2	
Approach LOS	A				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		

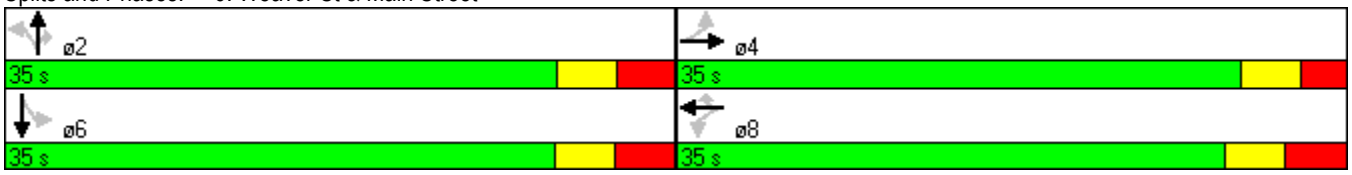
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	9	9	89	18	53	5	114	209	95	228	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	10	10	11	12	12	10	9	12
Storage Length (ft)	0		0	0		0	50		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	0		0	0		0	100		100	0		0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.936				0.850			0.850			
Flt Protected		0.998			0.960		0.950			0.950		
Satd. Flow (prot)	0	1856	0	0	1669	1478	1711	1863	1583	1652	1676	0
Flt Permitted		0.986			0.747		0.602			0.676		
Satd. Flow (perm)	0	1834	0	0	1299	1478	1084	1863	1583	1175	1676	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		157			63			401			437	
Travel Time (s)		4.3			1.7			10.9			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	10	10	99	20	59	6	127	232	106	253	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	119	59	6	127	232	106	253	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	32.6	32.6		33.5	33.5	33.5	29.2	29.2	29.2	29.4	29.4	
Total Split (s)	35.0	35.0	0.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	29.4	29.4		28.5	28.5	28.5	28.8	28.8	28.8	28.6	28.6	
Yellow Time (s)	3.1	3.1		3.2	3.2	3.2	3.1	3.1	3.1	3.2	3.2	
All-Red Time (s)	2.5	2.5		3.3	3.3	3.3	3.1	3.1	3.1	3.2	3.2	
Lost Time Adjust (s)	-2.0	-0.6	-2.0	-2.0	-1.5	-1.5	-1.2	-1.2	-1.2	-1.4	-1.4	-2.0
Total Lost Time (s)	3.6	5.0	2.0	4.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	4	4		4	4	4	7	7	7	5	5	
Act Effct Green (s)		13.6			14.4	14.4	20.2	20.2	20.2	20.2	20.2	
Actuated g/C Ratio		0.34			0.36	0.36	0.51	0.51	0.51	0.51	0.51	
v/c Ratio		0.03			0.25	0.11	0.01	0.13	0.29	0.18	0.30	
Control Delay		9.2			11.0	9.5	9.8	9.9	11.0	10.8	11.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		9.2			11.0	9.5	9.8	9.9	11.0	10.8	11.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A			B	A	A	A	B	B	B	
Approach Delay		9.2			10.5			10.6			10.9	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)		2			14	7	1	15	29	13	32	
Queue Length 95th (ft)		14			55	31	7	62	113	58	121	
Internal Link Dist (ft)		77			1			321			357	
Turn Bay Length (ft)							50		100			
Base Capacity (vph)		1475			1045	1188	872	1498	1273	945	1347	
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		0.01			0.11	0.05	0.01	0.08	0.18	0.11	0.19	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 39.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.30
Intersection Signal Delay: 10.7 Intersection LOS: B
Intersection Capacity Utilization 42.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Weaver St & Main Street

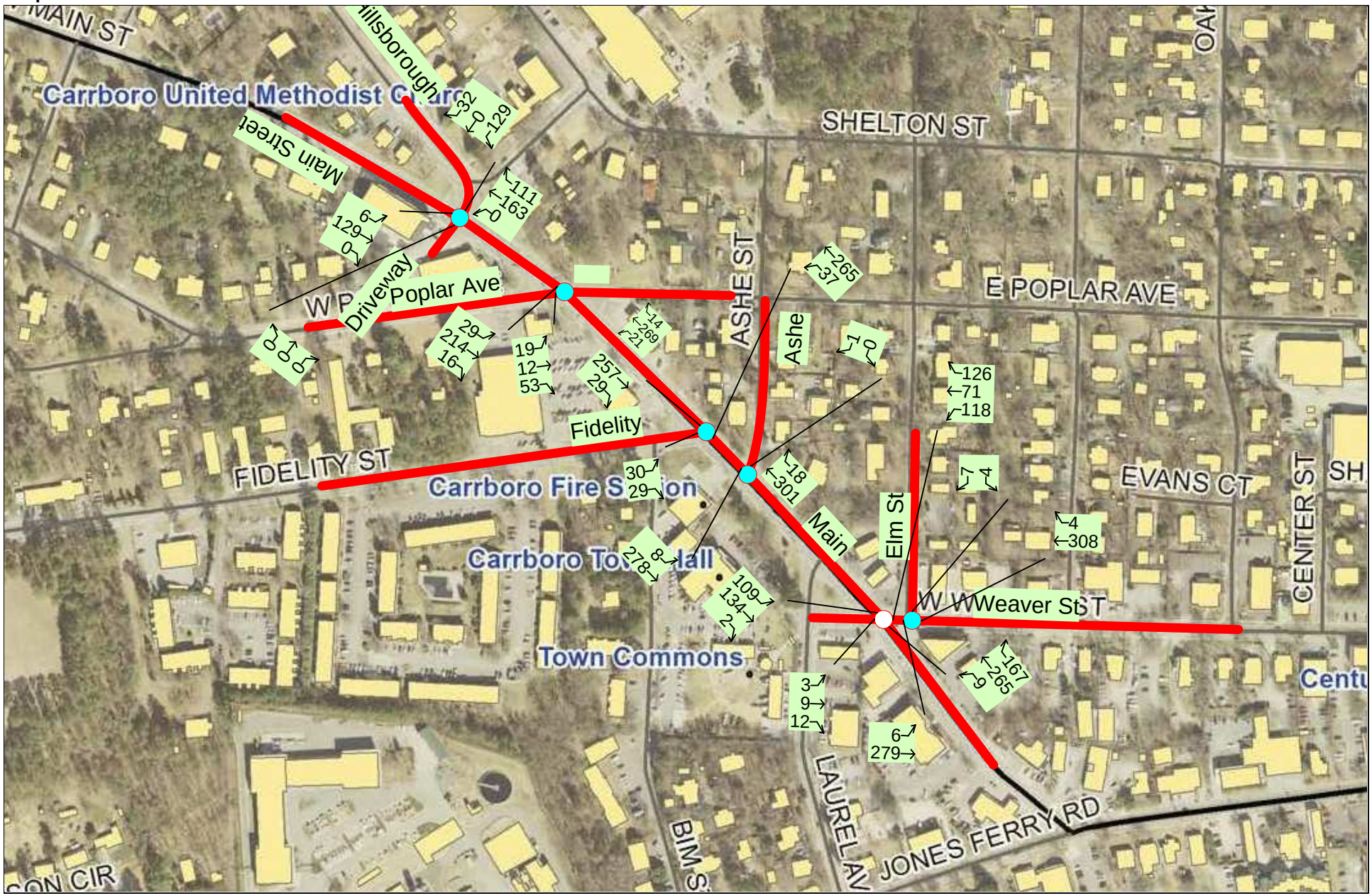


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	6	307	145	6	4	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	341	161	7	4	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		63				
pX, platoon unblocked					0.97	
vC, conflicting volume	168				516	161
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	168				490	161
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				99	98
cM capacity (veh/h)	1410				521	884

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	348	161	7	21
Volume Left	7	0	0	4
Volume Right	0	0	7	17
cSH	1410	1700	1700	771
Volume to Capacity	0.00	0.09	0.00	0.03
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	0.2	0.0	0.0	9.8
Lane LOS	A			A
Approach Delay (s)	0.2	0.0		9.8
Approach LOS				A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

Map - West Main Street Road Diet



MAB

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	129	0	32	0	163	111	6	129	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	143	0	36	0	181	123	7	143	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)								1289				
pX, platoon unblocked												
vC, conflicting volume	373	461	143	338	338	181	143			304		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	373	461	143	338	338	181	143			304		
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	77	100	96	100			99		
cM capacity (veh/h)	557	495	904	614	580	862	1439			1256		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	0	179	181	123	150
Volume Left	0	143	0	0	7
Volume Right	0	36	0	123	0
cSH	1700	651	1439	1700	1256
Volume to Capacity	0.00	0.27	0.00	0.07	0.01
Queue Length 95th (ft)	0	28	0	0	0
Control Delay (s)	0.0	12.6	0.0	0.0	0.4
Lane LOS	A	B			A
Approach Delay (s)	0.0	12.6	0.0		0.4
Approach LOS	A	B			

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	27.4%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	12	53	0	0	0	21	269	14	29	214	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	21	13	59	0	0	0	23	299	16	32	238	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)								1006				
pX, platoon unblocked												
vC, conflicting volume	507	672	128	602	673	157	256			314		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	507	672	128	602	673	157	256			314		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	95	96	93	100	100	100	98			97		
cM capacity (veh/h)	434	359	899	337	359	860	1306			1243		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	93	173	165	151	137
Volume Left	21	23	0	32	0
Volume Right	59	0	16	0	18
cSH	617	1306	1700	1243	1700
Volume to Capacity	0.15	0.02	0.10	0.03	0.08
Queue Length 95th (ft)	13	1	0	2	0
Control Delay (s)	11.9	1.2	0.0	1.9	0.0
Lane LOS	B	A		A	
Approach Delay (s)	11.9	0.6		1.0	
Approach LOS	B				

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	30.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	30	29	37	265	257	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	32	41	294	286	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				568		
pX, platoon unblocked						
vC, conflicting volume	531	159	318			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	531	159	318			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	96	97			
cM capacity (veh/h)	462	858	1239			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	33	32	139	196	190	127
Volume Left	33	0	41	0	0	0
Volume Right	0	32	0	0	0	32
cSH	462	858	1239	1700	1700	1700
Volume to Capacity	0.07	0.04	0.03	0.12	0.11	0.07
Queue Length 95th (ft)	6	3	3	0	0	0
Control Delay (s)	13.4	9.4	2.6	0.0	0.0	0.0
Lane LOS	B	A	A			
Approach Delay (s)	11.4		1.1		0.0	
Approach LOS	B					

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	1	301	18	8	278
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1	334	20	9	309
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			
pX, platoon unblocked						
vC, conflicting volume	517	177			354	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	517	177			354	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	484	835			1201	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	1	223	131	112	206
Volume Left	0	0	0	9	0
Volume Right	1	0	20	0	0
cSH	835	1700	1700	1201	1700
Volume to Capacity	0.00	0.13	0.08	0.01	0.12
Queue Length 95th (ft)	0	0	0	1	0
Control Delay (s)	9.3	0.0	0.0	0.7	0.0
Lane LOS	A			A	
Approach Delay (s)	9.3	0.0		0.2	
Approach LOS	A				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		

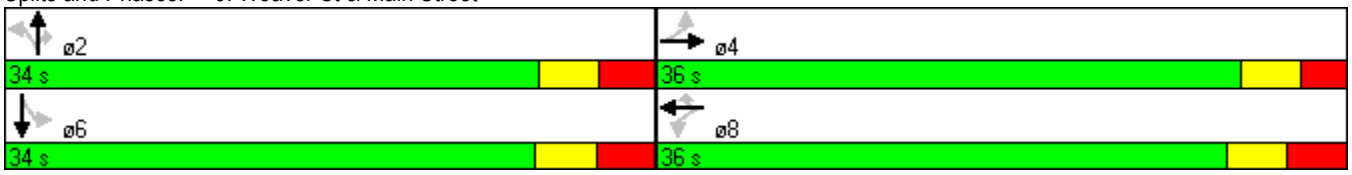
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	9	12	118	71	126	9	265	167	109	134	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	10	10	11	12	12	10	9	12
Storage Length (ft)	0		0	0		0	50		100	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	0		0	0		0	100		100	0		0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.932				0.850			0.850		0.998	
Flt Protected		0.994			0.970		0.950			0.950		
Satd. Flow (prot)	0	1841	0	0	1686	1478	1711	1863	1583	1652	1673	0
Flt Permitted		0.965			0.795		0.661			0.580		
Satd. Flow (perm)	0	1787	0	0	1382	1478	1190	1863	1583	1008	1673	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		157			63			401			437	
Travel Time (s)		4.3			1.7			10.9			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	10	13	131	79	140	10	294	186	121	149	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	210	140	10	294	186	121	151	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	32.6	32.6		33.4	33.4	33.4	29.2	29.2	29.2	29.4	29.4	
Total Split (s)	36.0	36.0	0.0	36.0	36.0	36.0	34.0	34.0	34.0	34.0	34.0	0.0
Total Split (%)	51.4%	51.4%	0.0%	51.4%	51.4%	51.4%	48.6%	48.6%	48.6%	48.6%	48.6%	0.0%
Maximum Green (s)	30.4	30.4		29.6	29.6	29.6	27.8	27.8	27.8	27.6	27.6	
Yellow Time (s)	3.1	3.1		3.2	3.2	3.2	3.1	3.1	3.1	3.2	3.2	
All-Red Time (s)	2.5	2.5		3.2	3.2	3.2	3.1	3.1	3.1	3.2	3.2	
Lost Time Adjust (s)	-2.0	-0.6	-2.0	-2.0	-1.4	-1.4	-1.2	-1.2	-1.2	-1.4	-1.4	-2.0
Total Lost Time (s)	3.6	5.0	2.0	4.4	5.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	13	13		10	10	10	8	8	8	8	8	
Act Effct Green (s)		15.3			15.3	15.3	16.1	16.1	16.1	16.1	16.1	
Actuated g/C Ratio		0.37			0.37	0.37	0.38	0.38	0.38	0.38	0.38	
v/c Ratio		0.04			0.42	0.26	0.02	0.41	0.31	0.31	0.24	
Control Delay		9.1			12.9	10.8	10.2	12.6	11.9	13.2	11.2	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		9.1			12.9	10.8	10.2	12.6	11.9	13.2	11.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A			B	B	B	B	B	B	B	
Approach Delay		9.1			12.1			12.3			12.1	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)		3			29	18	1	39	24	15	19	
Queue Length 95th (ft)		17			93	62	10	136	90	68	74	
Internal Link Dist (ft)		77			1			321			357	
Turn Bay Length (ft)							50		100			
Base Capacity (vph)		1393			1077	1152	868	1358	1154	735	1220	
Starvation Cap Reductn		0			0	0	0	0	0	0	0	
Spillback Cap Reductn		0			0	0	0	0	0	0	0	
Storage Cap Reductn		0			0	0	0	0	0	0	0	
Reduced v/c Ratio		0.02			0.19	0.12	0.01	0.22	0.16	0.16	0.12	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 41.9
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.42
Intersection Signal Delay: 12.1 Intersection LOS: B
Intersection Capacity Utilization 51.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Weaver St & Main Street

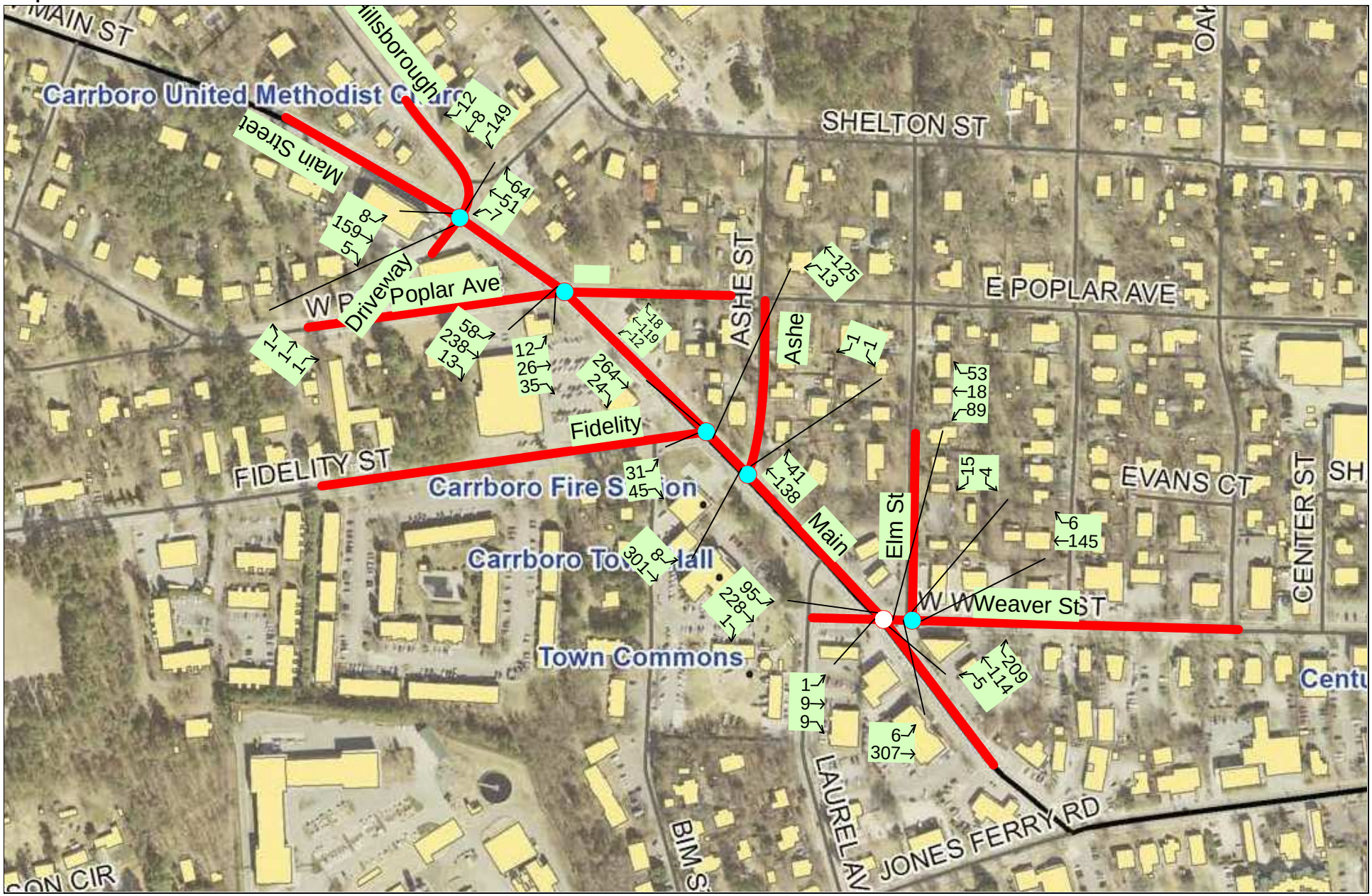


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	6	279	308	4	4	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	310	342	4	4	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		63				
pX, platoon unblocked					0.96	
vC, conflicting volume	347				666	342
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	347				632	342
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	99
cM capacity (veh/h)	1212				425	700

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	317	342	4	12
Volume Left	7	0	0	4
Volume Right	0	0	4	8
cSH	1212	1700	1700	567
Volume to Capacity	0.01	0.20	0.00	0.02
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	0.2	0.0	0.0	11.5
Lane LOS	A			B
Approach Delay (s)	0.2	0.0		11.5
Approach LOS				B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

Map - West Main Street Road Diet



MAB

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	1	1	149	8	12	7	51	64	8	159	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	1	1	166	9	13	8	57	71	9	177	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)								1289				
pX, platoon unblocked												
vC, conflicting volume	287	341	179	307	308	92	182			128		
vC1, stage 1 conf vol	197	197		108	108							
vC2, stage 2 conf vol	90	143		199	200							
vCu, unblocked vol	287	341	179	307	308	92	182			128		
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	100	78	99	99	99			99		
cM capacity (veh/h)	749	673	863	743	683	965	1393			1458		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	3	188	8	128	191
Volume Left	1	166	8	0	9
Volume Right	1	13	0	71	6
cSH	754	752	1393	1700	1458
Volume to Capacity	0.00	0.25	0.01	0.08	0.01
Queue Length 95th (ft)	0	25	0	0	0
Control Delay (s)	9.8	11.4	7.6	0.0	0.4
Lane LOS	A	B	A		A
Approach Delay (s)	9.8	11.4	0.4		0.4
Approach LOS	A	B			

Intersection Summary				
Average Delay	4.4			
Intersection Capacity Utilization	37.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	26	35	0	0	0	12	119	18	58	238	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	29	39	0	0	0	13	132	20	64	264	14
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)								1006				
pX, platoon unblocked												
vC, conflicting volume	559	579	272	616	577	142	279			152		
vC1, stage 1 conf vol	401	401		169	169							
vC2, stage 2 conf vol	159	179		447	408							
vCu, unblocked vol	559	579	272	616	577	142	279			152		
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	95	95	100	100	100	99			95		
cM capacity (veh/h)	558	528	767	474	526	905	1284			1429		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	81	13	152	64	279
Volume Left	13	13	0	64	0
Volume Right	39	0	20	0	14
cSH	627	1284	1700	1429	1700
Volume to Capacity	0.13	0.01	0.09	0.05	0.16
Queue Length 95th (ft)	11	1	0	4	0
Control Delay (s)	11.6	7.8	0.0	7.6	0.0
Lane LOS	B	A		A	
Approach Delay (s)	11.6	0.6		1.4	
Approach LOS	B				

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	30.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	31	45	13	125	264	24
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	34	50	14	139	293	27
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)				568		
pX, platoon unblocked						
vC, conflicting volume	474	307	320			
vC1, stage 1 conf vol	307					
vC2, stage 2 conf vol	168					
vCu, unblocked vol	474	307	320			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	93	99			
cM capacity (veh/h)	687	733	1240			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	34	50	14	139	320
Volume Left	34	0	14	0	0
Volume Right	0	50	0	0	27
cSH	687	733	1240	1700	1700
Volume to Capacity	0.05	0.07	0.01	0.08	0.19
Queue Length 95th (ft)	4	5	1	0	0
Control Delay (s)	10.5	10.3	7.9	0.0	0.0
Lane LOS	B	B	A		
Approach Delay (s)	10.4		0.7		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	25.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	1	1	138	41	8	301
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	1	153	46	9	334
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)			437			
pX, platoon unblocked						
vC, conflicting volume	528	176			199	
vC1, stage 1 conf vol	176					
vC2, stage 2 conf vol	352					
vCu, unblocked vol	528	176			199	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	656	867			1373	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	2	199	9	334
Volume Left	1	0	9	0
Volume Right	1	46	0	0
cSH	747	1700	1373	1700
Volume to Capacity	0.00	0.12	0.01	0.20
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	9.8	0.0	7.6	0.0
Lane LOS	A		A	
Approach Delay (s)	9.8	0.0	0.2	
Approach LOS	A			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		

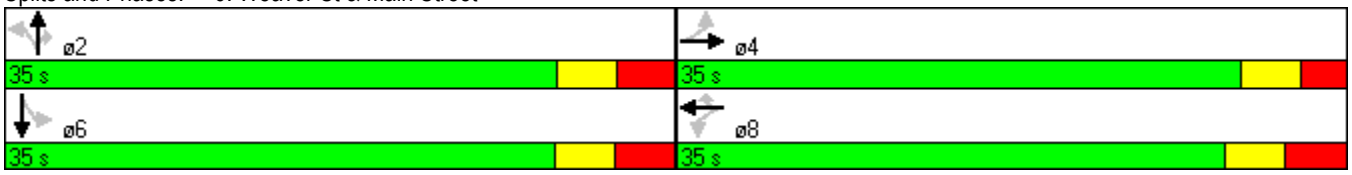
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	9	9	89	18	53	5	114	209	95	228	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	10	10	11	12	12	10	9	12
Storage Length (ft)	0		0	0		0	50		100	100		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	0		0	0		0	100		100	0		0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.936				0.850			0.850		0.999	
Flt Protected		0.998			0.960		0.950			0.950		
Satd. Flow (prot)	0	1856	0	0	1669	1478	1711	1863	1583	1652	1675	0
Flt Permitted		0.986			0.747		0.602			0.676		
Satd. Flow (perm)	0	1834	0	0	1299	1478	1084	1863	1583	1175	1675	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		157			63			401			437	
Travel Time (s)		4.3			1.7			10.9			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1	10	10	99	20	59	6	127	232	106	253	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	119	59	6	127	232	106	254	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	32.6	32.6		33.5	33.5	33.5	29.2	29.2	29.2	29.4	29.4	
Total Split (s)	35.0	35.0	0.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%
Maximum Green (s)	29.4	29.4		28.5	28.5	28.5	28.8	28.8	28.8	28.6	28.6	
Yellow Time (s)	3.1	3.1		3.2	3.2	3.2	3.1	3.1	3.1	3.2	3.2	
All-Red Time (s)	2.5	2.5		3.3	3.3	3.3	3.1	3.1	3.1	3.2	3.2	
Lost Time Adjust (s)	-2.0	-0.6	-2.0	-2.0	-1.5	-1.5	-1.2	-1.2	-1.2	-1.4	-1.4	-2.0
Total Lost Time (s)	3.6	5.0	2.0	4.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	4	4		4	4	4	7	7	7	5	5	
Act Effct Green (s)		13.6			14.4	14.4	20.2	20.2	20.2	20.2	20.2	
Actuated g/C Ratio		0.34			0.36	0.36	0.51	0.51	0.51	0.51	0.51	
v/c Ratio		0.03			0.25	0.11	0.01	0.13	0.29	0.18	0.30	
Control Delay		9.2			11.0	9.5	9.8	9.9	11.0	10.8	11.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		9.2			11.0	9.5	9.8	9.9	11.0	10.8	11.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		A			B	A	A	A	B	B	B	
Approach Delay		9.2			10.5			10.6			10.9	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)		2			14	7	1	15	29	13	32	
Queue Length 95th (ft)		14			55	31	7	62	113	58	121	
Internal Link Dist (ft)		77			1			321			357	
Turn Bay Length (ft)							50		100	100		
Base Capacity (vph)		1475			1045	1188	872	1498	1273	945	1347	
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		0.01			0.11	0.05	0.01	0.08	0.18	0.11	0.19	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 39.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.30
Intersection Signal Delay: 10.7 Intersection LOS: B
Intersection Capacity Utilization 42.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Weaver St & Main Street



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	6	307	145	6	4	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	341	161	7	4	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		63				
pX, platoon unblocked					0.97	
vC, conflicting volume	168				516	161
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	168				490	161
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				99	98
cM capacity (veh/h)	1410				521	884

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	348	161	7	21
Volume Left	7	0	0	4
Volume Right	0	0	7	17
cSH	1410	1700	1700	771
Volume to Capacity	0.00	0.09	0.00	0.03
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	0.2	0.0	0.0	9.8
Lane LOS	A			A
Approach Delay (s)	0.2	0.0		9.8
Approach LOS				A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

LANE SUMMARY

Site: Build AM Peak Hour

Carroboro Road Diet and Neighborhood Study
W. Main Street @ W. Weaver Street/Elm Street
Build AM Peak Hour
Roundabout

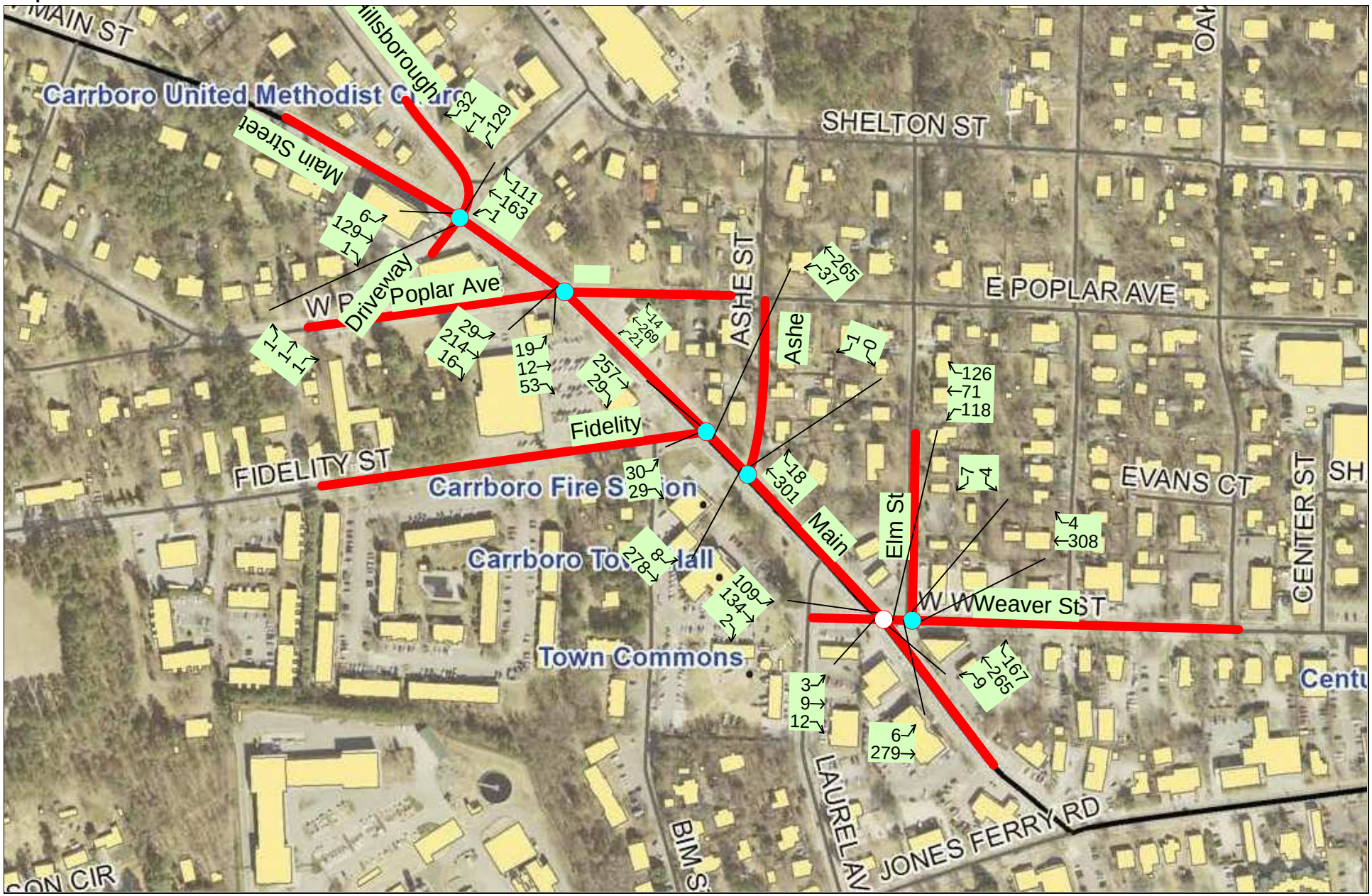
Lane Use and Performance

	Demand Flows L veh/h	T veh/h	R veh/h	Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Lane Length ft	SL Type	Cap. Adj. %	Prob. Block. %
South: West Main Street																
Lane 1	6	130	238	373	2.0	1045	0.357	100	2.6	LOS A	2.9	73.9	1600	–	0.0	0.0
Approach	6	130	238	373	2.0		0.357		2.6	LOS A	2.9	73.9				
East: West Weaver Street																
Lane 1	111	25	74	210	2.0	982	0.214	100	5.2	LOS A	1.5	38.5	1600	–	0.0	0.0
Approach	111	25	74	210	2.0		0.214		5.2	LOS A	1.5	38.5				
North East: Elm Street																
Lane 1	22	0	12	34	2.0	805	0.042	100	6.9	LOS A	0.3	6.5	1600	–	0.0	0.0
Approach	22	0	12	34	2.0		0.042		6.9	LOS A	0.3	6.5				
North: West Main Street																
Lane 1	114	271	1	387	2.0	1004	0.385	100	3.7	LOS A	3.1	80.0	1600	–	0.0	0.0
Approach	114	271	1	387	2.0		0.385		3.7	LOS A	3.1	80.0				
West: West Weaver Street																
Lane 1	3	12	13	28	2.0	670	0.042	100	5.3	LOS A	0.3	6.7	1600	–	0.0	0.0
Approach	3	12	13	28	2.0		0.042		5.3	LOS A	0.3	6.7				
Intersection				1031	2.0		0.385		3.7	LOS A	3.1	80.0				

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all lanes. LOS Method: Delay (HCM).
Level of Service (Worst Lane): LOS A. LOS Method for individual lanes: Delay (HCM).
Approach LOS values are based on the worst delay for any lane.
Roundabout LOS Method: Same as Sign Control.
Roundabout Capacity Model: SIDRA Standard.

West Main Street Road Diet **Build PM**

Map - West Main Street Road Diet



MAB

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	1	1	129	1	32	1	163	111	6	129	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	1	1	143	1	36	1	181	123	7	143	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)								1289				
pX, platoon unblocked												
vC, conflicting volume	377	464	144	404	403	243	144			304		
vC1, stage 1 conf vol	157	157		245	245							
vC2, stage 2 conf vol	219	307		159	158							
vCu, unblocked vol	377	464	144	404	403	243	144			304		
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	100	79	100	96	100			99		
cM capacity (veh/h)	684	610	904	693	646	796	1438			1256		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	3	180	1	304	151
Volume Left	1	143	1	0	7
Volume Right	1	36	0	123	1
cSH	713	711	1438	1700	1256
Volume to Capacity	0.00	0.25	0.00	0.18	0.01
Queue Length 95th (ft)	0	25	0	0	0
Control Delay (s)	10.1	11.8	7.5	0.0	0.4
Lane LOS	B	B	A		A
Approach Delay (s)	10.1	11.8	0.0		0.4
Approach LOS	B	B			

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	37.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	12	53	0	0	0	21	269	14	29	214	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	21	13	59	0	0	0	23	299	16	32	238	18
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)								1006				
pX, platoon unblocked												
vC, conflicting volume	657	672	247	721	673	307	256			314		
vC1, stage 1 conf vol	311	311		353	353							
vC2, stage 2 conf vol	346	361		368	320							
vCu, unblocked vol	657	672	247	721	673	307	256			314		
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 %	96	97	93	100	100	100	98			97		
cM capacity (veh/h)	542	513	792	483	518	733	1309			1246		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	93	23	314	32	256
Volume Left	21	23	0	32	0
Volume Right	59	0	16	0	18
cSH	670	1309	1700	1246	1700
Volume to Capacity	0.14	0.02	0.18	0.03	0.15
Queue Length 95th (ft)	12	1	0	2	0
Control Delay (s)	11.2	7.8	0.0	8.0	0.0
Lane LOS	B	A		A	
Approach Delay (s)	11.2	0.5		0.9	
Approach LOS	B				

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	33.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	30	29	37	265	257	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	32	41	294	286	32
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)				568		
pX, platoon unblocked						
vC, conflicting volume	678	302	318			
vC1, stage 1 conf vol	302					
vC2, stage 2 conf vol	377					
vCu, unblocked vol	678	302	318			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	96	97			
cM capacity (veh/h)	589	738	1242			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	33	32	41	294	318
Volume Left	33	0	41	0	0
Volume Right	0	32	0	0	32
cSH	589	738	1242	1700	1700
Volume to Capacity	0.06	0.04	0.03	0.17	0.19
Queue Length 95th (ft)	4	3	3	0	0
Control Delay (s)	11.5	10.1	8.0	0.0	0.0
Lane LOS	B	B	A		
Approach Delay (s)	10.8		1.0		0.0
Approach LOS	B				

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	1	301	18	8	278
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	1	334	20	9	309
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)			437			
pX, platoon unblocked	0.98	0.98			0.98	
vC, conflicting volume	671	344			354	
vC1, stage 1 conf vol	344					
vC2, stage 2 conf vol	327					
vCu, unblocked vol	653	320			330	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	607	706			1204	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	1	354	9	309
Volume Left	0	0	9	0
Volume Right	1	20	0	0
cSH	706	1700	1204	1700
Volume to Capacity	0.00	0.21	0.01	0.18
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	10.1	0.0	8.0	0.0
Lane LOS	B		A	
Approach Delay (s)	10.1	0.0	0.2	
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

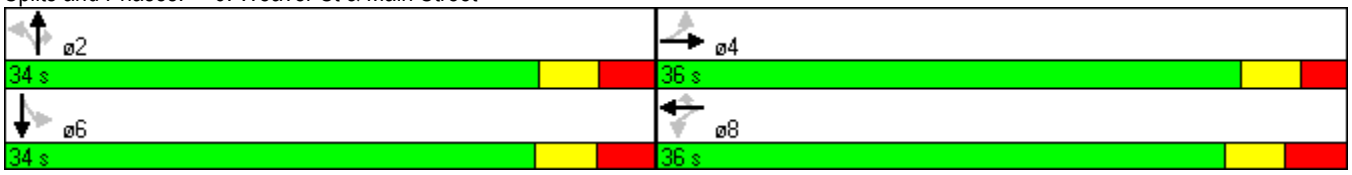
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	9	12	118	71	126	9	265	167	109	134	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	12	12	10	10	11	12	12	10	9	12
Storage Length (ft)	0		0	0		0	50		100	100		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	0		0	0		0	100		100	0		0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.932				0.850			0.850		0.998	
Flt Protected		0.994			0.970		0.950			0.950		
Satd. Flow (prot)	0	1841	0	0	1686	1478	1711	1863	1583	1652	1673	0
Flt Permitted		0.965			0.795		0.661			0.580		
Satd. Flow (perm)	0	1787	0	0	1382	1478	1190	1863	1583	1008	1673	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		157			63			401			437	
Travel Time (s)		4.3			1.7			10.9			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	10	13	131	79	140	10	294	186	121	149	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	210	140	10	294	186	121	151	0
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	32.6	32.6		33.5	33.5	33.5	29.2	29.2	29.2	29.4	29.4	
Total Split (s)	36.0	36.0	0.0	36.0	36.0	36.0	34.0	34.0	34.0	34.0	34.0	0.0
Total Split (%)	51.4%	51.4%	0.0%	51.4%	51.4%	51.4%	48.6%	48.6%	48.6%	48.6%	48.6%	0.0%
Maximum Green (s)	30.4	30.4		29.5	29.5	29.5	27.8	27.8	27.8	27.6	27.6	
Yellow Time (s)	3.1	3.1		3.2	3.2	3.2	3.1	3.1	3.1	3.2	3.2	
All-Red Time (s)	2.5	2.5		3.3	3.3	3.3	3.1	3.1	3.1	3.2	3.2	
Lost Time Adjust (s)	-2.0	-0.6	-2.0	-2.0	-1.5	-1.5	-1.2	-1.2	-1.2	-1.4	-1.4	-2.0
Total Lost Time (s)	3.6	5.0	2.0	4.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	2.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	4	4		4	4	4	7	7	7	5	5	
Act Effct Green (s)		13.6			15.5	15.5	16.1	16.1	16.1	16.1	16.1	
Actuated g/C Ratio		0.32			0.37	0.37	0.38	0.38	0.38	0.38	0.38	
v/c Ratio		0.05			0.41	0.26	0.02	0.41	0.31	0.31	0.24	
Control Delay		10.5			12.9	10.8	10.2	12.7	12.0	13.3	11.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		10.5			12.9	10.8	10.2	12.7	12.0	13.3	11.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B			B	B	B	B	B	B	B	
Approach Delay		10.5			12.0			12.4			12.2	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)		3			29	18	1	40	24	16	19	
Queue Length 95th (ft)		17			93	62	10	136	91	68	74	
Internal Link Dist (ft)		77			1			321			357	
Turn Bay Length (ft)							50		100	100		
Base Capacity (vph)		1388			1073	1148	865	1353	1150	732	1215	
Starvation Cap Reductn		0			0	0	0	0	0	0	0	
Spillback Cap Reductn		0			0	0	0	0	0	0	0	
Storage Cap Reductn		0			0	0	0	0	0	0	0	
Reduced v/c Ratio		0.02			0.20	0.12	0.01	0.22	0.16	0.17	0.12	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 42.1
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.41
Intersection Signal Delay: 12.2 Intersection LOS: B
Intersection Capacity Utilization 51.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Weaver St & Main Street



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	6	279	308	4	4	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	310	342	4	4	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		63				
pX, platoon unblocked					0.96	
vC, conflicting volume	347				666	342
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	347				632	342
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	99
cM capacity (veh/h)	1212				425	700

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	317	342	4	12
Volume Left	7	0	0	4
Volume Right	0	0	4	8
cSH	1212	1700	1700	567
Volume to Capacity	0.01	0.20	0.00	0.02
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	0.2	0.0	0.0	11.5
Lane LOS	A			B
Approach Delay (s)	0.2	0.0		11.5
Approach LOS				B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

LANE SUMMARY

Site: Build PM Peak Hour

Carroboro Road Diet and Neighborhood Study
W. Main Street @ W. Weaver Street/Elm Street
Build PM Peak Hour
Roundabout

Lane Use and Performance

	Demand Flows L veh/h	T veh/h	R veh/h	Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Lane Length ft	SL Type	Cap. Adj. %	Prob. Block. %
South: West Main Street																
Lane 1	10	285	180	474	2.0	1060	0.447	100	2.4	LOS A	4.0	102.9	1600	–	0.0	0.0
Approach	10	285	180	474	2.0		0.447		2.4	LOS A	4.0	102.9				
East: West Weaver Street																
Lane 1	122	75	134	331	2.0	815	0.406	100	6.1	LOS A	3.2	82.4	1600	–	0.0	0.0
Approach	122	75	134	331	2.0		0.406		6.1	LOS A	3.2	82.4				
North East: Elm Street																
Lane 1	7	0	9	16	2.0	603	0.027	100	8.3	LOS A	0.2	4.4	1600	–	0.0	0.0
Approach	7	0	9	16	2.0		0.027		8.3	LOS A	0.2	4.4				
North: West Main Street																
Lane 1	117	144	2	263	2.0	892	0.295	100	4.9	LOS A	2.3	57.2	1600	–	0.0	0.0
Approach	117	144	2	263	2.0		0.295		4.9	LOS A	2.3	57.2				
West: West Weaver Street																
Lane 1	5	12	16	33	2.0	758	0.044	100	4.7	LOS A	0.3	6.9	1600	–	0.0	0.0
Approach	5	12	16	33	2.0		0.044		4.7	LOS A	0.3	6.9				
Intersection				1118	2.0		0.447		4.2	LOS A	4.0	102.9				

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all lanes. LOS Method: Delay (HCM).
Level of Service (Worst Lane): LOS A. LOS Method for individual lanes: Delay (HCM).
Approach LOS values are based on the worst delay for any lane.
Roundabout LOS Method: Same as Sign Control.
Roundabout Capacity Model: SIDRA Standard.