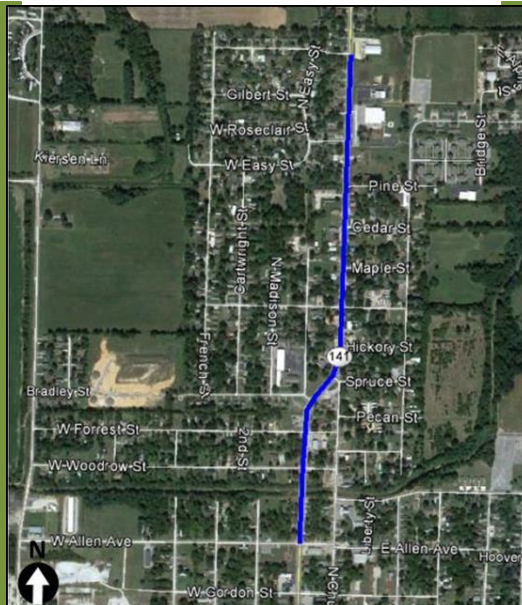


Final Report

Highway 141 STEP Study

Job 100978



Prepared For:
Arkansas Department of Transportation
October 2019



HIGHWAY 141 STEP INNOVATION STUDY (Jonesboro) (S)

CRAIGHEAD COUNTY

FINAL TRAFFIC REPORT



Prepared by Garver for the
Northeast Arkansas Regional Transportation Planning Commission
In cooperation with the Federal Highway Administration

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1.0 Introduction

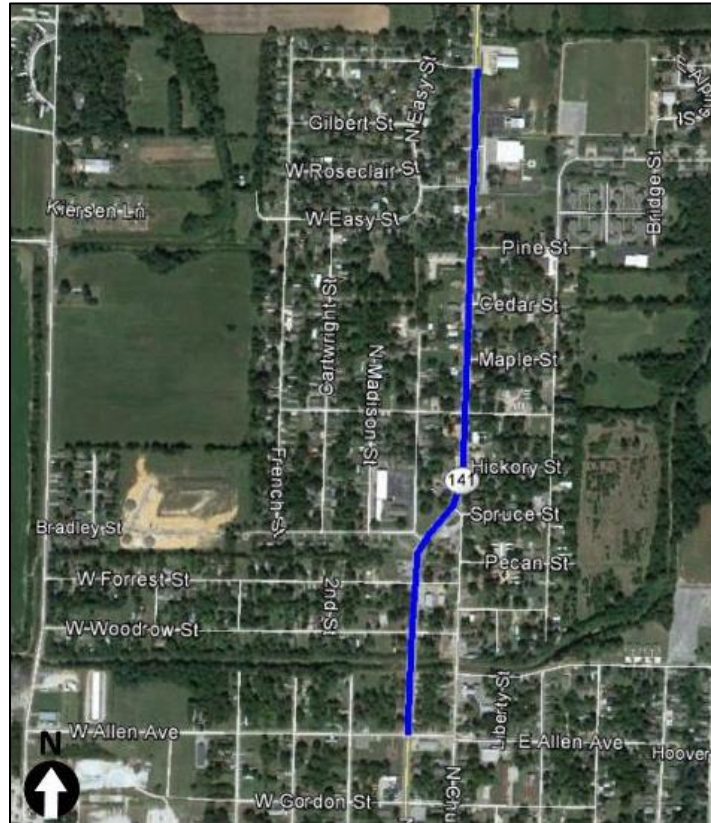
This Traffic Report was developed in order to achieve the following goals:

- Identify the pedestrian and bicyclist safety issues that exist within the Highway 141 project corridor.
- Identify and evaluate potential countermeasures to address current and long-term needs.
- Recommend select countermeasures for implementation.

1.1 Background

Highway 141, also known as N. Church Street, serves as a minor arterial facility through Jonesboro. The study area extends from Allen Avenue on the south end to Alpine Street on the north end, and the majority of the corridor has a posted speed limit of 40 miles per hour. (A small portion of the study area just north of Allen Avenue has a posted speed limit of 35 mph.) Highway 141 contains four traffic lanes with no shoulders and sidewalks mostly on the east side of the road. Two bus stops are located within the study area: one between Woodrow Street and Forrest Street, and one at Novak Street. Google Maps and the JETS Route 37 map show a third bus stop at Center Street, but no evidence of a third bus stop was observed during the site visit. A map of the study corridor is shown in **Figure 1** on the following page.

Figure 1: Highway 141 Study Corridor



2.0 Existing Conditions

In order to identify and evaluate appropriate countermeasures for pedestrian and bicyclist safety issues within the corridor, data was collected and existing conditions were observed. The findings from this effort are described in the following subsections.

2.1 Data Collected

The following data was collected for this study:

- The 2018-2019 Stops and Timetables for the JET bus system were obtained and verified during the site visit. A JET bus (Route 37) passes by the bus stops within

the study area at 18 minutes and at 48 minutes past each hour throughout the day. This information is provided in **Appendix A – Traffic Data**.

- Crash reports were obtained for all crashes involving pedestrians within the study area. This data revealed only one pedestrian-related crash which occurred on October 25, 2007 on the north leg of the intersection at Highway 141 and Allen Avenue as a northbound vehicle struck a pedestrian crossing along Allen Avenue.
- Pedestrians and bicyclists crossing Highway 141 at key locations were counted during peak time periods on Friday, April 5, 2019. **Table 1** below summarizes the results of these counts. This data is also provided in **Appendix A – Traffic Data**.

Table 1: Pedestrian Crossing Counts

Section of Hwy. 141	Time Period	# Crossing Hwy. 141		# of People
		Pedestrians	Bicyclists	Waiting at Bus Stop
Alpine St. & Novak St.	7:00 AM-9:00 AM	3	2	1
	11:30 AM-1:30 PM	4	0	0
	4:00 PM-6:00 PM	33	5	2
Maple St. & Hickory St.	7:00 AM-9:00 AM	2	0	n/a
	11:30 AM-1:30 PM	2	2	n/a
	4:00 PM-6:00 PM	12	1	n/a
Bradley St. & Woodrow St.	7:00 AM-9:00 AM	6	0	0
	11:30 AM-1:30 PM	12	1	0
	4:00 PM-6:00 PM	15	1	0

These crossing counts were conducted on a payday with pleasant weather, so activity was likely on the high end of average. The highest crossing activity was observed between adjacent neighborhoods and the Dollar General (at Alpine Street) and between Bradley Street and the Jonesboro Express Mart. Crossings were typically in groups of three or more and often included children. During the

collection of these crossing counts, a near miss of two pedestrians at Forrest Street was observed.

- Turning movement counts were obtained at the intersection of Allen Avenue at Highway 141 on Wednesday, April 10, 2019 from 7:45 AM to 8:00 PM. This data, provided in **Appendix A – Traffic Data**, included percentages of trucks and buses as well as number of pedestrian and bicyclist crossings at this intersection. During these counts, a total of 8 pedestrians crossed Highway 141, and 34 pedestrians and 6 bicyclists crossed Allen Avenue. A few pedestrians and/or bicyclists crossed during each of the vehicular peaks, although the majority of the crossings occurred during off-peak times.
- Turning movement counts were obtained at the intersection of Alpine Street at Highway 141 on Thursday, April 11, 2019 from 7:45 AM to 8:00 PM. This data, provided in **Appendix A – Traffic Data**, included percentages of trucks and buses as well as number of pedestrian and bicyclist crossings at this intersection. During these counts, a total of 12 pedestrians and 1 bicyclist crossed Highway 141. None of the pedestrian or bicyclist crossings occurred during the AM or Midday peaks, and only two pedestrian crossings occurred during the PM peak.
- The Average Daily Traffic (ADT) volumes along Highway 141 within the study area were obtained from ARDOT permanent count stations. Two volume count stations (Station ID 160214 just south of Allen Avenue and Station ID 160208 between Woodrow Street and Forrest Street) show a 2018 ADT of 12,000 vehicles per day (vpd). One classification count station (Station ID 160205 just south of Alpine Street) shows a 2018 ADT of 9,300 vpd with 6% trucks.

2.2 Site Visit Observations

A site visit was conducted on Wednesday, April 3, 2019 during AM, midday, and PM peak times. Observations from this site visit are discussed in the following subsections.

2.2.1 Vehicular and Bus Observations

Vehicles drive about 40 miles per hour throughout the corridor even during the rush hours. No excessive speeding was noted. Several school buses drive through this area, especially during the AM peak period. The school buses do not load or

Figure 2: School Bus Loading on Allen Avenue



unload on Highway 141, but they were observed to load and unload on Allen Avenue next to the park on the west side of Highway 141, as shown in **Figure 2**.

Two JET bus stop locations exist within the study area: between Woodrow Street and Forrest Street, and at Novak Street. As shown in **Figure 3**, the bus stop between Woodrow Street and Forrest Street (pictured on top of page 8) lacks a bench and pedestrian refuge. Additionally, no designated crosswalks are provided near this bus stop. The bus stop at Novak Street (pictured on bottom of page 8) has a bench within a pedestrian refuge and has a designated crosswalk across Highway 141. However, this crossing lacks wheelchair ramps on either side of the crosswalk and also lacks sidewalk on the western side of Highway 141.

Figure 3: JET Bus Stops



The JET buses were observed to come through the corridor twice an hour (at approximately 18 minutes and at 48 minutes past the hour). However, these buses did not slow down or stop unless a person was standing directly at the bus stop sign. When pedestrians were standing near but not at the sign, the buses passed by without even slowing. While this avoids undue delays, this does present one concern. As mentioned above, the bus stop between Woodrow Street and Forrest Street lacks a pedestrian shelter or bench, and it is very near to the traffic lane. During the AM peak observations, a mother and her small children, shown in **Figure 4**, were observed waiting at this bus stop. The mother had difficulty maintaining the safety of her children while staying

directly at the bus stop sign. The children repeatedly wandered off even into the highway, forcing the mother to leave the bus stop sign to chase after them. Children observed at the Novak Street bus stop were more easily contained within the shelter area with the bench.

Figure 4: Lack of Accommodations at Southern Bus Stop



No bus loadings were observed during the AM peak or the midday peak. Two bus loadings were observed at the Novak Street bus stop during the PM peak observations. Both times, the loading took approximately 1 minute even when one of the patrons mounted a bicycle on the front of the bus. As shown in **Figure 5**, traffic passed the bus in the inside lane without forming any queues. As the traffic passed, it slowed to approximately 15 mph.

Figure 5: Bus Loading at Novak Street



2.2.2 Pedestrian and Bicyclist Observations

During the AM peak, pedestrian and bicyclist activity was fairly low. Four pedestrians were observed crossing Highway 141 and three pedestrians were observed walking along the sidewalks on the eastern side of Highway 141 during this hour. All of these pedestrians were sited either by the bus stop between Woodrow Street and Forrest Street or near the Jonesboro Express Mart just north of Bradley Street. **Figure 6** shows two pedestrians crossing from the Jonesboro Express Mart to Bradley Street. As captured in this photo, the crossings often occur in groups. In many cases, the pedestrians run across Highway 141 to avoid vehicles. This is indicative of insufficient number of gaps in vehicular traffic of adequate length for safe pedestrian crossing. No bicyclists were observed during the AM peak hour.

Figure 6: Pedestrians Crossing at Jonesboro Express Mart



Around midday, four pedestrians were observed walking along the sidewalks. None of these pedestrians were observed crossing the highway, and no bicyclists were observed.

Between 3:00-5:30 PM, significantly more pedestrian and bicyclist activity was observed. Approximately 30 pedestrians and 4 bicyclists were observed using the sidewalks, and 11 pedestrians and 4 bicyclists were observed crossing Highway 141. The bicyclists consistently used the sidewalks instead of the street. Crossings were observed at Woodrow Street, the southern bus stop, the Express Mart, Pine Street, Novak Street, and Alpine Street.

As shown in **Figure 7**, pedestrians using motor wheelchairs were observed crossing at Alpine Street on more than one occasion. Due to the lack of wheelchair ramps at this intersection, the pedestrians had to cross Highway 141 diagonally from the Dollar General parking lot, around the northwest curb of the intersection, to Alpine Street (or vice versa). During the first crossing incident, traffic along Highway 141 had to stop and wait for the pedestrian to clear the highway. These instances demonstrate a clear need

for pedestrian facilities at Alpine Street including wheelchair ramps, sidewalks on the west side of Highway 141, and a designated crosswalk. The *MUTCD* provides the following criteria for the installation of an unsignalized crosswalk along a roadway with four or more lanes and no raised median or refuge island: the speed limit does not exceed 40 mph and the ADT is less than 12,000 vpd. The northern end of the study area has a speed limit of 40 mph and an ADT of only 9,300 vpd, so an unsignalized crosswalk could be installed across Highway 141 at Alpine Street without violating *MUTCD* criteria.

Figure 7: Pedestrians in Motorized Wheelchairs Crossing at Alpine Street



2.2.3 Existing Pedestrian and Bicyclist Accommodations

Inadequate lighting was noted, particularly near the Parker Park Community Center and designated crosswalk at Novak Street. At dusk, visibility of pedestrians using this designated crosswalk is poor.

Sidewalks exist on the western side of Highway 141 from Allen Avenue to Forrest Street. Sidewalks exist along the entire length of the study area on the eastern side of Highway 141. Mailboxes within the sidewalk impede the useable width of the sidewalk. Additionally, on trash collection day, the sidewalk is filled with trash cans that almost entirely block the sidewalk path. Grass overgrowth is also an issue along the existing sidewalks, especially on the western side of the highway between Allen Avenue and Forrest Street. The sidewalk near the Jonesboro Express Mart is uneven and littered with rocks from Jonesboro Express Mart's gravel driveway.

Pedestrian facilities were inventoried at each of the intersections and are described below:

- At Alpine St, no wheelchair ramps are provided and no sidewalks are provided on the west side of Highway 141.
- At Novak St, a marked crosswalk exists with advance warning signs that have flashing lights. However, no wheelchair ramps (and no tactile yellow truncated domes) exist. The eastern edge of the crosswalk leads into a curb with the bus stop and driveway to Parker Park Community Center just slightly to the north. The western edge of the crosswalk leads directly into Novak Street. No stop bars are provided on either side of the crosswalk.

- At Pine Street, the northeast ramp faces diagonally toward the intersection. This ramp has ridges in the concrete, but it lacks yellow tactile truncated domes. The southeast corner is comprised of a residential driveway that faces diagonally toward the intersection. Neither of these ramps meet current ADA standards. No receiving wheelchair ramps or sidewalks exist on the west side of this intersection.
- At Cedar Street, the northeastern ramp has north-south and east-west ramps with an island and ridges within the concrete. This ramp appears to meet current ADA standards except that it lacks yellow tactile truncated domes. The southeastern ramp fails to meet current ADA standards as it points diagonally toward the intersection and lacks yellow tactile truncated domes. No receiving wheelchair ramps or sidewalks exist on the west side of this intersection.
- At Maple Street, the northeastern ramp and the southeastern ramp both face diagonally toward the intersection and have ridges within the concrete, but they both lack yellow tactile truncated domes. Neither of these ramps meet current ADA standards. No receiving ramps or pedestrian facilities are located on the west side of this intersection.
- At Center Street, the northeastern and southeastern ramps both fail to meet current ADA standards as they face diagonally toward the intersection and lack yellow tactile truncated domes. No receiving ramps or pedestrian facilities are located on the west side of the intersection.
- At Hickory Street, the northeastern and southeastern ramps fail to meet current ADA standards as they face diagonally toward the intersection and lack yellow tactile truncated domes. These ramps have more notable slopes and grass

overgrowth than other ramps within the study area. No receiving ramps or pedestrian facilities are located on the west side of the intersection.

- At Spruce Street, the northeastern and southeastern ramps fail to meet current ADA standards as they face diagonally toward the intersection and lack yellow tactile truncated domes. The concrete is notably deteriorated, and a pole has been cut off within the sidewalk pavement. No receiving ramps or sidewalks exist on the west side of this intersection.
- At Bradley Street, no pedestrian facilities are provided.
- At Forrest Street, wheelchair ramps located in the northeast corner, southeast corner, and southwest corner all provide north-south and east-west ramps which appear to meet current ADA standards except that they lack yellow tactile truncated domes. The northwest corner lacks wheelchair ramps, and sidewalk on the west side of this intersection begins in the southwest corner and continues only to the south.
- At Woodrow Street, the northeast, northwest, and southwest corners of the intersection contain wheelchair ramps with both north-south and east-west facing ramps, an island, and ridges within the concrete. These ramps lack yellow tactile truncated domes and may exceed the maximum slopes allowed under current ADA standards. The ramp in the northwest corner is overgrown with grass and has a power pole obstructing the path. The ramp in the southeast corner fails to meet current ADA standards as it faces diagonally into the intersection and lacks yellow tactile truncated domes.
- At Allen Avenue, the wheelchair ramps in all four corners of the intersection fail to meet current ADA standards as they face diagonally toward the center of the intersection. The northeast ramp has yellow tactile truncated domes located in

the middle of the ramp. The other three ramps contain ridges in the pavement but no yellow tactile truncated domes.

3.0 Safety Analysis

Only one pedestrian-related crash has occurred in over ten years of available crash history within the study area. This crash occurred at 12:14 PM on October 25, 2007 when a northbound vehicle on Highway 141 struck a pedestrian crossing from east to west at Allen Avenue, resulting in injury to the pedestrian. Alcohol was not involved, and no contributing factors were listed in the accident report.

4.0 Potential Countermeasures

Potential countermeasures to improve pedestrian safety were selected based on field observations as well as STEP Countermeasure tables provided by the Federal Highway Administration (FHWA).

The following countermeasures were identified based on field observations:

- Provide continuous sidewalk along the west side of Highway 141 throughout the study corridor.
- Provide wheelchair ramps, stop bars, and proper alignment of the pedestrian facilities at the Novak Street crosswalk.
- Provide a bench and refuge area at the bus stop between Woodrow Street and Forrest Street.

- Add designated crosswalk locations between Bradley Street and Spruce Street and at Alpine Street. All designated crosswalk locations should be marked with high-visibility crosswalk markings, and they should have stop bars on both sides of the crosswalk, wheelchair ramps and sidewalks on both ends of the crosswalk, and advance “Yield Here” signs.
- Add and improve lighting, particularly at crossing locations.
- Ensure ADA compliance for all pedestrian facilities, including sidewalks and wheelchair ramps. Issues that need to be addressed include maintaining adequate widths, slopes, and quality of pavement for all sidewalks and wheelchair ramps. Additionally, several of the wheelchair ramps need updated layouts and tactile yellow domes in order to meet current ADA standards. Any intersection where a wheelchair ramp is provided on one side of the street should have a receiving wheelchair ramp and sidewalk on the opposite side of the street.

Table 2 on the following page was produced by FHWA and shows STEP countermeasures that should be considered based on the posted speed limit and AADT of the corridor. The Highway 141 corridor has a posted speed limit of 40 mph and an AADT between 9,000-15,000 vpd. This corridor has two lanes in each direction and no raised median.

Table 2: Application of Pedestrian Crash Countermeasures by Roadway Feature (from FHWA)

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
2 lanes (1 lane in each direction)	① 2 4 5 6	① 5 6 7 9	① 5 6 7 9	① 4 5 6 7 9	① 5 6 7 9	① 5 6 7 9	① 4 5 6 7 9	① 5 6 7 9	① 5 6 9
3 lanes with raised median (1 lane in each direction)	① 2 3 4 5	① ③ 5 6 7 9	① ③ 5 6 7 9	① 3 4 5 7 9	① ③ 5 6 7 9	① ③ 5 6 7 9	① ③ 4 5 7 9	① ③ 5 6 7 9	① ③ 5 6 9
3 lanes w/o raised median (1 lane in each direction with a two-way left-turn lane)	① 2 3 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 7 9	① 3 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 7 9	① ③ 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 9
4+ lanes with raised median (2 or more lanes in each direction)	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 8 9	① ③ 5 6 7 8 9	① ③ 5 6 8 9	① ③ 5 6 8 9
4+ lanes w/o raised median (2 or more lanes in each direction)	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 8 9	① ③ 5 6 7 8 9	① ③ 5 6 7 8 9	① ③ 5 6 8 9	① ③ 5 6 7 8 9	① ③ 5 6 8 9	① ③ 5 6 8 9
<p>Given the set of conditions in a cell,</p> <p># Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.</p> <p>● Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.</p> <p>○ Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.*</p> <p>The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.</p>					<p>1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs</p> <p>2 Raised crosswalk</p> <p>3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line</p> <p>4 In-Street Pedestrian Crossing sign</p> <p>5 Curb extension</p> <p>6 Pedestrian refuge island</p> <p>7 Rectangular Rapid-Flashing Beacon (RRFB)**</p> <p>8 Road Diet</p> <p>9 Pedestrian Hybrid Beacon (PHB)**</p>				

*Refer to Chapter 4, “Using Table 1 and Table 2 to Select Countermeasures,” for more information about using multiple countermeasures.

**It should be noted that the PHB and RRFB are not both installed at the same crossing location.

This table was developed using information from: Zegeer, C.V., J.R. Stewart, H.H. Huang, P.A. Lagerwey, J. Feaganes, and B.J. Campbell. (2005). Safety effects of marked versus unmarked crosswalks at uncontrolled locations: Final report and recommended guidelines. FHWA, No. FHWA-HRT-04-100, Washington, D.C.; FHWA. Manual on Uniform Traffic Control Devices, 2009 Edition. (revised 2012). Chapter 4F, Pedestrian Hybrid Beacons. FHWA, Washington, D.C.; FHWA. Crash Modification Factors (CMF) Clearinghouse. <http://www.cmfclearinghouse.org/>; FHWA. Pedestrian Safety Guide and Countermeasure Selection System (PEDSAFE). <http://www.pedbikesafe.org/PEDSAFE/>; Zegeer, C., R. Srinivasan, B. Lan, D. Carter, S. Smith, C. Sundstrom, N.J. Thirsk, J. Zegeer, C. Lyon, E. Ferguson, and R. Van Houten. (2017). NCHRP Report 841: Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments. Transportation Research Board, Washington D.C.; Thomas, Thirsk, and Zegeer. (2016). NCHRP Synthesis 498: Application of Pedestrian Crossing Treatments for Streets and Highways. Transportation Research Board, Washington, D.C.; and personal interviews with selected pedestrian safety practitioners.














































Based on the information provided in **Table 2**, the following countermeasures should be considered for Highway 141:

- High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crosswalk warning signs.
 - Parking restrictions on crosswalk approach are not applicable to the study area since parking on the street is already not allowed.
 - The high-visibility crosswalk markings, adequate nighttime lighting levels, and crosswalk warning signs were also identified as desirable countermeasures during the site visit.
- Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line.
 - These were also identified as desirable countermeasures during the site visit.
- Curb extension
 - This countermeasure is not applicable since on-street parking is not allowed on this corridor.
- Pedestrian refuge island
 - This countermeasure is not applicable due to lack of space to implement a refuge island.
- Road Diet
 - This countermeasure may be appropriate if reducing the number of traffic lanes does not detrimentally affect vehicular operations. Further investigation of this countermeasure is needed.

- Pedestrian Hybrid Beacon (PHB)
 - This countermeasure may be appropriate if pedestrians are unable to find adequate gaps in vehicular traffic to safely cross Highway 141. Site visit observations indicate some issues with availability of gaps. Further investigation of this countermeasure is needed.

As shown in **Table 3** on the following page, FHWA provides another table of STEP countermeasures which are listed according to the safety issues that they address. During the site visit, the main safety issues noted were conflicts at crossing locations, inadequate conspicuity/visibility, and insufficient separation from traffic. Excessive vehicle speed and issues with drivers not yielding to pedestrians in the crosswalk were not observed.

Table 3: Safety Issues Addressed Per Countermeasure (from FHWA)

Pedestrian Crash Countermeasure for Uncontrolled Crossings	Safety Issue Addressed				
	Conflicts at crossing locations	Excessive vehicle speed	Inadequate conspicuity/visibility	Drivers not yielding to pedestrians in crosswalks	Insufficient separation from traffic
Crosswalk visibility enhancement					
High-visibility crosswalk markings*					
Parking restriction on crosswalk approach*					
Improved nighttime lighting*					
Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line*					
In-Street Pedestrian Crossing sign*					
Curb extension*					
Raised crosswalk					
Pedestrian refuge island					
Pedestrian Hybrid Beacon					
Road Diet					
Rectangular Rapid-Flashing Beacon					

*These countermeasures make up the STEP countermeasure “crosswalk visibility enhancements.” Multiple countermeasures may be implemented at a location as part of crosswalk visibility enhancements.

Based on **Table 3**, all of the countermeasures listed in the table may help with one or more safety issues identified within the corridor. Applicability of these countermeasures within the study corridor are considered below:

- High-visibility crosswalk markings.
 - This was identified during the site visit and in **Table 2** as a desirable countermeasure.

- Parking restrictions on crosswalk approach.
 - As mentioned earlier, this is not applicable since on-street parking is not allowed throughout this corridor.
- Improved night time lighting.
 - This was identified during the site visit and in **Table 2** as a desirable countermeasure.
- Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line.
 - This was identified during the site visit and in **Table 2** as a desirable countermeasure.
- In-Street Pedestrian Crossing Sign
 - This countermeasure was not specifically identified during the site visit or in **Table 2** but could be an effective countermeasure to increase driver awareness of crossing locations.
- Curb extension
 - As mentioned earlier, this is not applicable since on-street parking is not allowed throughout this corridor.
- Raised crosswalk
 - This was not considered further since the corridor is a state highway with a 40 mph speed limit.
- Pedestrian refuge island
 - As stated earlier, this is not applicable due to lack of space for a pedestrian refuge island.
- Pedestrian Hybrid Beacon
 - This countermeasure was also listed in **Table 2** and will be considered further.

- Road Diet
 - This countermeasure was also listed in **Table 2** and will be considered further.
- Rectangular Rapid-Flashing Beacon
 - This countermeasure was not specifically identified during the site visit or in **Table 2** but could be an effective countermeasure to increase driver awareness of crossing locations. This countermeasure will be considered further.

Table 4 on the following page summarizes the countermeasures that were identified as applicable to the study area and shows the source(s) of the countermeasure recommendations. The countermeasures with asterisks will be investigated further in order to determine whether they should be included in the recommendations.

Table 4: Potential Countermeasures for Highway 141 Corridor

Countermeasure	Site Visit	FHWA	
		Table 2	Table 3
Ensure ADA compliance for all pedestrian facilities	X		
maintaining adequate widths	X		
maintaining maximum slopes	X		
maintaining quality of pavement	X		
proper layout of wheelchair ramps	X		
use of tactile yellow domes at wheelchair ramps	X		
Provide continuous sidewalk along the west side of Highway 141	X		
Provide wheelchair ramps at the Novak Street crosswalk	X		
Provide a bench and refuge area at southern bus stop	X		
Add designated crosswalk locations	X		
Improve lighting	X	X	X
High-visibility crosswalk markings	X	X	X
Stop bars in front of crosswalks	X	X	X
Advance Yield Here to (Stop Here for) Pedestrians sign		X	X
Road diet*		X	X
Pedestrian Hybrid Beacon*		X	X
In-street pedestrian crossing sign			X
Rectangular Rapid-Flashing Beacon*			X

*Countermeasure will be investigated further before including as a recommendation.

5.0 Investigation of Countermeasures

A few of the potential countermeasures that were identified require further investigation before being selected as a recommendation. These countermeasures include: road diet, pedestrian hybrid beacon, and rectangular rapid-flashing beacon. The investigation of these countermeasures is detailed in the following subsections.

5.1 Road Diet

In order to establish if a road diet would be a feasible countermeasure for the Highway 141 corridor, the peak hour volumes along Highway 141 were compared to capacity.

The highest hourly volume along the Highway 141 corridor (787 vehicles per hour) occurs in the northbound direction at Allen Avenue during the PM peak hour. According to the *Highway Capacity Manual, 6th Edition (HCM)*, the capacity of a multilane highway segment is 1,900 passenger cars per hour per lane (pc/h/ln) for a highway with a free-flow speed of 45 mph¹. Since capacity is higher than the highest hourly volume counted in one direction along the corridor, the Highway 141 corridor should have adequate capacity to serve the peak hour volumes even if the number of lanes is reduced from two lanes per direction to one lane per direction.

Next, the effects on vehicular traffic of implementing a road diet along the study area of Highway 141 were investigated. First, the *Highway Capacity Software (HCS) Multi-Lane Highway* module was utilized to determine the existing corridor level of service (LOS) in the peak direction of travel during the peak hour, and the *HCS Two-lane Highway* module was utilized to determine the corresponding corridor LOS under road diet conditions. Because implementing the road diet causes the classification of the roadway to change from a multilane highway to a two-lane highway, the criteria specified in the *HCM* for LOS differ. **Table 5** shows these criteria as specified in the *HCM*, pages 12-20 and 15-8. The segment of Highway 141 within the study area would be classified as a Class III Two-Lane Highway under road diet conditions because it is located within a developed area. For Multilane Highways, LOS is based on density (pc/mi/ln). For Class III Two-Lane Highways, LOS is based on percent of free flow speed (PFFS) which represents the ability of vehicles to travel at or near the posted speed limit (40 mph in this case).

¹Capacity was obtained from Exhibit 12-4 of the *HCM*. The highest posted speed limit within the study area is 40 mph. A free flow speed of 45 mph was estimated based on the speed limit plus 5 mph as recommended on page 12-28 of the *HCM*.

Table 5: LOS Criteria for Multilane and Two-lane Highways

LOS	Multilane Highway density (pc/mi/ln)	Class III Two-Lane Highway PFFS (%)
A	<=11	>91.7
B	>11-18	>83.3-91.7
C	>18-26	>75.0-83.3
D	>26-35	>66.7-75.0
E	>35-45	<=66.7
F	>45 or demand exceeds capacity	demand exceeds capacity

Table 6 summarizes the results from this *HCS* analysis. Detailed results are provided in **Appendix B – Operational Analysis Results**. As shown, implementing a road diet on Highway 141 would cause a reduction in vehicular service along the corridor from LOS B to LOS D in the peak direction during the peak hour.

Table 6: LOS for Existing vs. Road Diet Conditions

<i>HCS</i> Results	Existing	Road Diet
density, pc/mi/ln	13.7	-
Avg. Speed, mi/h	-	29.3
PFFS (%)	-	68.3%
LOS	B	D

Next, *SimTraffic* was used to compare average total delay for all vehicles traveling through the study area under existing conditions versus under road diet conditions during the busiest peak hour (the PM peak). Detailed results of this analysis are provided in **Appendix B – Operational Analysis Results**. These results are summarized in **Table 7** and show that implementing a road diet on Highway 141 would cause slightly more than double the delay currently experienced by drivers traveling through the study

area during the peak period (increasing the average delay from 3.4 seconds per vehicle to 7.1 seconds per vehicle).

Table 7: Delay for Existing vs. Road Diet Conditions

<i>SimTraffic</i> Results	Existing	Road Diet
Vehicles Entered	1268	1275
Total Delay (hr)	1.2	2.5
Avg. Delay (sec/veh)	3.4	7.1

It should be noted that the analyses done for this comparison of existing versus road diet conditions were based on 2019 volumes and were conducted only on a high level. This countermeasure was not selected as a recommendation since LOS D conditions would be anticipated in 2019 with the road diet. Inadequate performance would likely occur with future growth. If this countermeasure is still desired for further investigation, a more detailed analysis should be conducted which includes a future design year.

5.2 Pedestrian Hybrid Beacon

A Pedestrian Hybrid Beacon (PHB) should be considered if a signal is not warranted but gaps in traffic are inadequate to permit pedestrians to cross. According to the *Traffic Control Devices Handbook, Second Edition*, an average of one gap per minute (60 gaps per hour) is needed to adequately allow pedestrians to cross the road. The number of available gaps of adequate length were estimated based on the road width, average pedestrian walking speed, and hourly vehicular volume. The volumes on the south approach of the intersection of Highway 141 at Alpine Street were used for this analysis since this is a potential location for a new crosswalk, and traffic volumes at the

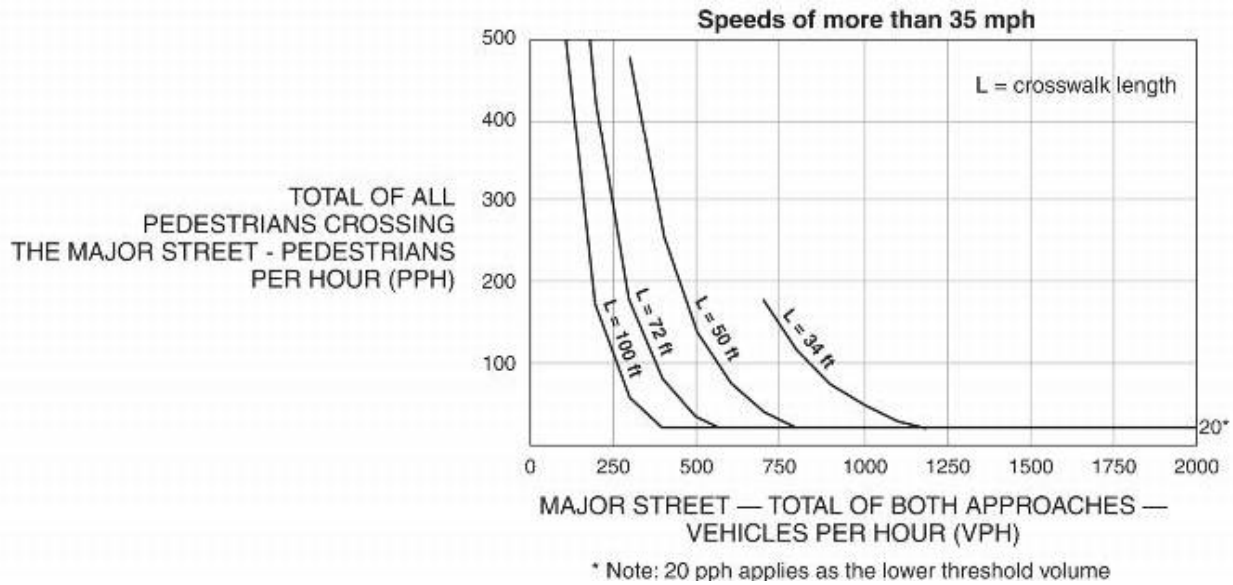
designated crosswalk at Novak Street and at the potential new crosswalk location between Bradley Street and Spruce Street were not collected. **Table 8** shows the results of the gap analysis. Based on these results, pedestrians do not experience enough gaps in traffic of adequate length to safely cross during several hours of the day.

Table 8: Gap Analysis for Designated Crosswalk

From Time	To Time	Contributing Movement Volumes			# Veh Crossing	headway	flow rate	probability of no vehicles arriving during needed time to cross	Adequate Length	Meets critical volume
		SBT	EBR	NB					Gaps/hr	
8:00 AM	9:00 AM	341	3	237	581	6.20	0.16	10.03%	58	fail
9:00 AM	10:00AM	213	5	159	377	9.55	0.10	22.49%	85	meets
10:00 AM	11:00 AM	233	5	222	460	7.83	0.13	16.19%	74	meets
11:00 AM	12:00AM	229	3	246	478	7.53	0.13	15.08%	72	meets
12:00 PM	1:00PM	246	10	267	523	6.88	0.15	12.62%	66	meets
1:00 PM	2:00 PM	244	17	291	552	6.52	0.15	11.25%	62	meets
2:00 PM	3:00 PM	311	7	333	651	5.53	0.18	7.60%	49	fail
3:00 PM	4:00 PM	326	11	451	788	4.57	0.22	4.42%	35	fail
4:00 PM	5:00 PM	280	4	432	716	5.03	0.20	5.88%	42	fail
5:00 PM	6:00 PM	284	13	580	877	4.10	0.24	3.11%	27	fail
6:00 PM	7:00 PM	219	7	349	575	6.26	0.16	10.27%	59	fail
7:00 PM	8:00 PM	171	5	272	448	8.04	0.12	16.98%	76	meets

The *Manual on Uniform Traffic Control Devices (MUTCD)* provides a table of guidelines for the installation of PHB on high-speed (35 mph or more) roadways as shown in **Figure 8**. These guidelines are not meant as mandatory warrants but rather as guidance. Based on this figure, 20 or more pedestrians crossing per hour would be cause for considering the installation of a PHB. The pedestrian crossing data does not indicate that this high of a volume of pedestrians crossing is likely at any single crossing location during one hour. However, since the number of pedestrians crossing is merely a factor for guidance and not a firm warrant, the use of a PHB was considered further as an option to improve pedestrian safety and address the inadequacy of gaps in vehicular traffic for crossing safely.

Figure 8: Guidelines for Installation of PHB (MUTCD Figure 4F-2)



In order to evaluate the impact to vehicular traffic through installing a PHB, *SimTraffic* was used to compare the average delay per vehicle traveling through the study area under existing conditions versus conditions with one PHB installation between Allen Avenue and Alpine Street (assumed 100 feet north of Bradley Street). The model with the PHB assumed that the signal was actuated eight times during the peak hour. This was a conservatively high approximation based on pedestrian crossing data taken at key locations from 4:00-6:00 PM and the observation that many of the pedestrians crossed in groups rather than alone. The model also assumed 28 seconds for each pedestrian crossing phase (7 seconds of walk time, 18 seconds of flashing don't walk time, and 3 seconds of all-red time). The flashing don't walk time was calculated based on *MUTCD* guidelines. The results of the *SimTraffic* analysis are provided in **Appendix B – Operational Analysis Results** and are summarized in **Table 9**. As shown, installing one PHB would increase the average delay experienced by drivers within the study area

during the peak period by as much as 2.8 seconds per vehicle (an increase from 3.4 seconds per vehicle to 6.2 seconds per vehicle). It should be noted that the total delay added to vehicular traffic is directly related to the number of times the PHB is actuated, and a conservatively high value was assumed for this analysis in order to show a reasonable worst case scenario on the vehicular impact during the peak hour.

Table 9: Vehicular Delays with and without Pedestrian Hybrid Beacon

<i>SimTraffic</i> Results	Existing	One Pedestrian Hybrid Beacon
Vehicles Entered	1268	1285
Total Delay (hr)	1.2	2.2
Avg. Delay (sec/veh)	3.4	6.2

Based on this investigation, a PHB is recommended for installation in a single location. Multiple installations were not considered further due to the cost of installation as well as the goal to preserve vehicular flow throughout the corridor. The amount of delay to vehicular traffic introduced by a single PHB is reasonable in order to provide safe crossing for a high pedestrian crossing location where gaps in vehicular traffic are currently inadequate to cross safely.

During the site visit as well as the pedestrian counts, the area just north of Bradley Street near the Jonesboro Express Mart was observed to be one of the busiest pedestrian crossing locations within the study area. Therefore, this area was identified as the location which would benefit most from the installation of a PHB. Guidance from the *MUTCD* advises spacing a PHB at least 100 feet from driveways and side streets that are stop controlled. The distance between Bradley Street and Spruce Street is adequate

to achieve this spacing between the PHB and these two intersecting streets. A large driveway to the Jonesboro Express Mart is located between these two intersections. If the owner is agreeable, this driveway could possibly be relocated and narrowed or consolidated in order to provide the desired spacing between the PHB and the driveway.

The proposed location of the PHB is within a tangent section in between horizontal curves to the north and to the south. In order to evaluate sight distance at this location, stopping sight distance was considered. For a speed of 40 mph, a stopping sight distance of 445 feet is needed. Based on this distance, drivers have a straight line of sight of the PHB as they are driving around the curves along Highway 141 from both directions. However, a few trees may need to be removed from within the curves to ensure this line of site is maintained. To enhance driver awareness of this crossing, advanced warning signs should be placed along both directions of Highway 141 prior to the curves.

5.3 Rectangular Rapid-Flashing Beacon

Rectangular Rapid-Flashing Beacons are most effective for multilane crossings with speed limits less than 40 mph. For higher speed roadways, a Pedestrian Hybrid Beacon is recommended over a Rectangular Rapid-Flashing Beacon. Since additional analysis of the Pedestrian Hybrid Beacon lead to the recommendation of its installation, the Rectangular Rapid-Flashing Beacon was not considered further.

6.0 Recommendations

The purpose of this traffic study was to identify the pedestrian and bicyclist safety issues that exist within the Highway 141 project corridor, identify and evaluate potential countermeasures to address current and long-term needs, and provide recommendations for implementation. Observations and data were collected, and FHWA guidelines were consulted in order to develop a list of potential countermeasures. These countermeasures were then considered for relevancy to the study area, and further evaluation was conducted as necessary in order to weigh the need for the countermeasure versus the impact it would have on vehicular traffic. Based on the findings from this traffic study, the following improvements are recommended:

- Sidewalks and Wheelchair Ramps
 - Provide continuous sidewalk along the west side of Highway 141 throughout the study corridor.
 - Maintain adequate widths for all sidewalks and wheelchair ramps.
 - Maintain maximum slopes for all sidewalks and wheelchair ramps.
 - Rehabilitate sidewalk and wheelchair ramp pavement where it is deteriorated.
 - Update layouts of wheelchair ramps as necessary to meet current ADA standards, and utilize tactile yellow domes for all ramps.
 - Ensure that receiving wheelchair ramps and sidewalks are provided on the opposite side of the street for all locations where a wheelchair ramp exists (at intersections and designated crosswalk locations).

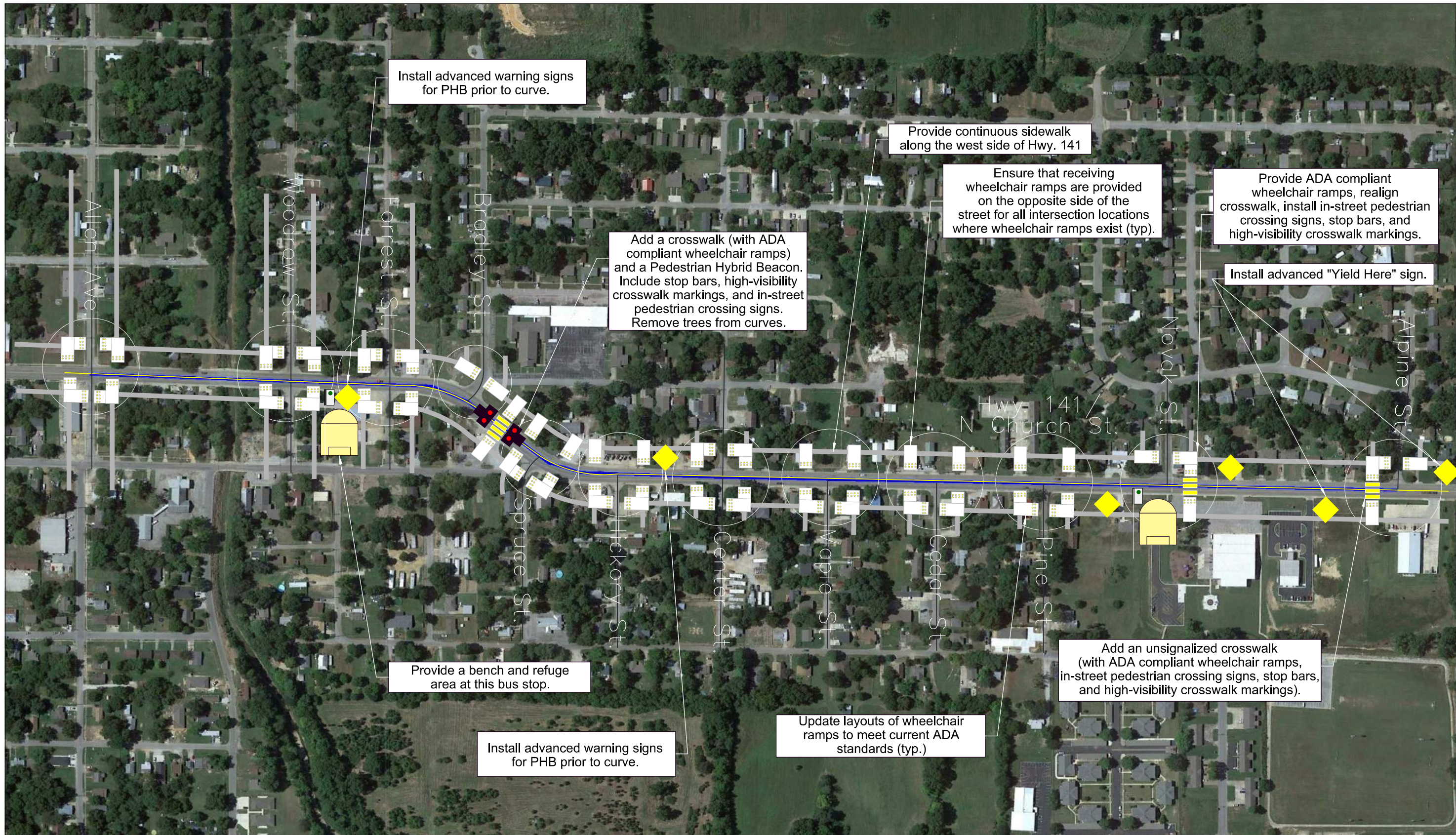
- Crossings
 - At Alpine Street, add an unsignalized crosswalk with ADA compliant wheelchair ramps on the south leg of the intersection with Highway 141. Utilize high-visibility crosswalk markings, stop bars, advance “Yield Here” signs, and in-street pedestrian crossing signs.
 - At the Novak Street crossing, provide ADA compliant wheelchair ramps, high-visibility crosswalk markings, stop bars, and in-street pedestrian crossing signs. Exchange the “pedestrian crossing” signs at the crosswalk for “yield here to pedestrian” signs. Ensure that the crosswalk is aligned so that it connects directly to the wheelchair ramps and sidewalk rather than leading into Novak Street or a driveway.
 - 100 feet north of Bradley Street, add a crosswalk across Highway 141 with ADA compliant wheelchair ramps and a Pedestrian Hybrid Beacon (PHB). Include advance warning signs of the PHB to the north and to the south of the horizontal curves within this area. Utilize high-visibility crosswalk markings, stop bars, and in-street pedestrian crossing signs. Remove trees within the curves that could limit sight distance.
 - Provide additional/improved lighting at crosswalk locations.
- Bus Stops
 - Provide a bench and refuge area at the bus stop between Woodrow Street and Forrest Street.

These countermeasures are summarized in **Figure 9** on the following page. With these improvements, pedestrian and bicyclist safety will be enhanced without having a detrimental effect on vehicular operations.

Figure 9

**Hwy. 141 STEP Innovation Study
Conceptual Layout of Recommended Countermeasures**

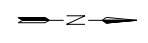
June 2019



LEGEND:

Sidewalk	Wheelchair Ramp	Bus Stop	Intersection
Hwy. 141	Crosswalk	Pedestrian Hybrid Beacon	Advanced Warning Sign
Cross Street	Bench and Shelter		

Additional Improvements:
 - Maintain adequate widths, slopes, and quality of pavement for all sidewalks and wheelchair ramps.
 - Provide additional/improved lighting at all crosswalk locations.



6.1 Value of Time Lost

The value of time lost due to the installation of the PHB was calculated based on the total delays tabulated in **Table 9**. Annualized delays were calculated by multiplying the total delays in the peak hours by the number of workdays per year. The value of lost time was determined by applying the value of travel for automobiles to the difference in annualized delays due to the PHB. **Table 10** displays various parameters and their values used for value of time lost calculations. The value of automobile travel was determined based on the hourly rate per person and the average occupancy for travel for Craighead County, Arkansas. **Table 11** displays the value of time lost due to the installation of the PHB.

Table 10: Parameters and Values

Parameter	Values
¹ Value of automobile travel (\$/hour)	\$21.36
No. of working days in a year	250

¹<https://www.census.gov/quickfacts/AR>; <http://www.bls.gov/news.release/pdf/ecec.pdf>

Table 11: Value of Time Lost

Alternatives	Annualized Delay (hr)	Value of Time Lost
Existing	600	\$10,680.00
PHB	1100	

6.2 Construction Cost

A construction cost of approximately \$772,000 was estimated for the recommended improvements listed in Section 6. This includes costs for signs, markings, benches and shelters, sidewalks, wheelchair ramps, roadway lighting at crosswalks, and a pedestrian hybrid beacon. Refer to **Appendix C** for complete construction cost.

Highway 141 STEP Study

Final Report

Job 100978

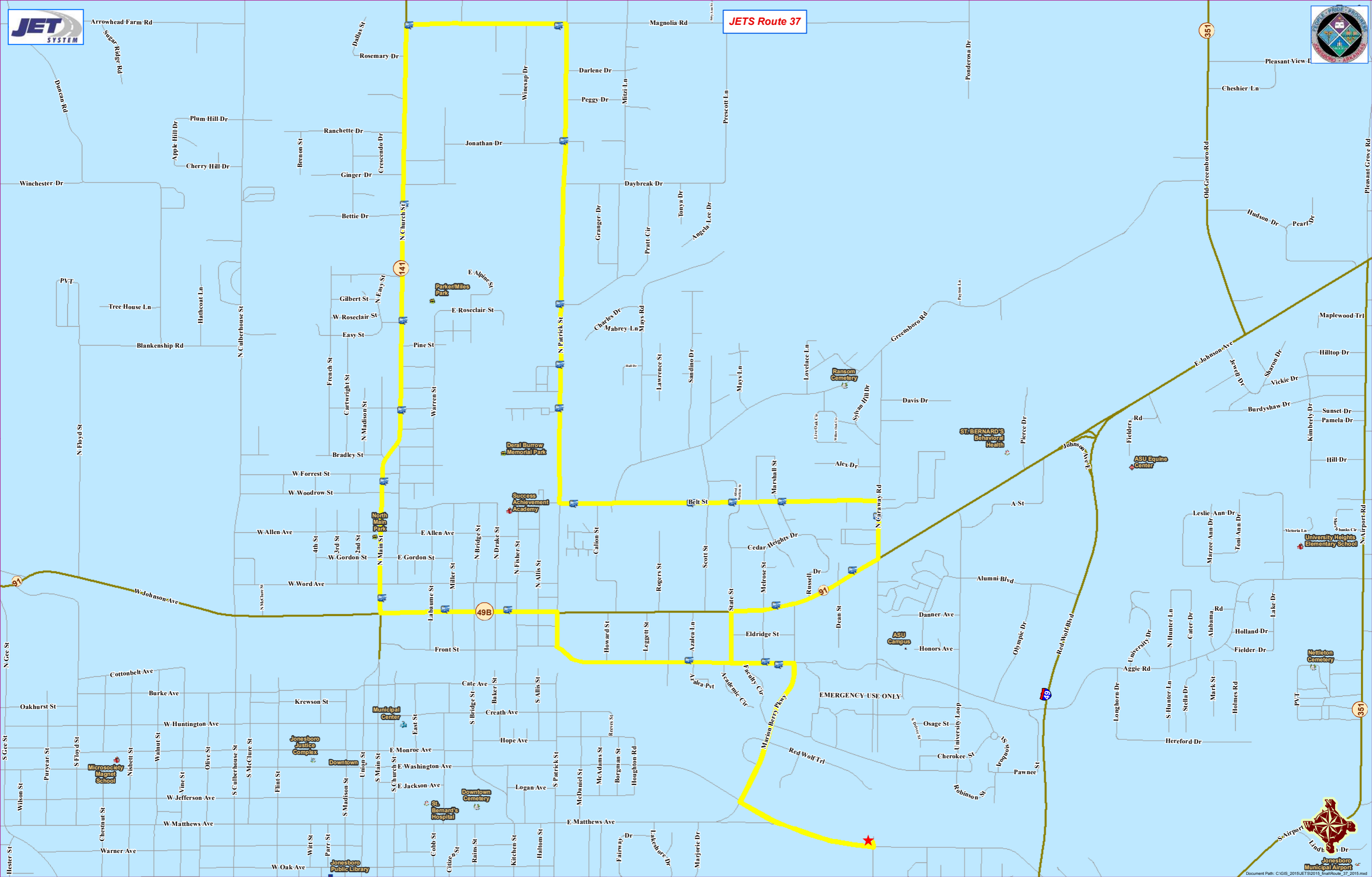


GarverUSA.com

Appendix A – Traffic Data



JETS Route 37



Route 37				
Aggie Rd. @ Coffe House		5:42 AM	6:12 AM	Continue
Aggie Rd. & Azaela Ln.		5:43 AM	6:13 AM	Continue
Johnson Av. & Fisher St.		5:45 AM	6:15 AM	Continue
Johnson Av. & Miller St.		5:46 AM	6:16 AM	7:16 PM
N. Main St. @ Bills Cost Plus	5:17 AM	5:47 AM	6:17 AM	Continue
N. Main St. & Forrest St.	5:18 AM	5:48 AM	6:18 AM	Continue
N. Church St. @ Parker Park	5:18 AM	5:48 AM	6:18 AM	Continue
N. Church St. @ Kum-&-Go	5:19 AM	5:49 AM	6:19 AM	Continue
Abilities (Will Call)	5:19 AM	5:49 AM	6:19 AM	Continue
T.G. Rd. @ M&S (Will Call)	5:20 AM	5:50 AM	6:20 AM	Continue
Magnolia Rd. & N. Church St.	5:20 AM	5:50 AM	6:20 AM	Continue
Magnolia Rd & N. Patrick	5:20 AM	5:50 AM	6:20 AM	Continue
N. Patrick St. & Meredith Dr.	5:22 AM	5:52 AM	6:22 AM	Continue
N. Patrick St. & Pratt Circle	5:23 AM	5:53 AM	6:23 AM	Continue
N. Patrick St. @ The Ridge	5:23 AM	5:53 AM	6:23 AM	Continue
N. Patrick St. @ The Villas	5:24 AM	5:54 AM	6:24 AM	Continue
Belt St. & Patrick St.	5:24 AM	5:54 AM	6:24 AM	Continue
Belt St. @ Craighead Pl. Appt.	5:26 AM	5:56 AM	6:26 AM	Continue
Belt St. & State St.	5:26 AM	5:56 AM	6:26 AM	Continue
Belt St. & Marshall St.	5:27 AM	5:57 AM	6:27 AM	Continue
N. Caraway Rd. @ Wlf Crk Appt.	5:28 AM	5:58 AM	6:28 AM	Continue
Johnson Av. @ Text Brokers	5:30 AM	6:00 AM	6:30 AM	Continue
Johnson Av. & Melrose St.	5:31 AM	6:01 AM	6:31 AM	Continue
Aggie Rd. @ A-State Armory	5:33 AM	6:03 AM	6:33 AM	Continue
RTC	5:35 AM	6:05 AM	6:35 AM	Continue

Date of Counts: Friday, April 5, 2019

AM Shift 7:00 am to 9:00 am
 Midday Shift 11:30 am to 1:30 pm
 Evening Shift 4:00 pm to 6:00 pm

Section Covered: Alpine Street & Novak Street (Novak Street)				
Observer	Shift	Pedestrians	Cyclists	Waiting at Transit Stop
MPO Staff	AM	3	2	1
	Midday	4		
	Evening	33	3	2
Total		40	5	3

Section Covered: Maple Street & Hickory Street (Center Street)				
Observer	Shift	Pedestrians	Cyclists	Waiting at Transit Stop
MPO Staff	AM	2		
	Midday	2	2	
	Evening	12	1	
Total		16	3	0

Section Covered: Bradley Street & W. Woodrow Street (Forrest Street)				
Observer	Shift	Pedestrians	Cyclists	Waiting at Transit Stop
MPO Staff	AM	6		
	Midday	12	1	
	Evening	15	1	
Total		33	2	0

Items of Note By Staff
<p>*Day of count was a payday</p> <p>* Most high activity was observed to be trips from adjacent neighborhoods to Dollar General (at Alpine St) & Jonesboro Express Mart (at Bradley St)</p> <p>*Most activity was observed to be groups of at least 3 or more walking together (kids and family)</p> <p>*Observed a near miss hit of 2 peds at Forrest Street as well as two people on motorized wheelchairs crossing the street</p>

Leg Direction	North Southbound						East Westbound						South Northbound						West Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
% Articulated Trucks and Single-Unit Trucks	5.8%	2.8%	6.9%	0%	2.9%	-	3.3%	0%	3.5%	0%	2.3%	-	1.4%	2.5%	1.3%	0%	2.4%	-	4.3%	0%	0%	0%	2.4%	-	2.6%
Buses	2	21	0	0	23	-	1	1	1	0	3	-	3	56	2	0	61	-	1	1	0	0	2	-	89
% Buses	2.9%	0.5%	0%	0%	0.5%	-	3.3%	2.4%	1.8%	0%	2.3%	-	4.3%	1.1%	1.3%	0%	1.1%	-	0.9%	3.0%	0%	0%	1.0%	-	0.9%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	2	-	0	3	0	0	3	-	5
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	9.1%	0%	0%	1.5%	-	0.1%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	26	-	-	-	-	-	5	-	-	-	-	-	8	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	92.9%	-	-	-	-	-	100%	-	-	-	-	-	66.7%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	4	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	7.1%	-	-	-	-	-	0%	-	-	-	-	-	33.3%	

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Allen and Main - TMC

Wed Apr 10, 2019

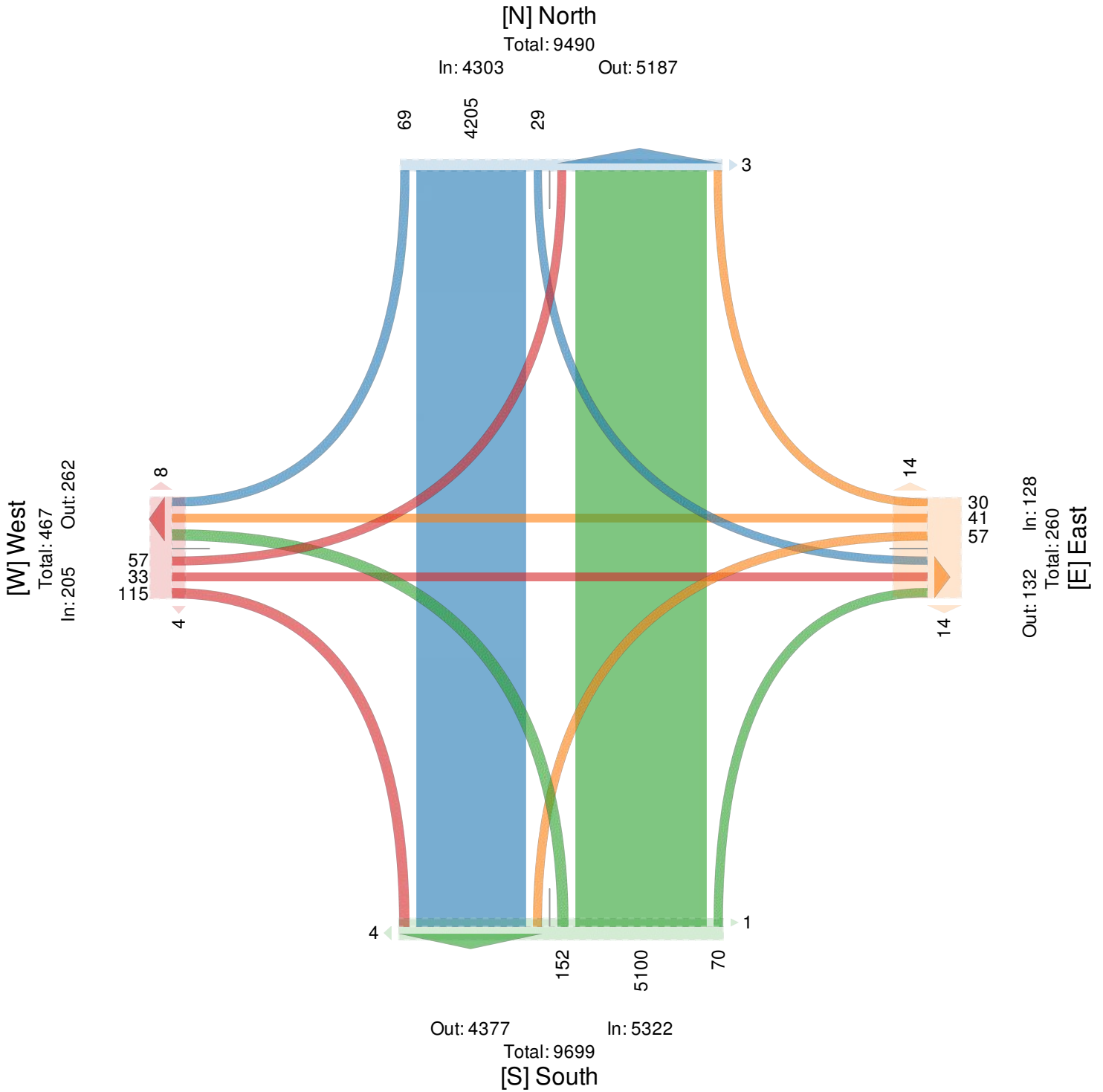
Full Length (7:45 AM-8 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641705, Location: 35.849058, -90.704653

Provided by: City of Jonesboro (AR)
 515 West Washington Avenue,
 Jonesboro, AR, 12345, US



Allen and Main - TMC

Wed Apr 10, 2019

AM Peak (10 AM - 11 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641705, Location: 35.849058, -90.704653

Provided by: City of Jonesboro (AR)

515 West Washington Avenue,

Jonesboro, AR, 12345, US

Leg Direction	North Southbound						East Westbound						South Northbound						West Eastbound												
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2019-04-10 10:00AM	1	77	0	0	78	0	0	2	0	0	2	1	0	72	1	0	73	0	3	0	2	0	5	0	3	0	2	0	5	0	158
10:15AM	5	90	2	0	97	1	0	0	2	0	2	0	3	79	2	0	84	0	2	0	0	0	2	1	2	0	0	0	2	1	185
10:30AM	1	93	1	0	95	0	0	2	1	0	3	0	2	78	2	0	82	0	3	0	2	0	5	0	5	0	2	0	5	0	185
10:45AM	2	76	0	0	78	0	0	1	1	0	2	2	0	79	5	0	84	0	1	0	1	0	2	0	2	0	1	0	2	0	166
Total	9	336	3	0	348	1	0	5	4	0	9	3	5	308	10	0	323	0	9	0	5	0	14	1	14	1	5	0	14	1	694
% Approach	2.6%	96.6%	0.9%	0%	-	-	0%	55.6%	44.4%	0%	-	-	1.5%	95.4%	3.1%	0%	-	-	64.3%	0%	35.7%	0%	-	-	-	-	-	-	-	-	-
% Total	1.3%	48.4%	0.4%	0%	50.1%	-	0%	0.7%	0.6%	0%	1.3%	-	0.7%	44.4%	1.4%	0%	46.5%	-	1.3%	0%	0.7%	0%	2.0%	-	-	-	-	-	-	-	-
PHF	0.450	0.903	0.375	-	0.897	-	-	0.625	0.500	-	0.750	-	0.417	0.975	0.500	-	0.961	-	0.750	-	0.625	-	0.700	-	-	-	-	-	-	-	0.938
Lights	8	320	2	0	330	-	0	5	3	0	8	-	5	295	9	0	309	-	6	0	5	0	11	-	6	0	5	0	11	-	658
% Lights	88.9%	95.2%	66.7%	0%	94.8%	-	0%	100%	75.0%	0%	88.9%	-	100%	95.8%	90.0%	0%	95.7%	-	66.7%	0%	100%	0%	78.6%	-	-	-	-	-	-	-	94.8%
Articulated Trucks and Single-Unit Trucks	1	15	1	0	17	-	0	0	1	0	1	-	0	10	1	0	11	-	2	0	0	0	2	-	2	-	0	0	2	-	31
% Articulated Trucks and Single-Unit Trucks	11.1%	4.5%	33.3%	0%	4.9%	-	0%	0%	25.0%	0%	11.1%	-	0%	3.2%	10.0%	0%	3.4%	-	22.2%	0%	0%	0%	14.3%	-	-	-	-	-	-	-	4.5%
Buses	0	1	0	0	1	-	0	0	0	0	0	-	0	3	0	0	3	-	1	0	0	0	1	-	1	-	0	0	1	-	5
% Buses	0%	0.3%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0%	1.0%	0%	0%	0.9%	-	11.1%	0%	0%	0%	7.1%	-	-	-	-	-	-	-	0.7%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	-	-	-	-	-	0%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	0	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Allen and Main - TMC

Wed Apr 10, 2019

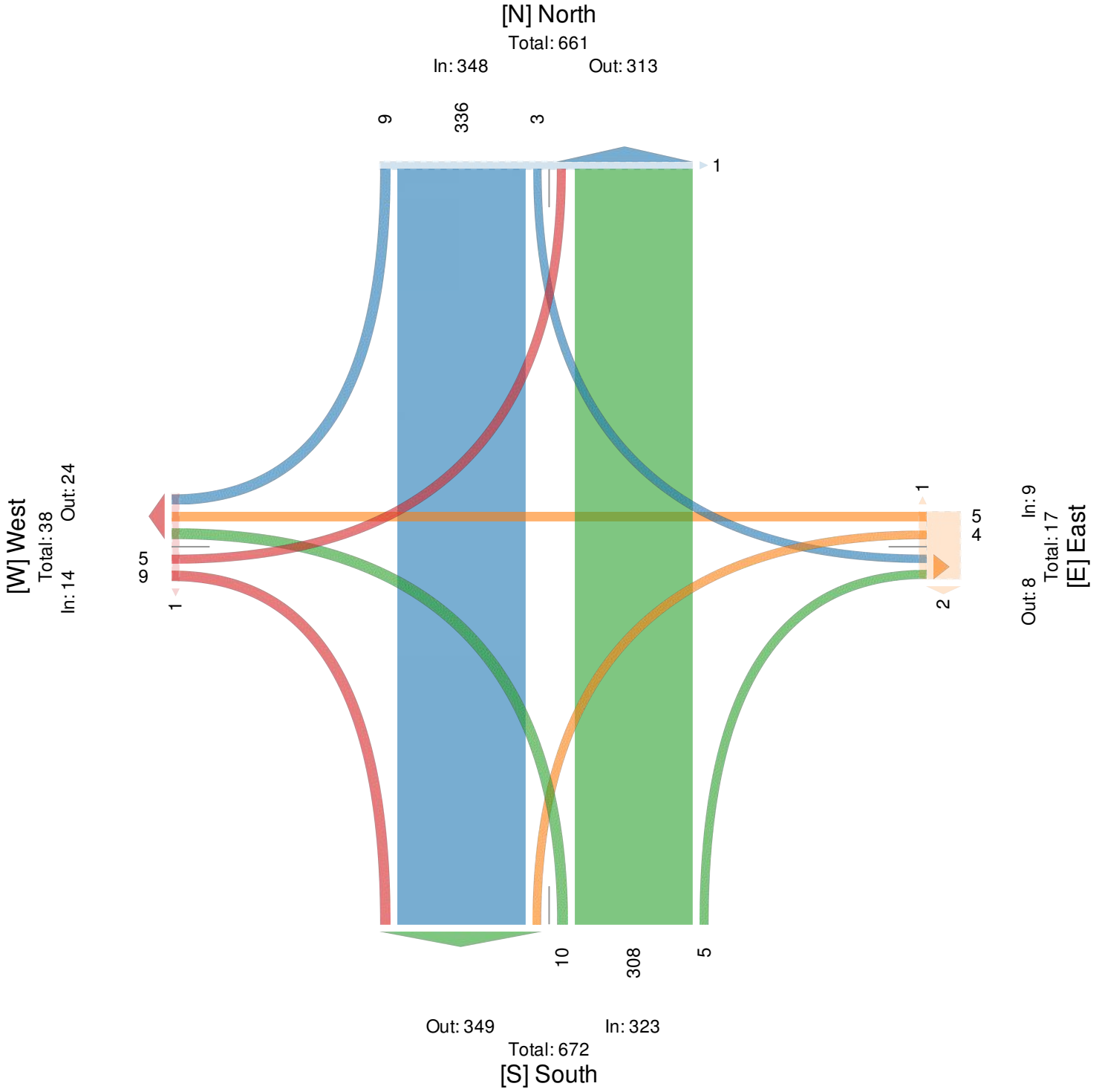
AM Peak (10 AM - 11 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641705, Location: 35.849058, -90.704653

Provided by: City of Jonesboro (AR)
 515 West Washington Avenue,
 Jonesboro, AR, 12345, US



Allen and Main - TMC

Wed Apr 10, 2019

Midday Peak (12 PM - 1 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641705, Location: 35.849058, -90.704653

Provided by: City of Jonesboro (AR)

515 West Washington Avenue,

Jonesboro, AR, 12345, US

Leg Direction Time	North Southbound					East Westbound					South Northbound					West Eastbound					Int				
	R	T	L	U	App Ped*	R	T	L	U	App Ped*	R	T	L	U	App Ped*	R	T	L	U	App Ped*					
2019-04-10 12:00PM	0	82	0	0	82	0	0	0	0	0	2	0	95	3	0	98	0	1	2	0	0	3	0	183	
12:15PM	1	100	0	0	101	0	1	0	2	0	3	0	2	109	4	0	115	0	3	1	0	0	4	0	223
12:30PM	1	84	0	0	85	0	0	0	3	0	3	1	1	73	3	0	77	0	3	0	2	0	5	0	170
12:45PM	0	89	2	0	91	0	1	1	1	0	3	1	2	89	1	0	92	0	3	0	1	0	4	1	190
Total	2	355	2	0	359	0	2	1	6	0	9	4	5	366	11	0	382	0	10	3	3	0	16	1	766
% Approach	0.6%	98.9%	0.6%	0%	-	-	22.2%	11.1%	66.7%	0%	-	-	1.3%	95.8%	2.9%	0%	-	-	62.5%	18.8%	18.8%	0%	-	-	-
% Total	0.3%	46.3%	0.3%	0%	46.9%	-	0.3%	0.1%	0.8%	0%	1.2%	-	0.7%	47.8%	1.4%	0%	49.9%	-	1.3%	0.4%	0.4%	0%	2.1%	-	-
PHF	0.500	0.888	0.250	-	0.889	-	0.500	0.250	0.500	-	0.750	-	0.625	0.839	0.688	-	0.830	-	0.833	0.500	0.375	-	0.750	-	0.858
Lights	2	343	2	0	347	-	2	1	5	0	8	-	4	347	11	0	362	-	10	2	3	0	15	-	732
% Lights	100%	96.6%	100%	0%	96.7%	-	100%	100%	83.3%	0%	88.9%	-	80.0%	94.8%	100%	0%	94.8%	-	100%	66.7%	100%	0%	93.8%	-	95.6%
Articulated Trucks and Single-Unit Trucks	0	11	0	0	11	-	0	0	0	0	0	-	1	16	0	0	17	-	0	0	0	0	0	-	28
% Articulated Trucks and Single-Unit Trucks	0%	3.1%	0%	0%	3.1%	-	0%	0%	0%	0%	0%	-	20.0%	4.4%	0%	0%	4.5%	-	0%	0%	0%	0%	0%	-	3.7%
Buses	0	1	0	0	1	-	0	0	1	0	1	-	0	3	0	0	3	-	0	0	0	0	0	-	5
% Buses	0%	0.3%	0%	0%	0.3%	-	0%	0%	16.7%	0%	11.1%	-	0%	0.8%	0%	0%	0.8%	-	0%	0%	0%	0%	0%	-	0.7%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	1	-	1
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	33.3%	0%	0%	6.3%	-	0.1%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	-	1
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	0%

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Allen and Main - TMC

Wed Apr 10, 2019

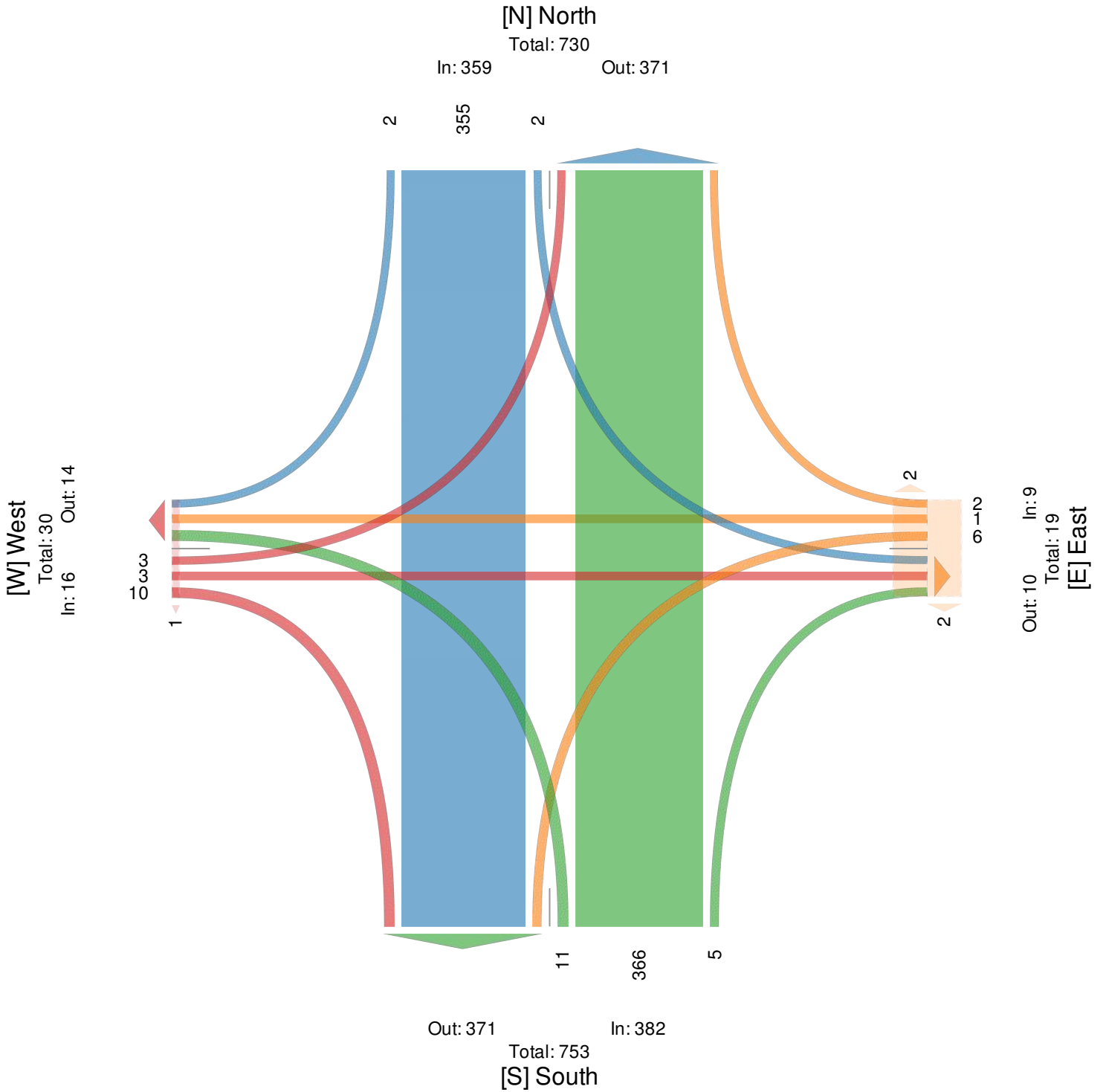
Midday Peak (12 PM - 1 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641705, Location: 35.849058, -90.704653

Provided by: City of Jonesboro (AR)
 515 West Washington Avenue,
 Jonesboro, AR, 12345, US



Allen and Main - TMC

Wed Apr 10, 2019

PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641705, Location: 35.849058, -90.704653

Provided by: City of Jonesboro (AR)
515 West Washington Avenue,
Jonesboro, AR, 12345, US

Leg Direction	North Southbound						East Westbound						South Northbound						West Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2019-04-10 3:30PM	0	118	1	0	119	0	0	4	1	0	5	0	1	150	4	0	155	0	3	1	0	0	4	1	283
3:45PM	2	105	1	0	108	0	0	2	1	0	3	0	3	164	3	0	170	0	4	0	4	0	8	0	289
4:00PM	3	96	1	0	100	0	1	0	2	0	3	0	1	238	5	0	244	0	2	2	1	0	5	0	352
4:15PM	3	102	1	0	106	0	0	1	0	0	1	0	1	211	6	0	218	0	4	0	1	0	5	1	330
Total	8	421	4	0	433	0	1	7	4	0	12	0	6	763	18	0	787	0	13	3	6	0	22	2	1254
% Approach	1.8%	97.2%	0.9%	0%	-	-	8.3%	58.3%	33.3%	0%	-	-	0.8%	97.0%	2.3%	0%	-	-	59.1%	13.6%	27.3%	0%	-	-	-
% Total	0.6%	33.6%	0.3%	0%	34.5%	-	0.1%	0.6%	0.3%	0%	1.0%	-	0.5%	60.8%	1.4%	0%	62.8%	-	1.0%	0.2%	0.5%	0%	1.8%	-	-
PHF	0.667	0.892	1.000	-	0.910	-	0.250	0.438	0.500	-	0.600	-	0.500	0.801	0.750	-	0.806	-	0.813	0.375	0.375	-	0.688	-	0.891
Lights	8	405	4	0	417	-	1	7	4	0	12	-	6	742	18	0	766	-	13	3	6	0	22	-	1217
% Lights	100%	96.2%	100%	0%	96.3%	-	100%	100%	100%	0%	100%	-	100%	97.2%	100%	0%	97.3%	-	100%	100%	100%	0%	100%	-	97.0%
Articulated Trucks and Single-Unit Trucks	0	15	0	0	15	-	0	0	0	0	0	-	0	18	0	0	18	-	0	0	0	0	0	-	33
% Articulated Trucks and Single-Unit Trucks	0%	3.6%	0%	0%	3.5%	-	0%	0%	0%	0%	0%	-	0%	2.4%	0%	0%	2.3%	-	0%	0%	0%	0%	0%	-	2.6%
Buses	0	1	0	0	1	-	0	0	0	0	0	-	0	3	0	0	3	-	0	0	0	0	0	-	4
% Buses	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.4%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	-	0.3%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-50.0%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-50.0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Allen and Main - TMC

Wed Apr 10, 2019

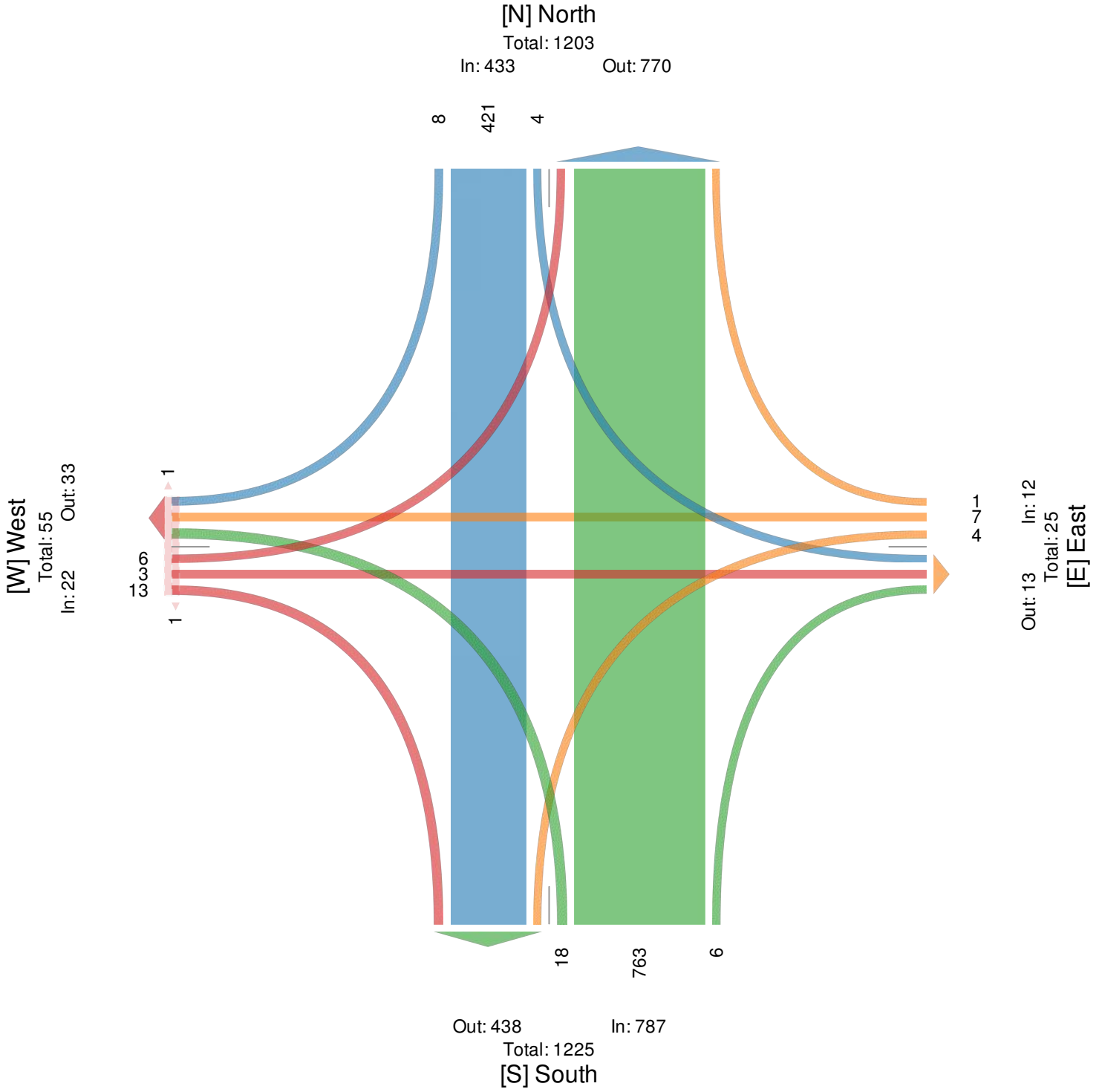
PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641705, Location: 35.849058, -90.704653

Provided by: City of Jonesboro (AR)
515 West Washington Avenue,
Jonesboro, AR, 12345, US



Main at Alpine - TMC

Thu Apr 11, 2019

Full Length (7:45 AM-8 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641738, Location: 35.860609, -90.703358

Provided by: City of Jonesboro (AR)

515 West Washington Avenue,

Jonesboro, AR, 12345, US

Leg Direction	North Southbound					South Northbound					West Eastbound					Int
	R	T	U	App	Ped*	T	L	U	App	Ped*	R	L	U	App	Ped*	
Time																
2019-04-11 7:30AM	0	74	0	74	0	46	0	0	46	0	1	0	0	1	0	121
7:45AM	1	172	0	173	0	108	1	0	109	0	2	2	0	4	0	286
Hourly Total	1	246	0	247	0	154	1	0	155	0	3	2	0	5	0	407
8:00AM	5	107	0	112	0	80	2	0	82	0	1	2	0	3	0	197
8:15AM	0	91	0	91	0	62	2	0	64	0	0	0	0	0	0	155
8:30AM	2	85	0	87	0	44	3	0	47	0	1	3	0	4	0	138
8:45AM	0	58	0	58	0	44	0	0	44	0	1	0	0	1	0	103
Hourly Total	7	341	0	348	0	230	7	0	237	0	3	5	0	8	0	593
9:00AM	1	48	0	49	1	40	0	0	40	0	2	0	0	2	0	91
9:15AM	0	53	0	53	0	42	1	0	43	0	0	0	0	0	0	96
9:30AM	1	51	0	52	3	39	1	0	40	0	2	2	0	4	0	96
9:45AM	0	61	0	61	0	36	0	0	36	0	1	0	0	1	0	98
Hourly Total	2	213	0	215	4	157	2	0	159	0	5	2	0	7	0	381
10:00AM	1	64	0	65	0	55	1	0	56	0	2	0	0	2	0	123
10:15AM	0	52	0	52	0	58	2	0	60	0	1	0	0	1	0	113
10:30AM	0	66	0	66	0	56	1	0	57	0	1	3	0	4	0	127
10:45AM	1	51	0	52	0	45	4	0	49	0	1	3	0	4	0	105
Hourly Total	2	233	0	235	0	214	8	0	222	0	5	6	0	11	0	468
11:00AM	4	59	0	63	0	55	5	0	60	0	1	0	0	1	0	124
11:15AM	3	47	0	50	0	62	2	0	64	0	0	1	0	1	0	115
11:30AM	2	56	0	58	0	52	3	0	55	0	0	2	0	2	0	115
11:45AM	6	67	0	73	0	64	3	0	67	0	2	1	0	3	0	143
Hourly Total	15	229	0	244	0	233	13	0	246	0	3	4	0	7	0	497
12:00PM	0	51	0	51	0	82	3	0	85	0	3	1	0	4	0	140
12:15PM	1	64	0	65	0	54	2	0	56	0	3	1	0	4	0	125
12:30PM	0	75	0	75	0	56	1	0	57	0	1	2	0	3	0	135
12:45PM	1	56	0	57	0	67	2	0	69	0	3	2	0	5	0	131
Hourly Total	2	246	0	248	0	259	8	0	267	0	10	6	0	16	0	531
1:00PM	0	62	0	62	0	75	3	0	78	0	8	0	0	8	0	148
1:15PM	0	58	0	58	0	63	0	0	63	0	5	1	0	6	0	127
1:30PM	1	75	0	76	0	72	6	0	78	1	3	3	0	6	0	160
1:45PM	3	49	0	52	0	71	1	0	72	0	1	3	0	4	0	128
Hourly Total	4	244	0	248	0	281	10	0	291	1	17	7	0	24	0	563
2:00PM	2	63	0	65	0	85	2	0	87	0	3	3	0	6	0	158
2:15PM	1	85	0	86	0	70	5	0	75	0	2	4	0	6	0	167
2:30PM	4	81	0	85	0	92	2	0	94	0	2	1	0	3	0	182
2:45PM	3	82	0	85	0	73	4	0	77	0	0	4	0	4	0	166
Hourly Total	10	311	0	321	0	320	13	0	333	0	7	12	0	19	0	673
3:00PM	1	65	0	66	0	109	3	1	113	0	1	2	0	3	0	182
3:15PM	2	83	0	85	0	101	3	1	105	0	2	2	0	4	0	194
3:30PM	1	94	0	95	0	127	1	0	128	0	3	2	0	5	0	228
3:45PM	3	84	0	87	0	102	3	0	105	0	5	4	0	9	0	201
Hourly Total	7	326	0	333	0	439	10	2	451	0	11	10	0	21	0	805
4:00PM	1	72	0	73	2	100	3	0	103	0	0	2	0	2	0	178
4:15PM	2	61	0	63	0	101	2	0	103	0	1	3	0	4	0	170
4:30PM	2	76	0	78	1	100	5	0	105	1	1	3	0	4	0	187
4:45PM	0	71	0	71	1	120	1	0	121	0	2	3	0	5	0	197
Hourly Total	5	280	0	285	4	421	11	0	432	1	4	11	0	15	0	732
5:00PM	2	79	0	81	0	182	0	0	182	0	2	3	0	5	0	268
5:15PM	5	68	0	73	0	142	4	0	146	0	2	3	0	5	0	224
5:30PM	0	75	0	75	1	130	3	0	133	0	5	2	0	7	0	215
5:45PM	8	62	0	70	0	112	7	0	119	0	4	4	0	8	0	197
Hourly Total	15	284	0	299	1	566	14	0	580	0	13	12	0	25	0	904

Leg Direction	North Southbound					South Northbound					West Eastbound					
Time	R	T	U	App	Ped*	T	L	U	App	Ped*	R	L	U	App	Ped*	Int
6:00PM	11	57	0	68	0	99	8	0	107	0	0	1	0	1	0	176
6:15PM	3	59	0	62	1	89	1	0	90	0	2	4	0	6	0	158
6:30PM	3	64	0	67	0	84	1	0	85	0	3	2	0	5	0	157
6:45PM	1	39	1	41	0	64	3	0	67	0	2	1	0	3	0	111
Hourly Total	18	219	1	238	1	336	13	0	349	0	7	8	0	15	0	602
7:00PM	4	56	0	60	0	77	5	0	82	0	3	1	0	4	0	146
7:15PM	5	53	0	58	1	70	3	0	73	0	1	6	0	7	0	138
7:30PM	3	26	0	29	0	56	1	0	57	0	0	1	0	1	0	87
7:45PM	2	36	0	38	0	56	4	0	60	0	1	2	0	3	0	101
Hourly Total	14	171	0	185	1	259	13	0	272	0	5	10	0	15	0	472
Total	102	3343	1	3446	11	3869	123	2	3994	2	93	95	0	188	0	7628
% Approach	3.0%	97.0%	0%	-	-	96.9%	3.1%	0.1%	-	-	49.5%	50.5%	0%	-	-	-
% Total	1.3%	43.8%	0%	45.2%	-	50.7%	1.6%	0%	52.4%	-	1.2%	1.2%	0%	2.5%	-	-
Lights	94	3154	1	3249	-	3636	118	2	3756	-	91	85	0	176	-	7181
% Lights	92.2%	94.3%	100%	94.3%	-	94.0%	95.9%	100%	94.0%	-	97.8%	89.5%	0%	93.6%	-	94.1%
Articulated Trucks and Single-Unit Trucks	3	147	0	150	-	195	1	0	196	-	0	2	0	2	-	348
% Articulated Trucks and Single-Unit Trucks	2.9%	4.4%	0%	4.4%	-	5.0%	0.8%	0%	4.9%	-	0%	2.1%	0%	1.1%	-	4.6%
Buses	4	42	0	46	-	36	3	0	39	-	1	6	0	7	-	92
% Buses	3.9%	1.3%	0%	1.3%	-	0.9%	2.4%	0%	1.0%	-	1.1%	6.3%	0%	3.7%	-	1.2%
Bicycles on Road	1	0	0	1	-	2	1	0	3	-	1	2	0	3	-	7
% Bicycles on Road	1.0%	0%	0%	0%	-	0.1%	0.8%	0%	0.1%	-	1.1%	2.1%	0%	1.6%	-	0.1%
Pedestrians	-	-	-	-	10	-	-	-	-	2	-	-	-	-	0	-
% Pedestrians	-	-	-	-	90.9%	-	-	-	-	100%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	9.1%	-	-	-	-	0%	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main at Alpine - TMC

Thu Apr 11, 2019

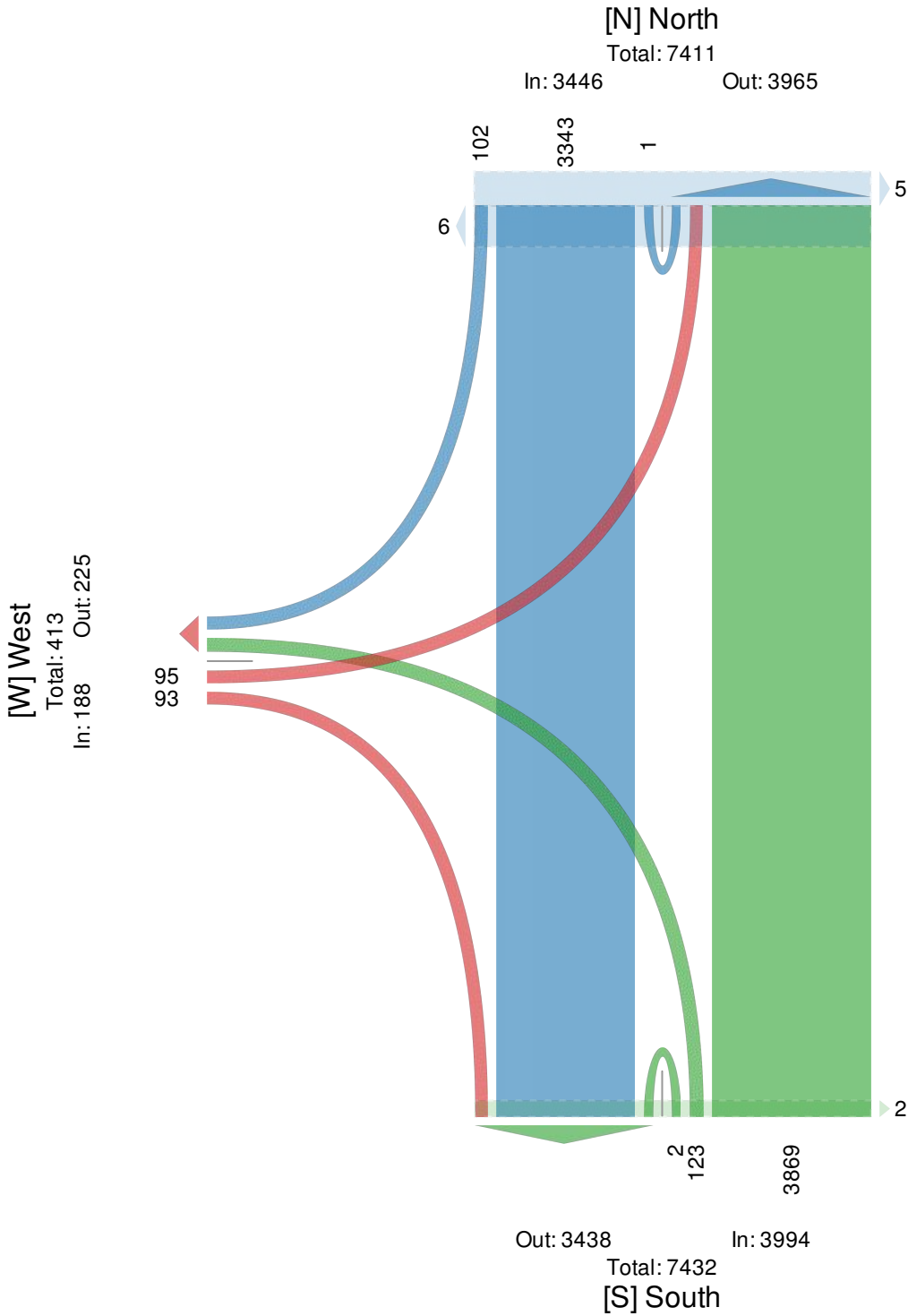
Full Length (7:45 AM-8 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641738, Location: 35.860609, -90.703358

Provided by: City of Jonesboro (AR)
515 West Washington Avenue,
Jonesboro, AR, 12345, US



Main at Alpine - TMC

Thu Apr 11, 2019

AM Peak (7:45 AM - 8:45 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641738, Location: 35.860609, -90.703358

Provided by: City of Jonesboro (AR)

515 West Washington Avenue,

Jonesboro, AR, 12345, US

Leg Direction	North Southbound					South Northbound					West Eastbound					Int
	R	T	U	App	Ped*	T	L	U	App	Ped*	R	L	U	App	Ped*	
Time																
2019-04-11 7:45AM	1	172	0	173	0	108	1	0	109	0	2	2	0	4	0	286
8:00AM	5	107	0	112	0	80	2	0	82	0	1	2	0	3	0	197
8:15AM	0	91	0	91	0	62	2	0	64	0	0	0	0	0	0	155
8:30AM	2	85	0	87	0	44	3	0	47	0	1	3	0	4	0	138
Total	8	455	0	463	0	294	8	0	302	0	4	7	0	11	0	776
% Approach	1.7%	98.3%	0%	-	-	97.4%	2.6%	0%	-	-	36.4%	63.6%	0%	-	-	-
% Total	1.0%	58.6%	0%	59.7%	-	37.9%	1.0%	0%	38.9%	-	0.5%	0.9%	0%	1.4%	-	-
PHF	0.400	0.661	-	0.669	-	0.676	0.667	-	0.688	-	0.500	0.583	-	0.688	-	0.677
Lights	7	434	0	441	-	271	7	0	278	-	4	7	0	11	-	730
% Lights	87.5%	95.4%	0%	95.2%	-	92.2%	87.5%	0%	92.1%	-	100%	100%	0%	100%	-	94.1%
Articulated Trucks and Single-Unit Trucks	0	13	0	13	-	16	1	0	17	-	0	0	0	0	-	30
% Articulated Trucks and Single-Unit Trucks	0%	2.9%	0%	2.8%	-	5.4%	12.5%	0%	5.6%	-	0%	0%	0%	0%	-	3.9%
Buses	1	8	0	9	-	5	0	0	5	-	0	0	0	0	-	14
% Buses	12.5%	1.8%	0%	1.9%	-	1.7%	0%	0%	1.7%	-	0%	0%	0%	0%	-	1.8%
Bicycles on Road	0	0	0	0	-	2	0	0	2	-	0	0	0	0	-	2
% Bicycles on Road	0%	0%	0%	0%	-	0.7%	0%	0%	0.7%	-	0%	0%	0%	0%	-	0.3%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main at Alpine - TMC

Thu Apr 11, 2019

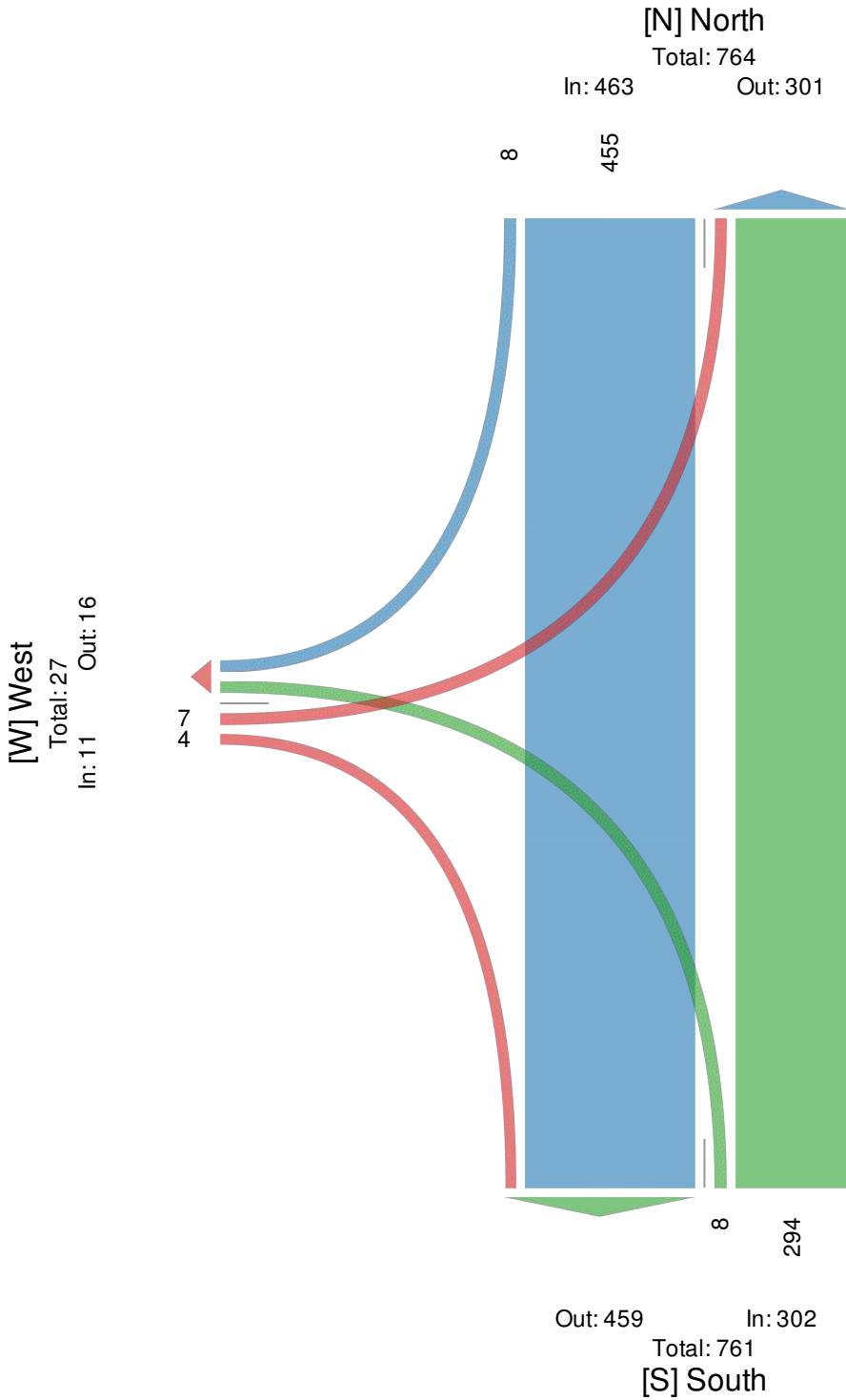
AM Peak (7:45 AM - 8:45 AM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641738, Location: 35.860609, -90.703358

Provided by: City of Jonesboro (AR)
515 West Washington Avenue,
Jonesboro, AR, 12345, US



Main at Alpine - TMC

Thu Apr 11, 2019

Midday Peak (11:45 AM - 12:45 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641738, Location: 35.860609, -90.703358

Provided by: City of Jonesboro (AR)

515 West Washington Avenue,

Jonesboro, AR, 12345, US

Leg Direction	North Southbound					South Northbound					West Eastbound					Int
	R	T	U	App	Ped*	T	L	U	App	Ped*	R	L	U	App	Ped*	
Time																
2019-04-11 11:45AM	6	67	0	73	0	64	3	0	67	0	2	1	0	3	0	143
12:00PM	0	51	0	51	0	82	3	0	85	0	3	1	0	4	0	140
12:15PM	1	64	0	65	0	54	2	0	56	0	3	1	0	4	0	125
12:30PM	0	75	0	75	0	56	1	0	57	0	1	2	0	3	0	135
Total	7	257	0	264	0	256	9	0	265	0	9	5	0	14	0	543
% Approach	2.7%	97.3%	0%	-	-	96.6%	3.4%	0%	-	-	64.3%	35.7%	0%	-	-	-
% Total	1.3%	47.3%	0%	48.6%	-	47.1%	1.7%	0%	48.8%	-	1.7%	0.9%	0%	2.6%	-	-
PHF	0.292	0.857	-	0.880	-	0.780	0.750	-	0.779	-	0.750	0.625	-	0.875	-	0.949
Lights	6	239	0	245	-	232	9	0	241	-	9	4	0	13	-	499
% Lights	85.7%	93.0%	0%	92.8%	-	90.6%	100%	0%	90.9%	-	100%	80.0%	0%	92.9%	-	91.9%
Articulated Trucks and Single-Unit Trucks	1	17	0	18	-	22	0	0	22	-	0	1	0	1	-	41
% Articulated Trucks and Single-Unit Trucks	14.3%	6.6%	0%	6.8%	-	8.6%	0%	0%	8.3%	-	0%	20.0%	0%	7.1%	-	7.6%
Buses	0	1	0	1	-	2	0	0	2	-	0	0	0	0	-	3
% Buses	0%	0.4%	0%	0.4%	-	0.8%	0%	0%	0.8%	-	0%	0%	0%	0%	-	0.6%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main at Alpine - TMC

Thu Apr 11, 2019

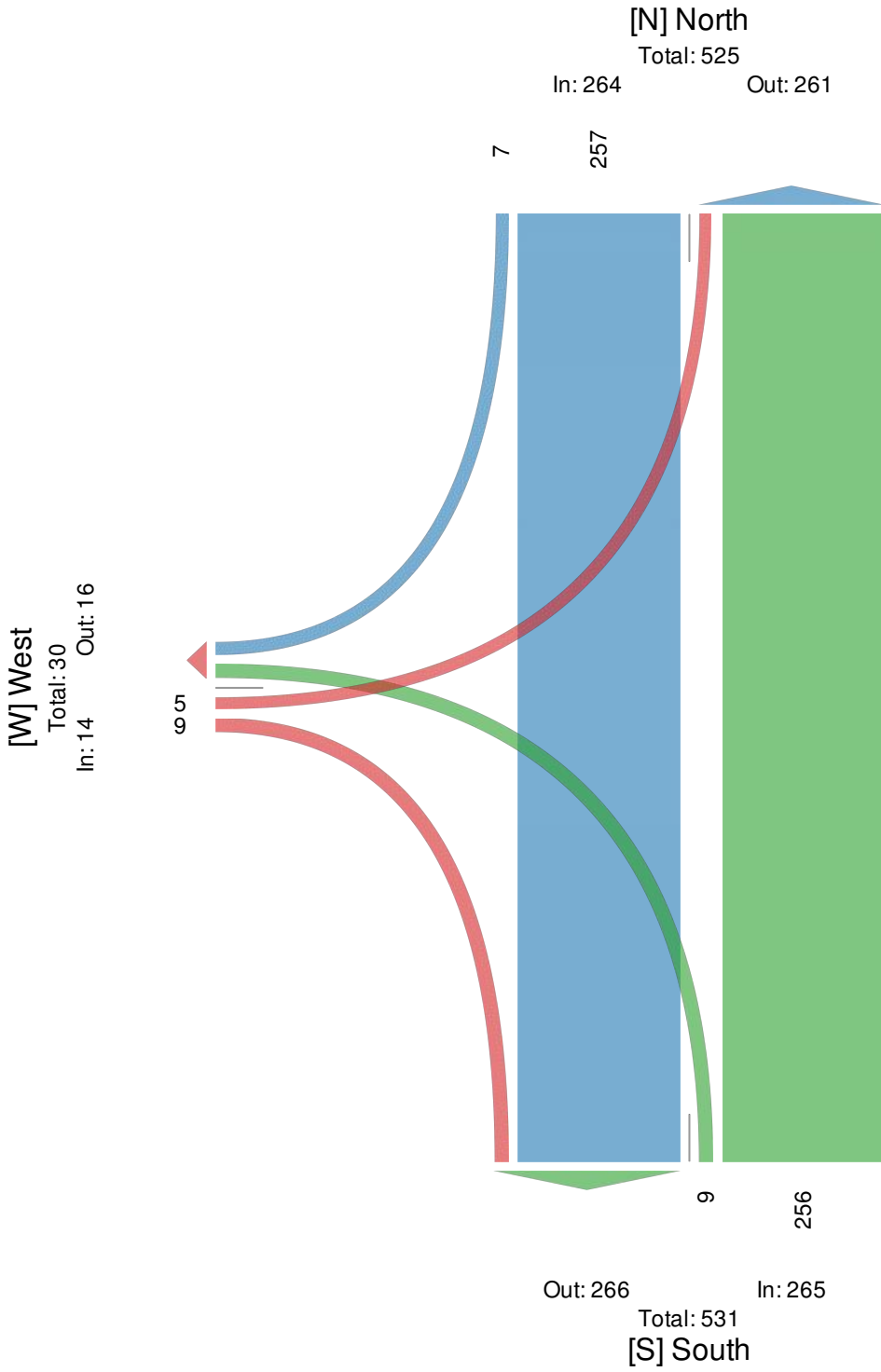
Midday Peak (11:45 AM - 12:45 PM)

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641738, Location: 35.860609, -90.703358

Provided by: City of Jonesboro (AR)
515 West Washington Avenue,
Jonesboro, AR, 12345, US



Main at Alpine - TMC

Thu Apr 11, 2019

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641738, Location: 35.860609, -90.703358

Provided by: City of Jonesboro (AR)

515 West Washington Avenue,

Jonesboro, AR, 12345, US

Leg Direction	North Southbound					South Northbound					West Eastbound					Int
	R	T	U	App	Ped*	T	L	U	App	Ped*	R	L	U	App	Ped*	
Time																
2019-04-11 4:45PM	0	71	0	71	1	120	1	0	121	0	2	3	0	5	0	197
5:00PM	2	79	0	81	0	182	0	0	182	0	2	3	0	5	0	268
5:15PM	5	68	0	73	0	142	4	0	146	0	2	3	0	5	0	224
5:30PM	0	75	0	75	1	130	3	0	133	0	5	2	0	7	0	215
Total	7	293	0	300	2	574	8	0	582	0	11	11	0	22	0	904
% Approach	2.3%	97.7%	0%	-	-	98.6%	1.4%	0%	-	-	50.0%	50.0%	0%	-	-	-
% Total	0.8%	32.4%	0%	33.2%	-	63.5%	0.9%	0%	64.4%	-	1.2%	1.2%	0%	2.4%	-	-
PHF	0.350	0.927	-	0.926	-	0.788	0.500	-	0.799	-	0.550	0.917	-	0.786	-	0.843
Lights	7	277	0	284	-	551	8	0	559	-	11	11	0	22	-	865
% Lights	100%	94.5%	0%	94.7%	-	96.0%	100%	0%	96.0%	-	100%	100%	0%	100%	-	95.7%
Articulated Trucks and Single-Unit Trucks	0	16	0	16	-	21	0	0	21	-	0	0	0	0	-	37
% Articulated Trucks and Single-Unit Trucks	0%	5.5%	0%	5.3%	-	3.7%	0%	0%	3.6%	-	0%	0%	0%	0%	-	4.1%
Buses	0	0	0	0	-	2	0	0	2	-	0	0	0	0	-	2
% Buses	0%	0%	0%	0%	-	0.3%	0%	0%	0.3%	-	0%	0%	0%	0%	-	0.2%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	2	-	-	-	-	0	-	-	-	-	0	
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Main at Alpine - TMC

Thu Apr 11, 2019

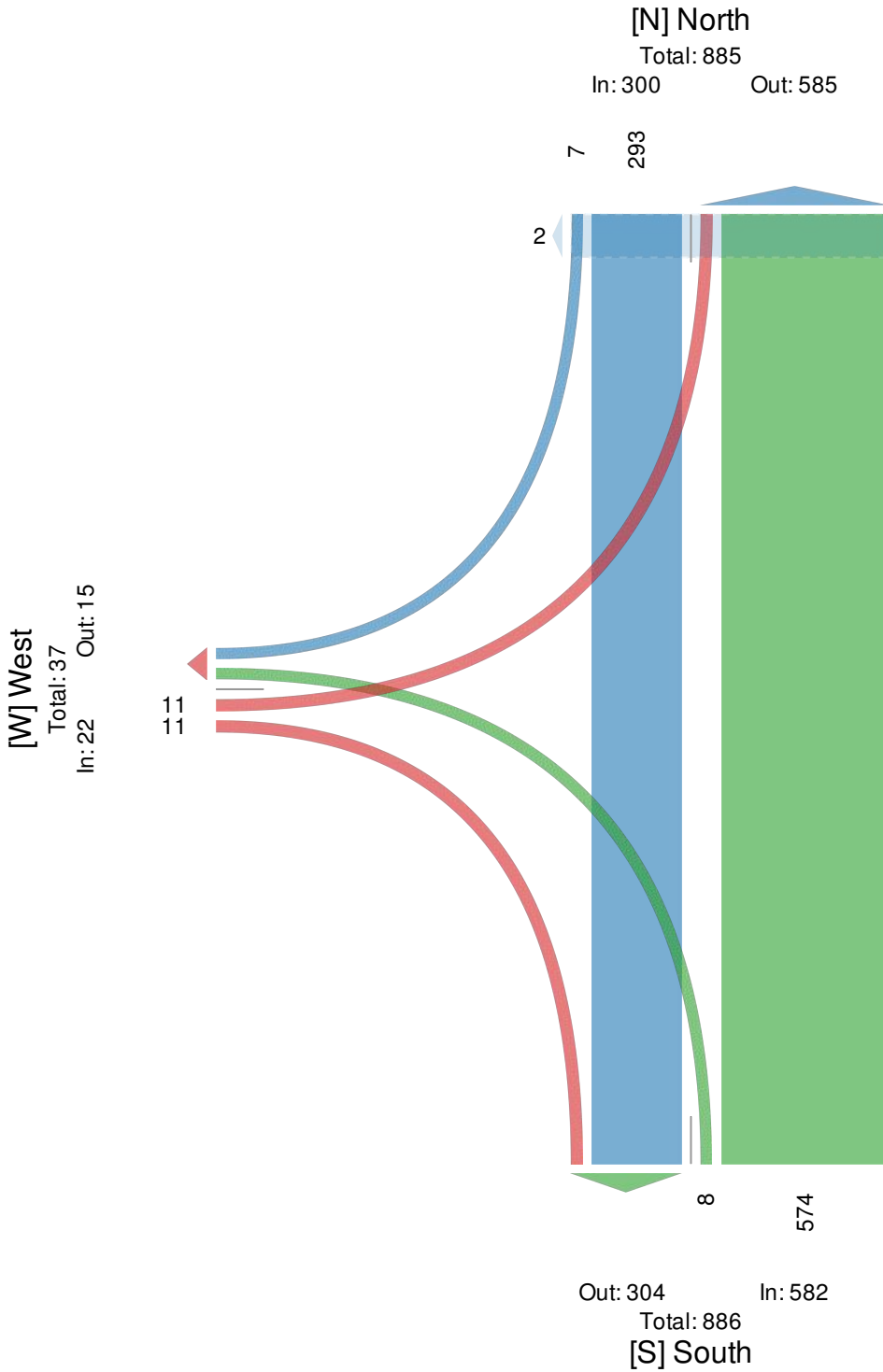
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 641738, Location: 35.860609, -90.703358

Provided by: City of Jonesboro (AR)
515 West Washington Avenue,
Jonesboro, AR, 12345, US



Appendix B – Operational Analysis Results

HCS7 Multilane Highway Report

Project Information

Analyst	APS	Date	5/1/2019
Agency	Garver	Analysis Year	2019
Jurisdiction	Jonesboro	Time Period Analyzed	PM Peak
Project Description	Highway 141- Existing Conditions	Unit	United States Customary

Direction 1 Geometric Data

Direction 1	NB		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Access Point Density, pts/mi	48.0
Lane Width, ft	12	Left-Side Lateral Clearance (LCR), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12
Free-Flow Speed (FFS), mi/h	33.4		

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume(V) veh/h	787	Heavy Vehicle Adjustment Factor (fHV)	0.971
Peak Hour Factor	0.89	Flow Rate (Vp), pc/h/ln	456
Total Trucks, %	2.95	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.24

Direction 1 Speed and Density

Lane Width Adjustment (fLW)	0.0	Average Speed (S), mi/h	33.4
Total Lateral Clearance Adj. (fLLC)	0.0	Density (D), pc/mi/ln	13.7
Median Type Adjustment (fM)	1.6	Level of Service (LOS)	B
Access Point Density Adjustment (fA)	10.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (vOL),veh/h	442	Effective Speed Factor (St)	4.17
Effective Width of Volume (Wv), ft	12	Bicycle LOS Score (BLOS)	4.99
Average Effective Width (We), ft	12	Bicycle Level of Service (LOS)	E

HCS7 Two-Lane Highway Report

Project Information

Analyst	APS	Date	5/1/2019
Agency	Garver	Analysis Year	2019
Jurisdiction	Jonesboro	Time Period Analyzed	PM Peak
Project Description	Hwy 141 with Road Diet	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	0
Speed Limit, mi/h	40	Access Point Density, pts/mi	82.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	884	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.89	Total Trucks, %	2.95
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.52

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	31.3
Speed Slope Coefficient	2.25673	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.37311	PF Power Coefficient	0.65804
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	21.7
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	29.3

Vehicle Results

Average Speed, mi/h	29.3	Percent Followers, %	71.8
Segment Travel Time, minutes	2.05	Followers Density, followers/mi/ln	21.7
Vehicle LOS	E		

Summary of All Intervals

Run Number	1	2	3	4	5	Existing	Avg
Start Time	3:25	3:25	3:25	3:25	3:25	3:25	3:25
End Time	4:30	4:30	4:30	4:30	4:30	4:30	4:30
Total Time (min)	65	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	1328	1267	1233	1232	1235	1314	1268
Vehs Exited	1317	1282	1250	1246	1233	1315	1274
Starting Vehs	16	35	46	39	28	20	29
Ending Vehs	27	20	29	25	30	19	23
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Travel Distance (mi)	1209	1155	1135	1127	1121	1209	1159
Travel Time (hr)	32.3	31.0	30.3	30.0	29.9	32.3	31.0
Total Delay (hr)	1.3	1.2	1.2	1.1	1.1	1.3	1.2
Total Stops	82	86	67	57	67	64	70
Fuel Used (gal)	32.5	31.1	30.5	29.9	30.2	32.3	31.1

Interval #0 Information Seeding

Start Time	3:25
End Time	3:30
Total Time (min)	5

No data recorded this interval.

Interval #1 Information Recording

Start Time	3:30
End Time	3:45
Total Time (min)	15

Volumes adjusted by Anti PHF.

Run Number	1	2	3	4	5	Existing	Avg
Vehs Entered	311	293	305	311	295	317	306
Vehs Exited	298	290	323	319	302	311	307
Starting Vehs	16	35	46	39	28	20	29
Ending Vehs	29	38	28	31	21	26	29
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Travel Distance (mi)	272	258	288	294	270	285	278
Travel Time (hr)	7.3	6.9	7.7	7.9	7.2	7.6	7.4
Total Delay (hr)	0.3	0.3	0.3	0.3	0.2	0.3	0.3
Total Stops	25	26	17	16	16	13	20
Fuel Used (gal)	7.3	7.0	7.8	7.8	7.2	7.6	7.5

Interval #2 Information Recording

Start Time	3:45
End Time	4:00
Total Time (min)	15

Volumes adjusted by PHF.

Run Number	1	2	3	4	5	Existing	Avg
Vehs Entered	394	351	343	336	354	360	356
Vehs Exited	391	348	333	320	342	345	346
Starting Vehs	29	38	28	31	21	26	29
Ending Vehs	32	41	38	47	33	41	37
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	1	0	0	0
Travel Distance (mi)	358	313	319	308	318	320	323
Travel Time (hr)	9.7	8.4	8.5	8.2	8.5	8.6	8.6
Total Delay (hr)	0.5	0.3	0.3	0.3	0.3	0.4	0.4
Total Stops	22	21	17	8	18	20	17
Fuel Used (gal)	9.7	8.3	8.7	8.1	8.5	8.6	8.7

Interval #3 Information Recording

Start Time	4:00
End Time	4:15
Total Time (min)	15

Volumes adjusted by Anti PHF.

Run Number	1	2	3	4	5	Existing	Avg
Vehs Entered	308	298	306	282	296	334	304
Vehs Exited	313	314	317	308	302	342	316
Starting Vehs	32	41	38	47	33	41	37
Ending Vehs	27	25	27	21	27	33	26
Denied Entry Before	0	0	0	1	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Travel Distance (mi)	293	288	284	267	279	314	287
Travel Time (hr)	7.8	7.7	7.6	7.1	7.3	8.4	7.6
Total Delay (hr)	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total Stops	19	16	17	11	13	16	15
Fuel Used (gal)	7.7	7.7	7.5	7.1	7.5	8.4	7.6

Interval #4 Information Recording

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Anti PHF.

Run Number	1	2	3	4	5	Existing	Avg
Vehs Entered	315	325	279	303	290	303	302
Vehs Exited	315	330	277	299	287	317	305
Starting Vehs	27	25	27	21	27	33	26
Ending Vehs	27	20	29	25	30	19	23
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Travel Distance (mi)	285	297	244	258	255	290	272
Travel Time (hr)	7.6	8.0	6.5	6.9	6.8	7.8	7.3
Total Delay (hr)	0.3	0.3	0.2	0.2	0.3	0.3	0.3
Total Stops	16	23	16	22	20	15	19
Fuel Used (gal)	7.7	8.2	6.5	6.8	6.9	7.7	7.3

3: Hwy. 141/Hwy 141 & Alpine St. Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.3	0.0	0.0	0.4
Total Del/Veh (s)	6.5	2.9	4.0	1.4	0.2	0.0	1.1
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	5.0	2.6	0.8	0.0	0.0	0.0	0.1
Total Stops	10	9	2	0	0	0	21
Stop/Veh	0.91	1.00	0.29	0.00	0.00	0.00	0.02
Travel Dist (mi)	1.4	1.2	3.6	289.8	36.6	1.0	333.5
Travel Time (hr)	0.1	0.1	0.1	7.6	0.9	0.0	8.8
Avg Speed (mph)	18	20	35	38	39	31	38
Fuel Used (gal)	0.0	0.0	0.1	7.5	1.0	0.0	8.7
Fuel Eff. (mpg)	36.7	36.7	39.8	38.7	36.7	55.4	38.5
HC Emissions (g)	0	0	0	123	15	0	139
CO Emissions (g)	4	2	13	2385	382	2	2788
NOx Emissions (g)	0	0	2	460	59	0	522
Vehicles Entered	10	9	7	759	307	8	1100
Vehicles Exited	10	9	7	761	306	8	1101
Hourly Exit Rate	10	9	7	761	306	8	1101
Input Volume	11	9	9	761	311	7	1109
% of Volume	89	97	76	100	98	110	99
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							804
Occupancy (veh)	0	0	0	8	1	0	9

7: Hwy. 141 & Allen Ave. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.2	0.1	0.1	0.1	0.1	0.4	0.2	0.2	0.2	0.0	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Total Del/Veh (s)	11.0	13.0	3.9	13.3	13.3	3.1	2.3	0.7	0.4	3.8	0.6	0.3
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	9.5	10.9	3.6	11.7	11.0	2.9	0.8	0.0	0.2	2.5	0.0	0.1
Total Stops	6	3	15	4	9	2	6	1	0	2	1	0
Stop/Veh	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.00	0.00	0.67	0.00	0.00
Travel Dist (mi)	0.4	0.2	1.2	0.5	0.9	0.2	3.3	144.2	1.1	0.5	77.1	1.5
Travel Time (hr)	0.0	0.0	0.1	0.0	0.1	0.0	0.1	3.8	0.0	0.0	2.0	0.0
Avg Speed (mph)	12	11	17	14	13	18	31	38	32	27	38	32
Fuel Used (gal)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	4.0	0.0	0.0	1.9	0.0
Fuel Eff. (mpg)	33.5	28.9	36.9	33.7	30.0	38.0	39.0	36.3	43.3	43.1	39.8	47.1
HC Emissions (g)	0	0	0	0	0	0	1	71	0	0	28	0
CO Emissions (g)	1	1	3	1	3	0	39	1733	7	2	614	4
NOx Emissions (g)	0	0	0	0	0	0	5	252	1	0	107	1
Vehicles Entered	6	3	15	4	8	2	17	757	6	3	420	8
Vehicles Exited	6	3	15	4	9	2	18	758	6	3	420	9
Hourly Exit Rate	6	3	15	4	9	2	18	758	6	3	420	9
Input Volume	6	3	13	4	7	1	18	763	6	4	421	8
% of Volume	96	100	118	100	124	200	101	99	96	75	100	109
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0
Density (ft/veh)												
Occupancy (veh)	0	0	0	0	0	0	0	4	0	0	2	0

7: Hwy. 141 & Allen Ave. Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.1
Total Delay (hr)	0.3
Total Del/Veh (s)	0.9
Stop Delay (hr)	0.1
Stop Del/Veh (s)	0.3
Total Stops	49
Stop/Veh	0.04
Travel Dist (mi)	231.2
Travel Time (hr)	6.3
Avg Speed (mph)	37
Fuel Used (gal)	6.2
Fuel Eff. (mpg)	37.5
HC Emissions (g)	101
CO Emissions (g)	2408
NOx Emissions (g)	366
Vehicles Entered	1249
Vehicles Exited	1253
Hourly Exit Rate	1253
Input Volume	1255
% of Volume	100
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	842
Occupancy (veh)	6

Total Network Performance

Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.1
Total Delay (hr)	1.1
Total Del/Veh (s)	3.1
Stop Delay (hr)	0.1
Stop Del/Veh (s)	0.3
Total Stops	70
Stop/Veh	0.05
Travel Dist (mi)	1159.4
Travel Time (hr)	31.0
Avg Speed (mph)	38
Fuel Used (gal)	31.1
Fuel Eff. (mpg)	37.3
HC Emissions (g)	488
CO Emissions (g)	10975
NOx Emissions (g)	1817
Vehicles Entered	1268
Vehicles Exited	1274
Hourly Exit Rate	1274
Input Volume	5487
% of Volume	23
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	717
Occupancy (veh)	31

Queuing and Blocking Report

Baseline

05/03/2019

Intersection: 3: Hwy. 141/Hwy 141 & Alpine St.

Movement	EB	NB	NB	SB	SB
Directions Served	LR	LT	T	T	TR
Maximum Queue (ft)	38	28	10	5	5
Average Queue (ft)	15	2	1	0	0
95th Queue (ft)	41	15	7	4	4
Link Distance (ft)	700	2521	2521	628	628
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: Hwy. 141 & Allen Ave.

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	TR	LT	TR
Maximum Queue (ft)	50	49	40	16	26	9
Average Queue (ft)	19	14	5	1	2	0
95th Queue (ft)	46	41	24	8	15	3
Link Distance (ft)	429	559	1001	1001	1067	1067
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	3	4	5	Road Diet	Avg
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:02	8:02	8:02	8:02	8:02	8:02	8:02
Total Time (min)	65	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4	4
Vehs Entered	1333	1310	1225	1238	1231	1306	1275
Vehs Exited	1328	1317	1227	1244	1215	1311	1274
Starting Vehs	25	38	36	32	24	30	29
Ending Vehs	30	31	34	26	40	25	30
Denied Entry Before	0	1	0	0	0	0	0
Denied Entry After	0	0	0	0	1	0	0
Travel Distance (mi)	1223	1194	1127	1146	1127	1204	1170
Travel Time (hr)	34.0	33.5	31.1	31.7	31.2	33.4	32.5
Total Delay (hr)	2.6	2.8	2.3	2.3	2.3	2.5	2.5
Total Stops	76	87	57	66	55	74	69
Fuel Used (gal)	33.5	33.0	30.8	31.2	31.0	32.7	32.0

Interval #0 Information Seeding

Start Time	6:57
End Time	7:02
Total Time (min)	5

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:02
End Time	7:17
Total Time (min)	15

Volumes adjusted by Anti PHF.

Run Number	1	2	3	4	5	Road Diet	Avg
Vehs Entered	323	301	309	303	267	312	302
Vehs Exited	317	297	315	298	268	316	302
Starting Vehs	25	38	36	32	24	30	29
Ending Vehs	31	42	30	37	23	26	32
Denied Entry Before	0	1	0	0	0	0	0
Denied Entry After	1	0	0	0	0	0	0
Travel Distance (mi)	286	272	286	276	245	289	276
Travel Time (hr)	7.9	7.5	7.7	7.6	6.7	8.0	7.6
Total Delay (hr)	0.5	0.6	0.5	0.5	0.4	0.6	0.5
Total Stops	23	21	9	17	14	16	16
Fuel Used (gal)	7.7	7.4	7.7	7.5	6.6	8.0	7.5

Interval #2 Information Recording

Start Time	7:17
End Time	7:32
Total Time (min)	15

Volumes adjusted by PHF.

Run Number	1	2	3	4	5	Road Diet	Avg
Vehs Entered	388	348	323	323	358	373	352
Vehs Exited	386	350	311	319	348	351	344
Starting Vehs	31	42	30	37	23	26	32
Ending Vehs	33	40	42	41	33	48	38
Denied Entry Before	1	0	0	0	0	0	0
Denied Entry After	0	0	0	1	0	1	0
Travel Distance (mi)	353	312	305	297	329	329	321
Travel Time (hr)	10.0	8.8	8.5	8.2	9.2	9.2	9.0
Total Delay (hr)	0.9	0.7	0.7	0.6	0.8	0.8	0.8
Total Stops	24	21	15	13	20	25	20
Fuel Used (gal)	9.8	8.7	8.5	8.1	9.1	8.9	8.9

Interval #3 Information Recording

Start Time	7:32
End Time	7:47
Total Time (min)	15

Volumes adjusted by Anti PHF.

Run Number	1	2	3	4	5	Road Diet	Avg
Vehs Entered	304	336	306	313	275	293	304
Vehs Exited	311	330	323	316	273	316	311
Starting Vehs	33	40	42	41	33	48	38
Ending Vehs	26	46	25	38	35	25	32
Denied Entry Before	0	0	0	1	0	1	0
Denied Entry After	0	0	0	0	0	0	0
Travel Distance (mi)	285	309	278	299	247	277	282
Travel Time (hr)	7.9	8.7	7.7	8.2	6.7	7.6	7.8
Total Delay (hr)	0.6	0.8	0.6	0.6	0.4	0.5	0.6
Total Stops	18	21	21	8	12	18	17
Fuel Used (gal)	7.9	8.5	7.5	8.0	6.7	7.5	7.7

Interval #4 Information Recording

Start Time	7:47
End Time	8:02
Total Time (min)	15

Volumes adjusted by Anti PHF.

Run Number	1	2	3	4	5	Road Diet	Avg
Vehs Entered	318	325	287	299	331	328	315
Vehs Exited	314	340	278	311	326	328	316
Starting Vehs	26	46	25	38	35	25	32
Ending Vehs	30	31	34	26	40	25	30
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	1	0	0
Travel Distance (mi)	299	301	258	275	306	309	291
Travel Time (hr)	8.2	8.5	7.1	7.6	8.6	8.5	8.1
Total Delay (hr)	0.6	0.7	0.5	0.5	0.7	0.6	0.6
Total Stops	11	24	12	28	9	15	16
Fuel Used (gal)	8.1	8.4	7.1	7.4	8.5	8.3	8.0

3: Hwy. 141/Hwy 141 & Alpine St. Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.3	0.4	0.1
Total Delay (hr)	0.0	0.0	0.0	0.6	0.0	0.0	0.7
Total Del/Veh (s)	7.6	3.6	5.1	3.0	0.4	0.1	2.3
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	6.1	3.3	1.1	0.0	0.0	0.0	0.1
Total Stops	10	10	2	0	0	0	22
Stop/Veh	1.00	1.00	0.25	0.00	0.00	0.00	0.02
Travel Dist (mi)	1.3	1.4	3.7	291.6	37.0	1.1	336.0
Travel Time (hr)	0.1	0.1	0.1	8.0	1.0	0.0	9.3
Avg Speed (mph)	17	19	34	36	38	30	36
Fuel Used (gal)	0.0	0.0	0.1	7.9	1.0	0.0	9.1
Fuel Eff. (mpg)	34.8	35.7	39.6	37.1	35.5	48.1	37.0
HC Emissions (g)	0	0	0	129	20	0	150
CO Emissions (g)	3	3	10	2475	490	5	2986
NOx Emissions (g)	0	0	2	463	71	0	537
Vehicles Entered	10	10	8	766	310	9	1113
Vehicles Exited	10	10	8	767	310	9	1114
Hourly Exit Rate	10	10	8	767	310	9	1114
Input Volume	11	9	9	761	311	7	1109
% of Volume	89	108	86	101	100	124	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							422
Occupancy (veh)	0	0	0	8	1	0	9

7: Hwy. 141 & Allen Ave. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.9	0.8	0.7	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.0
Total Del/Veh (s)	11.1	16.3	5.7	13.6	14.0	5.5	3.3	1.5	1.0	5.4	1.5	0.9
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	9.7	14.4	5.4	12.3	11.9	5.3	1.4	0.0	0.0	3.9	0.0	0.0
Total Stops	5	2	13	4	8	1	6	3	0	2	3	0
Stop/Veh	1.00	1.00	1.00	1.00	1.00	1.00	0.40	0.00	0.00	0.50	0.01	0.00
Travel Dist (mi)	0.4	0.2	1.1	0.4	0.8	0.1	2.8	146.4	1.1	0.6	77.8	1.4
Travel Time (hr)	0.0	0.0	0.1	0.0	0.1	0.0	0.1	4.2	0.0	0.0	2.2	0.0
Avg Speed (mph)	12	10	15	12	13	16	29	36	31	25	36	31
Fuel Used (gal)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	4.0	0.0	0.0	2.0	0.0
Fuel Eff. (mpg)	31.3	29.5	35.7	30.0	30.3	33.1	40.7	36.4	44.1	41.2	39.8	46.9
HC Emissions (g)	0	0	0	0	0	0	1	72	0	0	32	0
CO Emissions (g)	1	0	3	1	2	0	25	1590	5	2	609	5
NOx Emissions (g)	0	0	0	0	0	0	3	250	1	0	114	1
Vehicles Entered	5	2	13	4	8	1	15	768	6	4	422	8
Vehicles Exited	5	2	13	4	8	1	15	769	6	4	422	8
Hourly Exit Rate	5	2	13	4	8	1	15	769	6	4	422	8
Input Volume	6	3	13	4	7	1	18	763	6	4	421	8
% of Volume	80	67	102	100	110	100	85	101	96	100	100	97
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0
Density (ft/veh)												
Occupancy (veh)	0	0	0	0	0	0	0	4	0	0	2	0

7: Hwy. 141 & Allen Ave. Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.6
Total Delay (hr)	0.6
Total Del/Veh (s)	1.8
Stop Delay (hr)	0.1
Stop Del/Veh (s)	0.3
Total Stops	47
Stop/Veh	0.04
Travel Dist (mi)	233.1
Travel Time (hr)	6.8
Avg Speed (mph)	35
Fuel Used (gal)	6.2
Fuel Eff. (mpg)	37.6
HC Emissions (g)	105
CO Emissions (g)	2243
NOx Emissions (g)	370
Vehicles Entered	1256
Vehicles Exited	1257
Hourly Exit Rate	1257
Input Volume	1255
% of Volume	100
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	477
Occupancy (veh)	7

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.6
Total Delay (hr)	2.2
Total Del/Veh (s)	6.2
Stop Delay (hr)	0.1
Stop Del/Veh (s)	0.4
Total Stops	69
Stop/Veh	0.05
Travel Dist (mi)	1170.2
Travel Time (hr)	32.5
Avg Speed (mph)	36
Fuel Used (gal)	32.0
Fuel Eff. (mpg)	36.5
HC Emissions (g)	537
CO Emissions (g)	11397
NOx Emissions (g)	1919
Vehicles Entered	1275
Vehicles Exited	1274
Hourly Exit Rate	1274
Input Volume	5487
% of Volume	23
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	371
Occupancy (veh)	32

Queuing and Blocking Report

Baseline

05/03/2019

Intersection: 3: Hwy. 141/Hwy 141 & Alpine St.

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	39	40
Average Queue (ft)	16	3
95th Queue (ft)	43	20
Link Distance (ft)	712	2524
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Hwy. 141 & Allen Ave.

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	48	39	55	72
Average Queue (ft)	17	11	8	6
95th Queue (ft)	44	35	36	35
Link Distance (ft)	441	571	1001	1072
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	3	4	Ped Hybrid Beacon	Avg
Start Time	3:25	3:25	3:25	3:25	3:25	3:25
End Time	4:30	4:30	4:30	4:30	4:30	4:30
Total Time (min)	65	65	65	65	65	65
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Vehs Entered	1265	1287	1303	1289	1263	1285
Vehs Exited	1276	1300	1297	1295	1263	1291
Starting Vehs	37	36	32	38	32	30
Ending Vehs	26	23	38	32	32	27
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0
Travel Distance (mi)	1176	1209	1200	1193	1173	1199
Travel Time (hr)	32.2	33.1	33.3	32.8	31.9	32.9
Total Delay (hr)	2.1	2.1	2.5	2.2	1.9	2.2
Total Stops	171	167	216	203	134	181
Fuel Used (gal)	32.8	33.7	33.4	33.3	32.3	33.3

Interval #0 Information Seeding

Start Time	3:25
End Time	3:30
Total Time (min)	5

No data recorded this interval.

Interval #1 Information Recording

Start Time	3:30
End Time	3:45
Total Time (min)	15

Volumes adjusted by Anti PHF.

Run Number	1	2	3	4	Ped Hybrid Beacon	Avg
Vehs Entered	296	298	304	327	297	306
Vehs Exited	301	304	309	332	291	307
Starting Vehs	37	36	32	38	32	30
Ending Vehs	32	30	27	33	38	30
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0
Travel Distance (mi)	275	288	281	306	278	290
Travel Time (hr)	7.7	7.7	7.9	8.4	7.6	8.0
Total Delay (hr)	0.6	0.3	0.6	0.5	0.5	0.5
Total Stops	64	17	59	41	40	47
Fuel Used (gal)	7.7	7.9	8.0	8.5	7.7	8.1

Interval #2 Information Recording

Start Time	3:45
End Time	4:00
Total Time (min)	15

Volumes adjusted by PHF.

Run Number	1	2	3	4	Ped Hybrid Beacon	Avg
Vehs Entered	371	348	364	329	352	354
Vehs Exited	369	347	362	331	351	355
Starting Vehs	32	30	27	33	38	30
Ending Vehs	34	31	29	31	39	31
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0
Travel Distance (mi)	344	324	344	303	322	330
Travel Time (hr)	9.2	8.8	9.6	8.6	8.7	9.1
Total Delay (hr)	0.4	0.5	0.7	0.8	0.4	0.6
Total Stops	21	32	55	80	31	44
Fuel Used (gal)	9.4	9.1	9.5	8.8	8.8	9.2

Interval #3 Information Recording

Start Time	4:00
End Time	4:15
Total Time (min)	15

Volumes adjusted by Anti PHF.

Run Number	1	2	3	4	Ped Hybrid Beacon	Avg
Vehs Entered	305	355	311	319	312	318
Vehs Exited	301	349	297	317	321	316
Starting Vehs	34	31	29	31	39	31
Ending Vehs	38	37	43	33	30	33
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0
Travel Distance (mi)	275	334	276	295	292	293
Travel Time (hr)	7.5	9.2	7.7	7.9	8.0	8.0
Total Delay (hr)	0.4	0.6	0.6	0.3	0.6	0.5
Total Stops	26	54	58	29	45	38
Fuel Used (gal)	7.6	9.2	7.7	7.9	8.1	8.0

Interval #4 Information Recording

Start Time	4:15
End Time	4:30
Total Time (min)	15

Volumes adjusted by Anti PHF.

Run Number	1	2	3	4	Ped Hybrid Beacon	Avg
Vehs Entered	293	286	324	314	302	304
Vehs Exited	305	300	329	315	300	312
Starting Vehs	38	37	43	33	30	33
Ending Vehs	26	23	38	32	32	27
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0
Travel Distance (mi)	282	263	299	289	280	286
Travel Time (hr)	7.9	7.4	8.2	7.9	7.5	7.9
Total Delay (hr)	0.6	0.6	0.5	0.6	0.3	0.5
Total Stops	60	64	44	53	18	46
Fuel Used (gal)	8.2	7.5	8.1	8.0	7.7	8.0

3: Hwy. 141/Hwy 141 & Alpine St. Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.3	0.0	0.0	0.4
Total Del/Veh (s)	7.0	3.2	3.9	1.5	0.2	0.1	1.2
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	5.4	2.9	1.3	0.0	0.0	0.1	0.1
Total Stops	11	9	3	0	0	0	23
Stop/Veh	1.00	1.00	0.38	0.00	0.00	0.00	0.02
Travel Dist (mi)	1.5	1.2	4.0	295.4	37.9	0.9	340.8
Travel Time (hr)	0.1	0.1	0.1	7.8	1.0	0.0	9.0
Avg Speed (mph)	18	20	34	38	39	31	38
Fuel Used (gal)	0.0	0.0	0.1	7.7	1.0	0.0	8.9
Fuel Eff. (mpg)	35.7	36.2	39.9	38.3	36.6	54.0	38.1
HC Emissions (g)	0	0	0	149	19	0	169
CO Emissions (g)	3	3	12	2838	452	2	3311
NOx Emissions (g)	0	0	3	534	70	0	608
Vehicles Entered	11	9	8	770	317	7	1122
Vehicles Exited	11	9	8	772	318	7	1125
Hourly Exit Rate	11	9	8	772	318	7	1125
Input Volume	11	9	9	760	311	7	1108
% of Volume	98	97	86	102	102	97	102
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							787
Occupancy (veh)	0	0	0	8	1	0	9

7: Hwy. 141 & Allen Ave. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.1	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0
Total Del/Veh (s)	14.8	15.2	4.3	9.8	15.2	2.8	3.3	0.7	0.1	5.3	1.3	0.6
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	13.4	12.9	4.0	8.6	12.9	2.7	1.4	0.0	0.0	2.8	0.0	0.0
Total Stops	4	3	13	3	7	1	6	4	0	2	1	0
Stop/Veh	1.00	1.00	1.00	1.00	1.00	1.00	0.35	0.01	0.00	0.50	0.00	0.00
Travel Dist (mi)	0.3	0.3	1.1	0.3	0.8	0.1	3.2	147.0	1.6	0.8	97.3	2.6
Travel Time (hr)	0.0	0.0	0.1	0.0	0.1	0.0	0.1	3.9	0.0	0.0	2.6	0.1
Avg Speed (mph)	11	11	16	14	13	19	29	38	33	29	37	32
Fuel Used (gal)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	4.0	0.0	0.0	2.7	0.1
Fuel Eff. (mpg)	29.8	30.6	34.6	32.2	29.6	34.9	41.4	36.4	47.1	35.8	36.4	40.2
HC Emissions (g)	0	0	0	0	0	0	1	79	0	0	49	0
CO Emissions (g)	1	1	4	1	2	0	28	1885	7	7	1127	13
NOx Emissions (g)	0	0	0	0	0	0	4	274	1	1	176	2
Vehicles Entered	4	3	13	3	7	1	17	771	8	4	422	11
Vehicles Exited	4	3	13	3	7	1	17	773	8	4	423	12
Hourly Exit Rate	4	3	13	3	7	1	17	773	8	4	423	12
Input Volume	6	3	13	4	7	1	18	763	6	4	422	8
% of Volume	64	100	102	75	97	100	96	101	128	100	100	145
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0
Density (ft/veh)												
Occupancy (veh)	0	0	0	0	0	0	0	4	0	0	3	0

7: Hwy. 141 & Allen Ave. Performance by movement

Movement	All
Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.1
Total Delay (hr)	0.4
Total Del/Veh (s)	1.2
Stop Delay (hr)	0.1
Stop Del/Veh (s)	0.3
Total Stops	44
Stop/Veh	0.03
Travel Dist (mi)	255.3
Travel Time (hr)	7.0
Avg Speed (mph)	37
Fuel Used (gal)	7.0
Fuel Eff. (mpg)	36.5
HC Emissions (g)	130
CO Emissions (g)	3076
NOx Emissions (g)	458
Vehicles Entered	1264
Vehicles Exited	1268
Hourly Exit Rate	1268
Input Volume	1256
% of Volume	101
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	781
Occupancy (veh)	7

10: Hwy. 141 Performance by movement

Movement	NBT	SBT	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	0.7	0.3	1.0
Total Del/Veh (s)	3.0	2.4	2.8
Stop Delay (hr)	0.3	0.2	0.5
Stop Del/Veh (s)	1.3	1.4	1.3
Total Stops	71	43	114
Stop/Veh	0.09	0.10	0.09
Travel Dist (mi)	182.7	36.2	218.9
Travel Time (hr)	5.3	1.2	6.5
Avg Speed (mph)	35	30	34
Fuel Used (gal)	4.9	1.2	6.1
Fuel Eff. (mpg)	37.6	30.2	36.2
HC Emissions (g)	92	22	113
CO Emissions (g)	1885	732	2618
NOx Emissions (g)	323	71	394
Vehicles Entered	780	437	1217
Vehicles Exited	780	436	1216
Hourly Exit Rate	780	436	1216
Input Volume	772	433	1204
% of Volume	101	101	101
Denied Entry Before	0	0	0
Denied Entry After	0	0	0
Density (ft/veh)			539
Occupancy (veh)	5	1	6

Total Network Performance

Denied Delay (hr)	0.0
Denied Del/Veh (s)	0.1
Total Delay (hr)	2.1
Total Del/Veh (s)	5.8
Stop Delay (hr)	0.6
Stop Del/Veh (s)	1.6
Total Stops	181
Stop/Veh	0.14
Travel Dist (mi)	1198.7
Travel Time (hr)	32.9
Avg Speed (mph)	36
Fuel Used (gal)	33.3
Fuel Eff. (mpg)	36.0
HC Emissions (g)	614
CO Emissions (g)	14136
NOx Emissions (g)	2176
Vehicles Entered	1285
Vehicles Exited	1291
Hourly Exit Rate	1291
Input Volume	5600
% of Volume	23
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	673
Occupancy (veh)	33

Queuing and Blocking Report
Baseline

05/07/2019

Intersection: 3: Hwy. 141/Hwy 141 & Alpine St.

Movement	EB	NB	SB	SB
Directions Served	LR	LT	T	TR
Maximum Queue (ft)	38	29	10	4
Average Queue (ft)	16	3	0	0
95th Queue (ft)	42	16	4	0
Link Distance (ft)	700	2513	628	628
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Hwy. 141 & Allen Ave.

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	LT	TR	LT	TR
Maximum Queue (ft)	39	44	62	13	28	4
Average Queue (ft)	16	9	8	1	3	0
95th Queue (ft)	42	33	37	9	16	3
Link Distance (ft)	429	557	1001	1001	1180	1180
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 10: Hwy. 141

Movement	NB	NB	SB	SB
Directions Served	T	T	T	T
Maximum Queue (ft)	130	132	93	88
Average Queue (ft)	29	28	20	17
95th Queue (ft)	96	97	68	64
Link Distance (ft)	1180	1180	454	454
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Appendix C – Construction Cost Estimate

ITEM	ITEM DESCRIPTION	UNIT	¹ UNIT PRICE	QUANTITY	TOTAL	UNIT PRICE SOURCE
ROADWAY						
1	REMOVAL AND DISPOSAL OF CURB	lf	\$8	1,440	\$11,520	ARDOT weighted averages
2	REMOVAL AND DISPOSAL OF WALKS	yd ²	\$92	879	\$80,868	ARDOT weighted averages
3	REMOVAL AND DISPOSAL OF MAILBOXES	each	\$135	23	\$3,105	ARDOT weighted averages
4	SIGNS	ft ²	\$20	54	\$1,080	ARDOT weighted averages
5	BENCH AND SHELTER	each	\$10,000	2	\$20,000	www.pedbikesafe.org
6	PEDESTRIAN HYBRID BEACON	each	\$60,000	2	\$120,000	www.pedbikesafe.org
7	CONCRETE WALKS	yd ²	\$52	1816	\$94,432	ARDOT weighted averages
8	CURB AND GUTTER	lf	\$18	1,440	\$25,920	ARDOT weighted averages
9	MAILBOXES	each	\$50	23	\$1,150	ARDOT weighted averages
10	MAILBOX SUPPOERTS (SINGLE)	each	\$110	23	\$2,530	ARDOT weighted averages
11	THERMOPLASTIC PAVEMENT MARKING WHITE (12")	lf	\$15	534	\$8,010	ARDOT weighted averages
12	WHEELCHAIR RAMPS	yd ²	\$150	1172	\$175,800	ARDOT weighted averages
13	ROADWAY LIGHTING	each	\$5,000	6	\$30,000	ARDOT weighted averages
14	EROSION CONTROL	L.S.	1	% of Items 1-13	\$5,444	-
15	ROADWAY CONSTRUCTION CONTROL	L.S.	1	% of Items 1-13	\$5,444	-
16	MAINTENANCE OF TRAFFIC	L.S.	5	% of Items 1-13	\$27,221	-
17	MOBILIZATION	L.S.	5	% of Items 1-13	\$30,626	-
18	CONTINGENCY	L.S.	20	% of Items 1-13	\$128,630	-
TOTAL ROADWAY COSTS (2019 DOLLARS) =					\$771,780	-

Units Index:

lf = linear feet

yd²= square yard

ft²= square feet

L.S. = Lump Sum