BICYCLE, PEDESTRIAN, AND INTERSECTION IMPROVEMENTS ALONG SR-70/WEST COLLEGE STREET

FROM McDOW ROAD TO WALTON STREET

COLUMBIANA, ALABAMA

Advance Planning, Programming & Logical Engineering (APPLE) Program

September 2021 – Final Report

Prepared for:

RPC Regional Planning Commission of Greater Birmingham

SHELBY COUNTY ALABAMA

Prepared by:

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SKIPPER CONSULTING INC

INTRODUCTION

The study was initiated by Shelby County through the Advanced Planning, Programming, and Logical Engineering (APPLE) program developed by the Regional Planning Commission of Greater Birmingham (RPCGB). The scope of the project included considering pedestrian and intersection improvements from the Columbiana Sports Complex on McDow Road to the existing sidewalk on West College Street near Walton Drive, a distance of approximately 6,700 linear feet. The project will also analyze traffic operations within the study area. Figure 1 shows the limits of the project study area.

The project was broken down into the following tasks to address the scope of work.

Task 1 – Existing Conditions

A. Perform appropriate field surveys as specified by the County.
B. Collect and analyze information from appropriate agencies.
C. Conduct a preliminary field review to assess the constraints and opportunities.
D. Identify existing roadway infrastructure.
E. Conduct additional field reviews and observations as necessary to document existing conditions.
F. Collect traffic volume data in the Fall and as determined by County officials.

Task 2 – Concept Plan Development and Evaluation

A. Develop conceptual plan alternatives including bicycle and pedestrian facilities as well as turn lanes and shoulder widenings.
B. Assess potential ROW and environmental issue for each alternative.
C. Identify appropriate utility locations and potential complications.
D. Analyze traffic operations.
E. Prepare for and attend meetings to present alternatives.
F. Revise the alternatives to incorporate comments that may be received.
G. Prepare planning levels estimates of probable cost for each alternative.
H. Prepare a draft report documenting the study and alternatives.
I. Submit the draft report for review.
J. Revise the report based on any comments that may be received.
K. Submit the final report.

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EXISTING ROADWAY CONDITIONS

Alabama Highway 70 (SR-70) (West College Street), from McDow Road, from McDow Road to Alabama Highway 25 (SR-25) is a two-lane undivided rural minor arterial roadway with graded shoulders. The posted speed limit is 45 miles per hour. From SR-25, West College Street widens to a three-lane roadway with a center two-way left turn lane with curb and gutter. The roadway transitions back to a two-lane roadway just west of Walton Drive. The posted speed limit is 35 mph. McDow Road is an undivided two-lane roadway that provides access to the Columbiana Sports Complex and other industrial properties.

Sidewalks are present on both sides West College Street from the end of the project limits and continue east into the downtown area. Within the project limits, there is approximately 150' of sidewalk on the north side of West College Street in front of a commercial development.

The corridor is a mixture of light industrial, commercial and residential development. There is an at-grade railroad crossing on SR-70 approximately 0.5 miles west of the intersection with SR-25.

A literature search was performed to determine if the corridor was identified in any bicycle or pedestrian plans, and none were found.

Existing Traffic

Twenty-four-hour bi-directional traffic counts with vehicle classification and speed were conducted along SR-70, east of Phillips Circle and along West College Street, east of SR-25 beginning on December 1, 2020. Table 1 shows the daily traffic counts, 85th percentile speed and the percent of trucks.

Roadway Segment	Daily Traffic (vehicles)	85th Percentile Speed	Truck Percentage	Heavy Truck Percentage
Alabama Highway 70 east of Phillips Circle	11,092	~ 43 mph	12%	2.7%
West College Street east of Alabama Highway 25	9,487	~ 34 mph	9%	1.9%

Table 1 – Daily Traffic Counts and Speed

In addition to the hourly counts, morning and afternoon peak hour turning movement counts were conducted at the following locations:

- SR-70 at McDow Road
- SR-70 at Industrial Parkway; and
- SR-70/West College Street at SR-35

Peak hour turning volumes are included in Skipper Consulting's traffic study report found in **Appendix A** as well as detailed information regarding intersection and roadway segment capacity analysis and turn lane warrant evaluations.

Capacity analyses were performed at the intersection noted above and were found to presently operate with acceptable levels of service during the morning and afternoon peak. Roadway segments were also found to operate with acceptable levels of service.

Turn lane warrant evaluations determined that Left Turn Lanes are RECOMMENDED on SR-70 at McDow Road and on SR-70 at Industrial Parkway. Right Turn Lanes are NOT WARRANTED at either location.

CONCEPT PLAN DEVELOPMENT AND EVALUATION

Based on information collected from preliminary field reviews, meetings with project stakeholders and recommendations from the traffic study, conceptual layouts were developed, and preliminary construction cost estimates were prepared. A review of the initial concepts was held, and it was determined to perform survey for the portion of the study area from SR-25 east to Walton Drive. For the portion of the study area from SR-25 west to McDow Road, select locations were chosen to survey a cross section of the roadway from right-of-way to right-of-way that might appear to be constraints.

Once the survey was performed, a preliminary design of the section of SR-70 from SR-25 to Walton Street was performed to establish approximate construction limits to better determine potential right-of-way and utility impacts. The conceptual layouts were revised and preliminary construction cost estimates were updated to reflect the changes.

The conceptual improvements added a sidewalk along McDow Road from the intersection with SR-70 to the entrance to the Columbiana Sports Complex. Along SR-70 from the beginning of the project study area to SR-25, the roadway was widened to provide a left turn lane on SR-70 at McDow Road and continue a three-lane section with curb and gutter and sidewalks on both sides of the roadway. From SR-25 west to Walton Drive crosswalks were added to the intersection with SR-25 and a sidewalk was added on the north side of West College Street to the end of the project study area where it ties to existing sidewalk. The conceptual layouts are included in **Appendix B**.

The estimated required right-of-way and temporary construction easements and preliminary estimate cost is shown in Table 2. The detailed preliminary cost estimates are included in **Appendix C** and **Appendix D**.

Segment	Length (Feet)	Estimated ROW and TCE (Acres)	Preliminary Estimated Cost
SR-70 from McDow Road to SR-25	5000	2.5	$ 3,382,400.00
SR-70 from SR-25 to Walton Drive	1700	0.15	$ 771,840.00

Table 2 – Estimate ROW & TCE and Preliminary Cost Estimate

Future Traffic

The traffic growth for the study area was calculated based on historical traffic count data from the Alabama Department of Transportation's Traffic Data count station within the project limits. The traffic growth rate within the study area was calculated as approximately 1%/year. Existing traffic counts were increased by 10% to develop future 2031 traffic volumes.

Turn lane warrant evaluations were performed using the future 2031 traffic volumes in the AM and PM peaks. For both the SR-70 at McDow Road and SR-70 at Industrial Drive locations, right turn lanes are NOT WARRANTED.

Intersection and roadway segment capacity analyses were performed using future 2031 traffic volumes and was determined that the intersections at McDow Road, Industrial Parkway and SR-25 all performed with acceptable Levels of Service for future conditions. The roadway segments also performed within acceptable Levels of Service for future conditions. Detailed information regarding the traffic counts and analyses for the 2031 Future Condition is included in **Appendix A.**

CONCLUSIONS

Based on the information compiled in field evaluations, development of conceptual layouts and analyses of traffic conditions, the following findings are summarized.

1. The purpose of this report is to document the results of an evaluation of the study area to determine the feasibility and impacts of pedestrian and intersection improvements.
2. The traffic study documented the results of a traffic operations study for bicycle, pedestrian and intersection improvements within the study area.
3. Turn lane warrant evaluation were conducted for existing conditions. The turn lane warrant evaluations indicate that existing peak hour traffic counts meet the criteria for warranting a left turn lane along SR-70 at McDow Road and Industrial Parkway.
4. Conceptual Layouts were developed to show proposed improvements to construct a sidewalk from the Columbiana Sports Complex on McDow Road to SR-70. On SR-70, the

roadway would be widened to include a left turn lane onto McDow Road. The three-lane section would continue to the intersection of SR-25. Sidewalks would be added on both sides of the road from McDow Road to SR-25. The intersection of SR-70 and SR-25 would be improved to provide cross walks and pedestrian features on all approaches. Sidewalk would be added on the north side of West College Street from SR-25 to Walton Drive.

5. Preliminary cost estimates were prepared for the segment from McDow Road to SR-25 and from SR-25 to Walton Drive.
6. The segment from SR-25 to Walton Drive could be constructed as a standalone project since only a small amount of ROW and TCE is required and the cost is considerably less than the other segment.

COLUMBIANA APPLE STUDY

COLUMBIANA, ALABAMA

PREPARED FOR:

THE CITY OF COLUMBIANA

SHELBY COUNTY HIGHWAY DEPARTMENT

THE REGIONAL PLANNING COMMISSION
OF GREATER BIRMINGHAM

PREPARED BY:

SKIPPER CONSULTING INC

APRIL 2021

COLUMBIANA APPLE STUDY

COLUMBIANA, ALABAMA

Prepared for:

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APRIL 2021

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INTRODUCTION

The purpose of this report is to document the results of a traffic operations study conducted for a bicycle, pedestrian, and intersection improvements project along Alabama Highway 70/West College Street in Columbiana, Alabama. The City of Columbiana, Shelby County, and the Regional Planning Commission of Greater Birmingham have identified the Alabama Highway 70/West College Street corridor as location of bicycle, pedestrian, and roadway improvements. This study effort has been conducted to perform a traffic operational assessment of the corridor and the implications for constructing these improvements. The traffic operational study which is summarized in this document was undertaken to accomplish the following objectives:

- To review/examine the existing roadway conditions within the study area;
- Analyze the planned improvements within the study area; and
- Determine the geometric and traffic control improvements, if any, that would be needed to accommodate the planned improvements.

Sources of information used in this report include: the Institute of Transportation Engineers; the Transportation Research Board; the Alabama Department of Transportation; Shelby County, Alabama; the City of Columbiana, Alabama; the Regional Planning Commission of Greater Birmingham; Traffic Data, LLC.; Gonzalez Strength & Associates, Inc.; and the files and field reconnaissance efforts of Skipper Consulting, Inc.

Study Area & Project Limits

The project encompasses a section of McDow Road from the entrance to the Columbiana Sports Complex to West College Street and the portion of Alabama Highway 70/West College Street east to the existing sidewalk on West College Street (east of Walton Street) a distance of approximately 6,700 feet. Figure 1 illustrates the project boundaries and its relationship to adjacent area roadways.

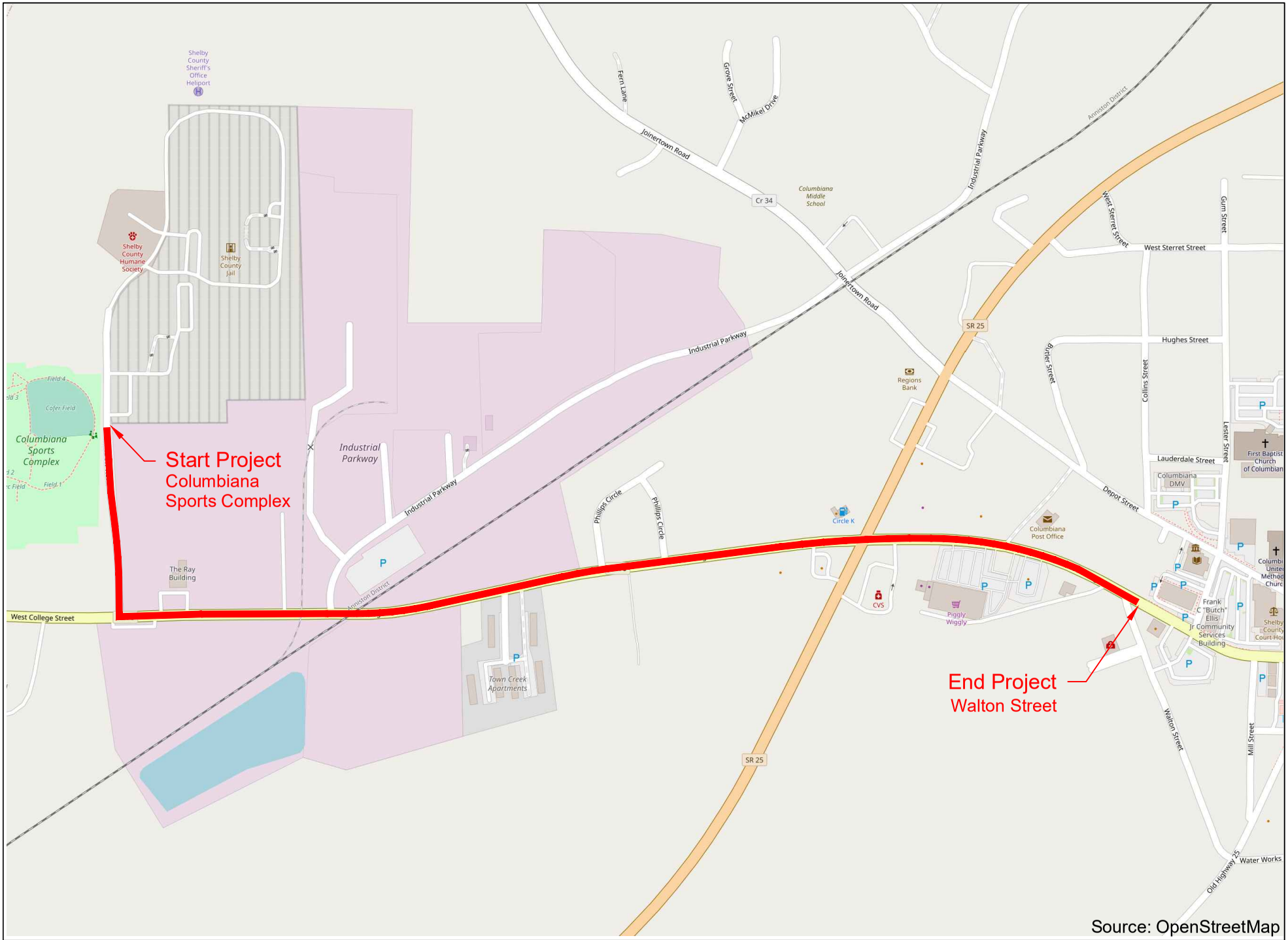

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Figure 1 - Site Location Map
Columbiana APPLE
Columbiana, Alabama

LEGEND

Project Limits

Scale: Not to Scale
Date: APR 2021

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EXISTING ROADWAY CONDITIONS

Study Intersections and Roadways

Intersections included in the traffic operational assessment within the project study area include:

- Alabama Highway 70 at McDow Road;
- Alabama Highway 70 at Industrial Parkway; and
- Alabama Highway 70/West College Street at Alabama Highway 25.

Alabama Highway 70, from McDow Road east to Alabama Highway 25 is a two-lane undivided rural minor arterial roadway with a posted speed limit of 45 miles per hour. East of Alabama Highway 25, West College Street widens to a three lane roadway with a center two-way left turn lane that extends east and transitions back into a two lane cross section just west of Walton Street. In this section of West College Street, the posted speed limit is 35 mph. McDow Road is a two-lane road that provides access to the adjoining land uses, which include the Columbiana Sports Complex and industrial uses.

Sidewalks currently exist on West College Street beginning east of the project limits and terminating prior to Walton Street. Currently, there is an approximate 150-foot section of sidewalk on each side of West College Street within the project limits and include a mid-block crosswalk adjacent to Davis Plaza and Jack's.

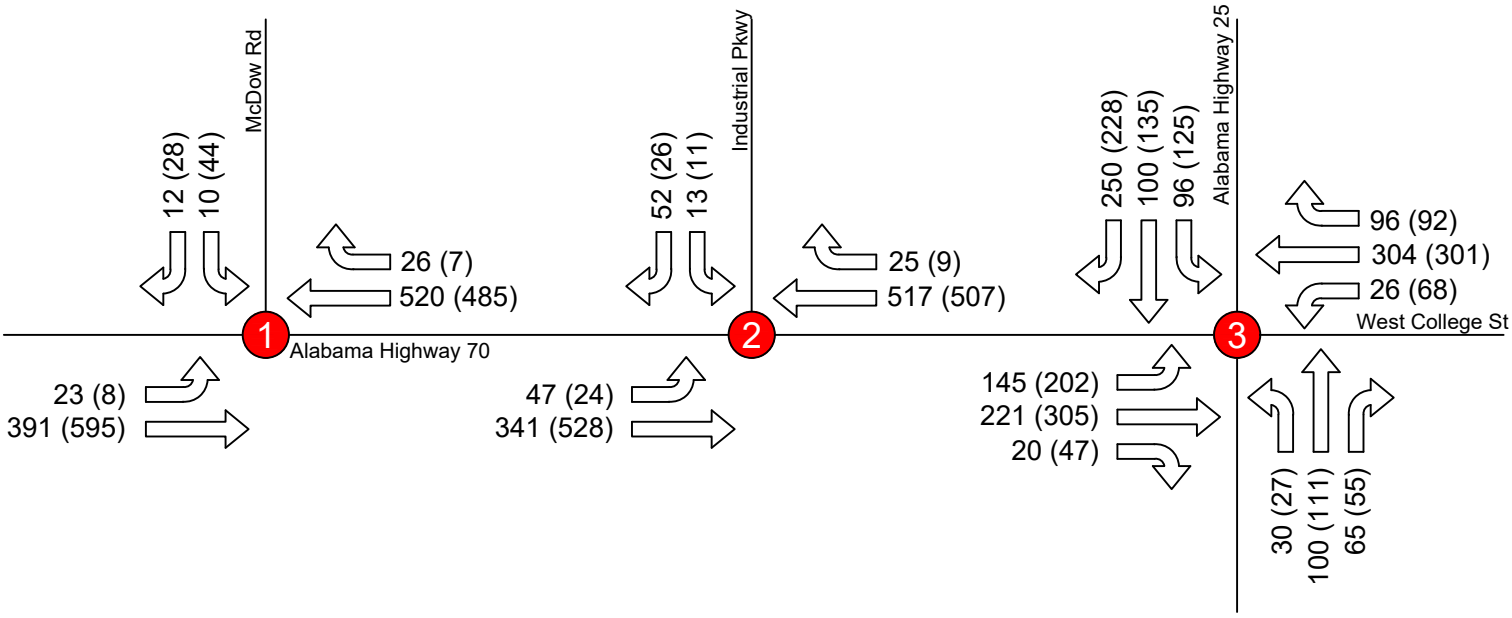
Existing Traffic Counts

Twenty-four-hour bidirectional traffic counts with vehicle classification and speed were conducted along Alabama Highway 70, east of Phillips Circle and along West College Street, east of Alabama Highway 25. **Table 1** illustrates the daily traffic counts, the 85th percentile speed observed along Alabama Highway 70 and West College Street and the percentage of trucks. As noted in **Table 1**, the sample speed data indicated traffic on both roadways sampled was traveling at or below the posted speed limit.

Table 1 – Daily Traffic Counts and Speed

Roadway Segment	Daily Traffic (vehicles)	85th Percentile Speed	Truck Percentage	Heavy Truck Percentage
Alabama Highway 70 east of Phillips Circle	11,092	~ 43 mph	12%	2.7%
West College Street east of Alabama Highway 25	9,487	~ 34 mph	9%	1.9%

In addition to the hourly counts, morning and afternoon peak hour turning movement counts were conducted at the study intersections for a typical weekday beginning Tuesday, December 1, 2020 by Traffic Data, LLC. on behalf of Skipper Consulting, Inc. Peak hour turning movement volumes are illustrated in **Figure 2** and detailed traffic count data is provided in **Appendix B**.



Source: OpenStreetMap

SKIPPER CONSULTING INC

Figure 2 - Existing Traffic Volumes
Columbiana APPLE
Columbiana, Alabama

LEGEND

XX AM Peak Hour Traffic Volumes

(XX) PM Peak Hour Traffic Volumes

Scale: Not to Scale
Date: APR 2021

North

Existing Intersection Capacity Analysis

Using methods as outlined in the *Highway Capacity Manual*, published by the Transportation Research Board, using *Synchro* software, the existing capacity and operation of the study intersections were evaluated. According to this method of analysis, traffic capacities are expressed as levels of service, ranging from "A" (best) to "F" (worst). In general, a level of service (LOS) "C" is considered desirable, while a level of service "D" is considered acceptable during peak hours of traffic flow. Existing morning and afternoon peak hour approach levels of service for the study intersections are summarized in Table 2 and capacity analysis printouts are provided in Appendix C.

Table 2 – Intersection Capacity Analysis – Existing Conditions

Intersection (Traffic Control)	Approach	AM Peak Hour		PM Peak Hour	
		Level of Service	Delay (s)	Level of Service	Delay (s)
Alabama Highway 70 at McDow Road (*side street stop*)	Alabama Highway 70 (eastbound)	A	0.5	A	0.1
	Alabama Highway 70 (westbound)	A	0.0	A	0.0
	McDow Road (southbound)	C	17.8	D	28.1
Alabama Highway 70 at Industrial Parkway (*side street stop*)	Alabama Highway 70 (eastbound)	A	1.1	A	0.4
	Alabama Highway 70 (westbound)	A	0.0	A	0.0
	Industrial Parkway (southbound)	C	16.4	C	17.8
Alabama Highway 70/ West College Street at Alabama Highway 25 (*signalized*)	Alabama Highway 70 (eastbound)	B	12.0	B	13.6
	West College Street (westbound)	B	16.0	B	16.8
	Alabama Highway 25 (northbound)	C	26.0	C	27.3
	Alabama Highway 25 (southbound)	C	22.3	C	23.0
	Overall Intersection LOS	**B**	**17.1**	**B**	**18.1**

The results of the capacity analyses for existing conditions indicate that all approaches of the study intersections presently operate with acceptable levels of service during the morning and afternoon peak hours under existing conditions.

Turn Lane Warrant Evaluations – Existing Conditions

The criteria used in the assessment for turn lanes at the study intersection approaches is based upon National Cooperative Highway Research Program 457 *Evaluating Intersection Improvements: An Engineering Study Guide* (Report 457). Existing peak hour traffic volumes were compared to the criteria of *Report 457*. Tables 3 and 4 outline the results of the turn lane warrant analysis efforts. The turn lane warrant evaluation worksheets are provided in Appendix D.

Table 3 – Left Turn Lane Warrant Evaluation – Existing Conditions

Intersection	Approach	Peak Period	Advancing Volume	Left Turn Volume	Opposing Volume	Turn Lane Warrant Status
Alabama Highway 70 at McDow Road	Eastbound Alabama Highway 70	AM Peak	414	23	546	Turn Lane Warranted
		PM Peak	603	8	492	
Alabama Highway 70 at Industrial Pkwy	Eastbound Alabama Highway 70	AM Peak	388	47	542	Turn Lane Warranted
		PM Peak	552	24	516	

Table 4 – Right Turn Lane Warrant Evaluation – Existing Conditions

Intersection	Approach	Peak Period	Total Volume	Right Turn Volume	Turn Lane Warrant Status
Alabama Highway 70 at Industrial Pkwy	Westbound Alabama Highway 70	AM Peak	542	25	Turn Lane **NOT** Warranted
		PM Peak	516	9	
Alabama Highway 70 at Alabama Highway 25	Westbound Alabama Highway 70	AM Peak	400	96	Turn Lane **NOT** Warranted
		PM Peak	393	92	

Existing Daily Roadway Segment Capacity Analyses

Roadway segment capacity analyses for daily traffic conditions on the study corridor were performed using the daily capacity and level of service chart developed from information obtained from the Alabama Department of Transportation and the Highway Capacity Manual. This chart is provided in **Appendix E** for reference. Existing daily traffic volumes along Alabama Highway 70 and West College Street were compared with daily traffic capacities for existing traffic conditions. The roadway segment capacity analysis is calculated by taking the daily volume and dividing by its daily carrying capacity (found in **Appendix E**). **Table 5** illustrates the volume to capacity ratio expressed as Level of Service.

Table 5 – Daily Roadway Capacity Level of Service Thresholds

v/c Ratio	LOS
< 0.35	A
0.35 – 0.50	B
0.50 – 0.62	C
0.62 – 0.75	D
0.75 – 1.00	E
> 1.00	F

Table 6 provides a summary of the current daily traffic volumes and the daily levels of service along with the corresponding volume to capacity ratios.

Table 6 – Daily Roadway Level of Service Capacity Calculations

Roadway	Location	Classification	Number of Lanes	Daily Traffic Volume	Roadway Capacity	v/c Ratio	Level of Service
Alabama Highway 70	east of Phillips Circle	Minor Arterial (undivided)	2	11,092	17,800	0.62	D
West College Street	east of Alabama Highway 25	Minor Collector (undivided)*	2*	9,487	14,900	0.64	D

*Although West College Street is a three lane local roadway, it was assumed as a two lane minor collector for analyses purposes to be conservative.

The results of the daily roadway segment capacity analyses indicate that Alabama Highway 70 and West College Street presently operate at acceptable levels of service under existing conditions.

FUTURE ROADWAY CONDITIONS

A conceptual plan has been proposed for the Alabama Highway 70/West College Street corridor to improve bicycle and pedestrian safety. The proposed improvements are planned for the construction of a sidewalk from the Columbiana Sports Complex multi-use path on McDow Road south to Alabama Highway 70. The plans also proposes to provide sidewalks on both sides of Alabama Highway 70 and continue east to the existing sidewalk, east of Walton Street. In addition to the sidewalk construction, it is planned to improve the existing signalized intersection of Alabama Highway 70/West College Street and Alabama Highway 25 to provide crosswalks and pedestrian features on three approaches. An additional crosswalk is planned on the eastern side of the Alabama Highway 70 and McDow Road intersection. The existing mid-block crosswalk adjacent to Davis Plaza and Jack's would be restriped to provide a 90 degree angle with West College Street. In addition, a concrete refuge island should be constructed to allow the safe passage of pedestrians across West College Street. The planned improvements and crosswalk details are provided in **Appendix A**.

Traffic Growth

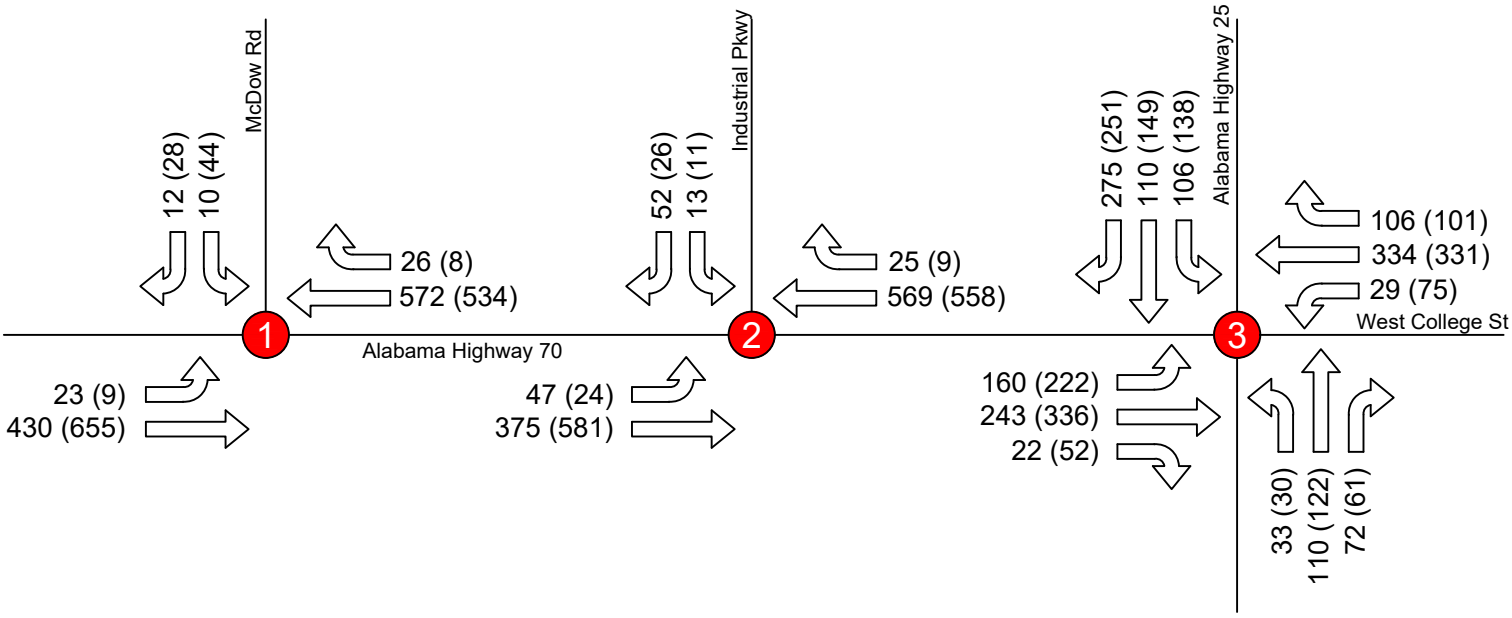
The growth in traffic for the study area was calculated based on historical traffic count data from the Alabama Department of Transportation's Traffic Data count station within the project limits. The traffic growth rate within the study area was calculated as approximately 1.0%/year. Existing traffic counts were increased by 10% to develop future 2031 traffic volumes. **Figure 3** illustrates the traffic volumes for the 2031 traffic conditions and will be used for future analyses.

Turn Lane Warrant Evaluations – Future 2031 Conditions

The criteria used in the assessment for turn lanes at the study intersection approaches is based upon National Cooperative Highway Research Program 457 *Evaluating Intersection Improvements: An Engineering Study Guide* (Report 457). Future 2031 peak hour traffic volumes were compared to the criteria of *Report 457*. **Table 7** outlines the results of the turn lane warrant analysis efforts. The turn lane warrant evaluation worksheets are provided in **Appendix F**.

Table 7 – Right Turn Lane Warrant Evaluation – Future 2031 Conditions

Intersection	Approach	Peak Period	Total Volume	Right Turn Volume	Turn Lane Warrant Status
Alabama Highway 70 at McDow Road	Westbound Alabama Highway 70	AM Peak	594	25	Turn Lane **NOT** Warranted
		PM Peak	567	9	
Alabama Highway 70 at Industrial Pkwy	Westbound Alabama Highway 70	AM Peak	440	106	Turn Lane **NOT** Warranted
		PM Peak	432	101	



Source: OpenStreetMap

SKIPPER CONSULTING INC

Figure 3 - Future 2031 Traffic Volumes
Columbiana APPLE
Columbiana, Alabama

LEGEND

XX AM Peak Hour Traffic Volumes

(XX) PM Peak Hour Traffic Volumes

Scale: Not to Scale
Date: APR 2021

North

Intersection Capacity Analysis – Future 2031 Conditions

Using methods as outlined previously in the *Highway Capacity Manual*, the future capacity and operation of the signalized study intersection was evaluated. The study intersections were evaluated for future 2031 conditions. Capacity analysis for future 2031 conditions were conducted assuming the future 2031 traffic volumes and the future roadway improvements would be in place. The future 2031 conditions morning and afternoon peak hour approach levels of service for the signalized study intersection is summarized in Table 8 and capacity analysis printouts are provided in Appendix G.

Table 8 – Intersection Capacity Analysis – Future 2031 Conditions

Intersection (Traffic Control)	Approach	AM Peak Hour		PM Peak Hour	
		Level of Service	Delay (s)	Level of Service	Delay (s)
Alabama Highway 70 at McDow Road (*side street stop*)	Alabama Highway 70 (eastbound)	A	0.5	A	0.1
	Alabama Highway 70 (westbound)	A	0.0	A	0.0
	McDow Road (southbound)	C	19.6	D	34.8
Alabama Highway 70 at Industrial Parkway (*side street stop*)	Alabama Highway 70 (eastbound)	A	1.0	A	0.4
	Alabama Highway 70 (westbound)	A	0.0	A	0.0
	Industrial Parkway (southbound)	C	17.8	C	19.8
Alabama Highway 70/ West College Street at Alabama Highway 25 (*signalized*)	Alabama Highway 70 (eastbound)	B	12.8	B	14.4
	West College Street (westbound)	B	17.7	B	18.2
	Alabama Highway 25 (northbound)	C	26.5	C	27.6
	Alabama Highway 25 (southbound)	C	22.5	C	23.6
	Overall Intersection LOS	**B**	**18.1**	**B**	**18.9**

The results of the capacity analyses for future conditions indicate that all approaches of the study intersections would continue to operate with acceptable levels of service during the morning and afternoon peak hours under future 2031 traffic conditions.

Daily Roadway Segment Capacity Analyses – Future 2031 Conditions

Roadway segment capacity analyses for daily traffic conditions on the study corridor were performed using the daily capacity and level of service chart as outlined previously. Future 2031 daily traffic volumes along Alabama Highway 70 and West College Street were compared with daily traffic capacities for future traffic conditions. Table 9 illustrates the volume to capacity ratio expressed as Level of Service.

Table 9 – Daily Roadway Level of Service Capacity Calculations – Future 2031 Conditions

Roadway	Location	Classification	Number of Lanes	Daily Traffic Volume	Roadway Capacity	v/c Ratio	Level of Service
Alabama Highway 70	east of Phillips Circle	Minor Arterial (undivided)	2	12,201	17,800	0.69	D
West College Street	east of Alabama Highway 25	Minor Collector (undivided)*	2*	10,436	14,900	0.70	D

*Although West College Street is a three lane local roadway, it was assumed as a two lane minor collector for analyses purposes to be conservative.

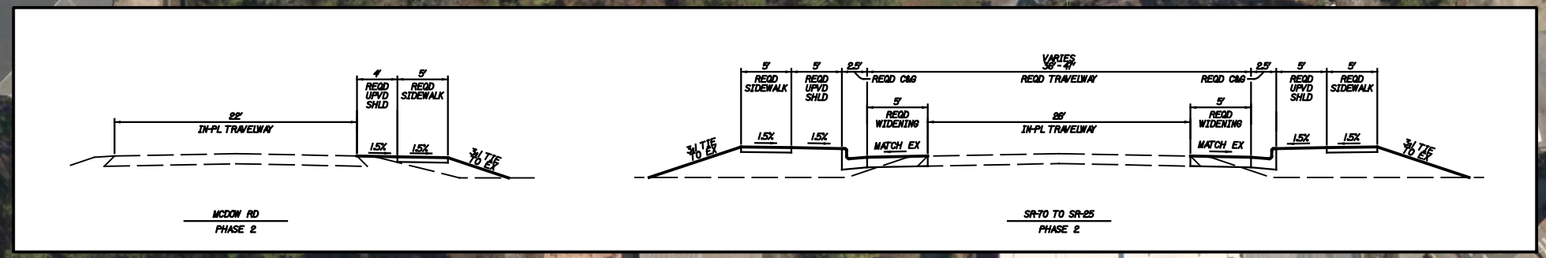
The results of the daily roadway segment capacity analyses indicate that Alabama Highway 70 and West College Street would continue to operate at acceptable levels of service under future 2031 conditions.

CONCLUSIONS

Based upon the evaluations and analyses documented in this report, the following summary can be stated:

1. The purpose of this report is to document the results of a traffic operations study conducted for a bicycle, pedestrian, and intersection improvements project along Alabama Highway 70/West College Street in Columbiana, Alabama
2. The subject of this project is an approximate 6,700 foot section of Highway 70/West College Street in Columbiana, Alabama. The specific limits of this study effort begin at the intersection of Alabama Highway 70 and McDow Road and continues east to the existing sidewalk on West College Street, east of Walton Street.
3. Using methods as outlined in the *Highway Capacity Manual*, the existing capacity and operation of the study intersections were evaluated. The results showed that all of the approaches at the study intersections are presently operating with acceptable levels of service during the morning and afternoon peak hours under existing conditions.
4. Daily roadway segment capacity analyses were conducted along Alabama Highway 70 and West College Street. The results indicate that Alabama Highway 70 and West College Street presently operate at acceptable levels of service under existing conditions.
5. Turn lane warrant evaluations were conducted for existing conditions. The turn lane warrant evaluations indicate that existing peak hour traffic counts meet the criteria for warranting a left turn lane along Alabama Highway 70 at McDow Road and Industrial Parkway.
6. The proposed improvements are planned to construct sidewalk from the Columbiana Sports Complex multi-use path on McDow Road south to Alabama Highway 70 and would continue east to the existing sidewalk, east of Walton Street. In addition to the sidewalk construction, it is planned to improve the existing signalized intersection of Alabama Highway 70/West College Street and Alabama Highway 25 to provide crosswalks and pedestrian features on three approaches. An additional crosswalk is planned on the eastern side of the Alabama Highway 70 and McDow Road intersection. The existing mid-block crosswalk adjacent to Davis Plaza and Jack's would be restriped to provide a 90 degree angle with West College Street. In addition, a concrete refuge island should be constructed to allow the safe passage of pedestrians across West College Street.
7. A growth rate of 10% was applied to existing traffic counts to develop future 2031 traffic volumes. These volumes were utilized for the future traffic conditions analyses.
8. The future capacity and operation of the signalized study intersection was evaluated assuming future 2031 traffic volumes and future roadway conditions were in place. The results showed that all of the approaches at the study intersection would continue to operate with acceptable levels of service during the morning and afternoon peak hours under future 2031 conditions.
9. Daily roadway segment capacity analyses were conducted along Alabama Highway 70 and West College Street. The results indicate that Alabama Highway 70 and West College Street would continue to operate at acceptable levels of service under future 2031 conditions.

Appendix A
Improvement Concept


4'
REQD UPVD SHLD
5'
REQD SIDEWALK
22'
IN-PL TRAVELWAY
1.5%
1.5%
3:1 TIE TO EX
MCDOW RD
PHASE 2
5'
REQD SIDEWALK
5'
REQD UPVD SHLD
2.5'
REQD CMB
VARIES 36'-41'
REQD TRAVELWAY
5'
REQD WIDENING
MATCH EX
26'
IN-PL TRAVELWAY
SR-70 TO SR-25
PHASE 2

REQD 5' SW
MCDOW RD
INDUSTRIAL PKWY
SR-70
REQD 2' PVD SHLD
100' TAPER
100' TURN LANE
100' TRANSITION
W11-2
W16-7p
AHEAD
REQD 5' SW
REQD 5' SW

PHASE 2

NOTE: PHASE 2 DRAWINGS ARE APPROXIMATE
TCE'S TO BE DETERMINED

PHASE 1

SR-25

21-7-28-2-001-041.000
MADDOX WALTER C
5481 CALDWELL MILL RD
BIRMINGHAM, AL 35242

21-7-28-2-001-040.000
MADDOX WALTER C
5481 CALDWELL MILL RD
BIRMINGHAM, AL 35242

21-7-28-2-001-042.000
NATIONAL RETAIL PROPERTIES LP
450 SOUTH ORANGE AVENUE SUITE 900
ORLANDO, FL 32801

21-7-28-1-001-048.000
O REILLY AUTOMOTIVE STORES INC
PO BOX 9167
SPRINGFIELD, MO 65801

21-7-28-1-001-039.006
FIRST US BANK
4720 HWY 31
CALERA, AL 35040

21-7-28-1-001-046.006
FIRST US BANK
4720 HWY 31
CALERA, AL 35040

21-7-28-1-001-049.000
COLUMBIANA PROPERTIES LLC
PO BOX 694
COLUMBIANA, AL 35051

21-7-28-2-001-044.000
D/S 4666 K, LLC STORE #4666
PO BOX 1885
WOODSTOCK, GA 30188

21-7-28-2-001-047.000
MCDONALD'S CORPORATION
PO BOX 182571
COLUMBUS, OH 43218

21-7-28-1-001-049.000
COLUMBIANA PROPERTIES LLC
PO BOX 694
COLUMBIANA, AL 35051

100+00
105+00
110+00

+31.89
TIE TO PRES
(50.00' LT)

+50.00
39.59' LT

+85.00
(42.39' LT)

+30.00
55.00' LT

+20.00
TIE TO PRES
(36.11' RT)

+20.00
40.29' RT

+56.00
39.27' RT

+75.00
TIE TO
(49.32'

PC Sta 100+00.00

GONZALEZ • STRENGTH & ASSOCIATES, INC.
CIVIL ENGINEERING, LAND SURVEYING, PLANNING, TRAFFIC & TRANSPORTATION

SKIPPER CONSULTING INC

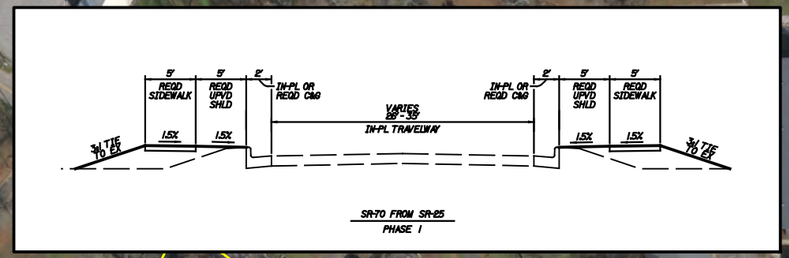
DATE: 04/07/2021
SCALE 1" = 50' @ 36" ROLL
SCALE 1" = 150' @ 11 X 17

PRELIMINARY
NOT FOR CONSTRUCTION,
RECORDING OR IMPLEMENTATION

PHASE 2

NOTE: PHASE 2 DRAWINGS ARE APPROXIMATE
TCE'S TO BE DETERMINED

PHASE 1



SR-25

SR-70

WALTON DR

AHEAD

001 AC ADDD ROW
002 AC TCE
002 AC ADDD ROW
001 AC ADDD ROW
002 AC ADDD ROW
001 AC ADDD ROW
001 AC ADDD ROW
002 AC ADDD ROW
001 AC ADDD ROW
002 AC ADDD ROW

21-7-26-2-001-041.000
MADDOX WALTER C
5481 CALDWELL MILL RD
BIRMINGHAM, AL 35242

21-7-26-2-001-040.000
MADDOX WALTER C
5481 CALDWELL MILL RD
BIRMINGHAM, AL 35242

21-7-26-1-001-038.002
HOMESTEAD SAVINGS & MORTGAGE CO INC
104 EAST COLLEGE STREET
COLUMBIANA, AL 35051

21-7-26-1-001-039.000
SHELBY LODGE 140 F&AM OF AL
PO BOX 1237
COLUMBIANA, AL 35051

21-7-26-1-001-047.000
ALABAMA GAS CORPORATION
605 RICHARD ARRINGTON JR BLVD N
BIRMINGHAM, AL 35203

21-7-26-1-001-038.003
HAL REALTY COMPANY LLC
2453 VESTAVIA HILLS DRIVE
VESTAVIA HILLS, AL 35216

21-7-26-1-001-039.000
MUNDY CHRIS & AMANDA
ITA TWELVE OAKS DR
CHELSEA, AL 35043

21-7-26-1-001-039.000
SHELBY LODGE 140 F&AM OF AL
PO BOX 1237
COLUMBIANA, AL 35051

21-7-26-1-001-049.010
NOLEN PROPERTIES LLC
247 WALTON STREET
COLUMBIANA, AL 35051

21-7-26-1-001-049.000
COLUMBIANA PROPERTIES LTD
PO BOX 894
COLUMBIANA, AL 35051

21-7-26-1-001-049.002
COLUMBIANA PROPERTIES LTD
PO BOX 894
COLUMBIANA, AL 35051

21-7-26-1-001-049.004
COLUMBIANA PROPERTIES LIMITED
1230 MT CANOOR DR
BIRMINGHAM, AL 35209

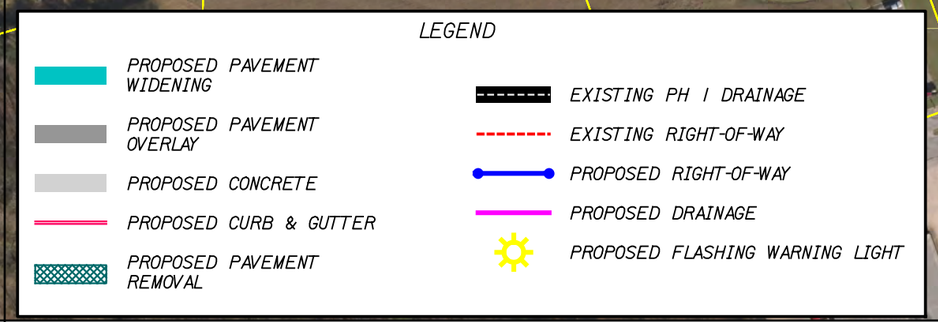
21-7-26-1-001-049.005
COLUMBIANA PROPERTIES LTD
PO BOX 894
COLUMBIANA, AL 35051

21-7-26-1-001-049.008
FIRST US BANK
4720 HWY 31
CALERA, AL 35040

21-7-26-1-001-048.000
O REILLY AUTOMOTIVE STORES INC
PO BOX 9167
SPRINGFIELD, MO 65801

21-7-26-2-001-042.000
NATIONAL RETAIL PROPERTIES LP
450 SOUTH ORANGE AVENUE SUITE 900
ORLANDO, FL 32801

21-7-26-2-001-044.000
CVS 4866 AL LLC STORE #4866
PO BOX 1450
WOONSOCKET, RI 02895

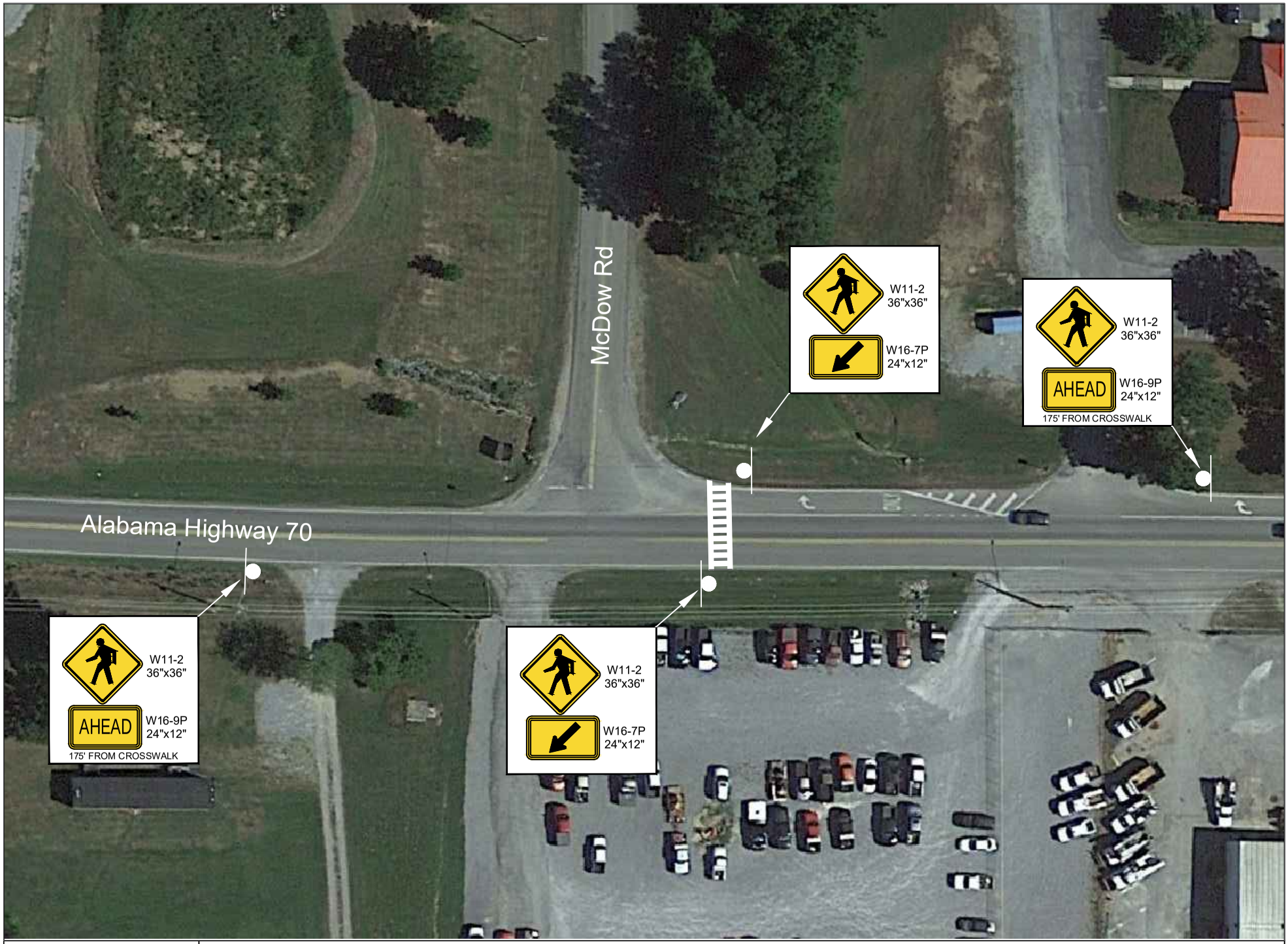


GONZALEZ · STRENGTH & ASSOCIATES, INC.
CIVIL ENGINEERING, LAND SURVEYING, PLANNING, TRAFFIC & TRANSPORTATION

SKIPPER CONSULTING INC

DATE: 04/07/2021
SCALE 1"=50' @ 36" ROLL
SCALE 1"=150' @ 11 X 17

PRELIMINARY
NOT FOR CONSTRUCTION, RECORDING OR IMPLEMENTATION

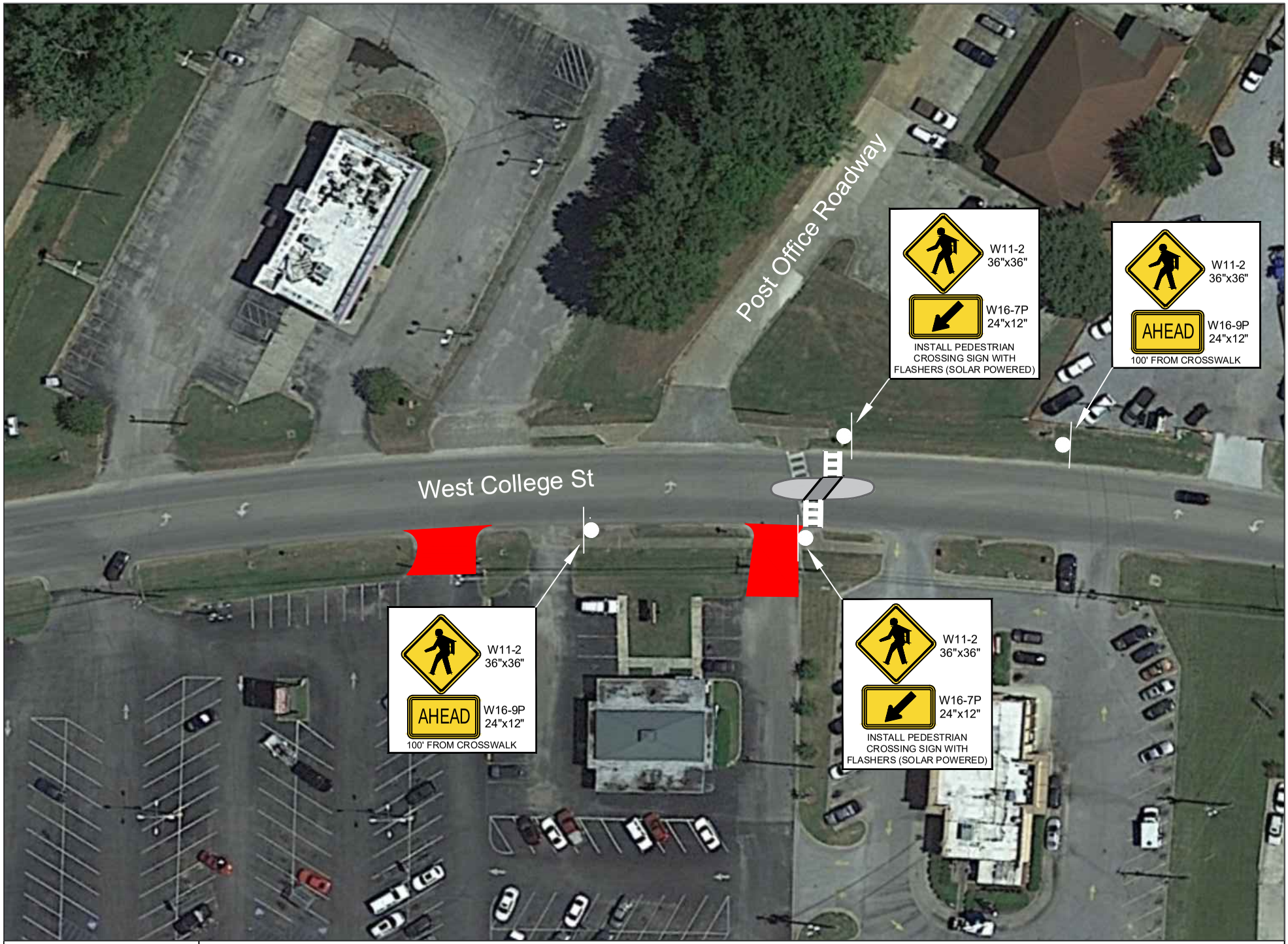


SKIPPER CONSULTING INC

Appendix A - Crosswalk Detail (McDow Road)
Columbiana APPLE
Columbiana, Alabama

Scale: Not to Scale
Date: APR 2021

North



SKIPPER CONSULTING INC

Appendix A - Midblock Crosswalk Detail (Davis Plaza/Jack's)
Columbiana APPLE
Columbiana, Alabama

Scale: Not to Scale
Date: APR 2021

North

Appendix B
Traffic Count Data

TRAFFIC DATA, LLC

1409 Turnham Lane
Birmingham, AL 35216
205-824-0125

Columbiana, AL

File Name : columbiana01
Site Code : 00000000
Start Date : 12/01/2020
Page No : 1

Groups Printed- Unshifted

	McDOW RD Southbound		HWY 70 Westbound		HWY 70 Eastbound		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
04:00 PM	11	6	80	5	3	126	231
04:15 PM	9	4	104	2	2	135	256
04:30 PM	16	12	113	3	1	134	279
04:45 PM	4	5	137	1	3	151	301
Total	40	27	434	11	9	546	1067
05:00 PM	13	4	111	2	1	150	281
05:15 PM	11	7	124	1	3	160	306
05:30 PM	2	3	103	5	4	146	263
05:45 PM	3	2	69	3	7	106	190
Total	29	16	407	11	15	562	1040
07:00 AM	5	14	111	6	5	82	223
07:15 AM	2	3	150	2	4	99	260
07:30 AM	4	0	127	8	4	128	271
07:45 AM	4	4	142	9	8	87	254
Total	15	21	530	25	21	396	1008
08:00 AM	0	5	101	7	7	77	197
08:15 AM	3	2	95	6	2	71	179
08:30 AM	2	1	87	8	4	65	167
08:45 AM	3	4	72	10	4	67	160
Total	8	12	355	31	17	280	703
Grand Total	92	76	1726	78	62	1784	3818
Apprch %	54.8	45.2	95.7	4.3	3.4	96.6	
Total %	2.4	2.0	45.2	2.0	1.6	46.7	

	McDOW RD Southbound			HWY 70 Westbound				HWY 70 Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1											
Intersection	04:30 PM										
Volume	44	28	72	485	7	492	0	8	595	603	1167
Percent	61.1	38.9		98.6	1.4			1.3	98.7		
05:15 Volume	11	7	18	124	1	125	0	3	160	163	306
Peak Factor											0.953
High Int.	04:30 PM			04:45 PM			3:45:00 PM	05:15 PM			
Volume	16	12	28	137	1	138	0	3	160	163	
Peak Factor			0.643			0.891				0.925	
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1											
By Approach	04:30 PM			04:30 PM			04:00 PM	04:45 PM			
Volume	44	28	72	485	7	492	0	11	607	618	
Percent	61.1	38.9		98.6	1.4			1.8	98.2		
High Int.	04:30 PM			04:45 PM			-	05:15 PM			
Volume	16	12	28	137	1	138	-	3	160	163	
Peak Factor			0.643			0.891	-			0.948	

TRAFFIC DATA, LLC
1409 Turnham Lane
Birmingham, AL 35216
205-824-0125

File Name : columbiana01
Site Code : 00000000
Start Date : 12/01/2020
Page No : 2

	McDOW RD Southbound			HWY 70 Westbound				HWY 70 Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1											
Intersection	07:00 AM										
Volume	15	21	36	530	25	555	0	21	396	417	1008
Percent	41.7	58.3		95.5	4.5			5.0	95.0		
07:30 Volume	4	0	4	127	8	135	0	4	128	132	271
Peak Factor											0.930
High Int.	07:00 AM			07:15 AM				07:30 AM			
Volume	5	14	19	150	2	152	0	4	128	132	
Peak Factor			0.474			0.913				0.790	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1											
By Approach	07:00 AM			07:00 AM			07:00 AM	07:00 AM			
Volume	15	21	36	530	25	555	0	21	396	417	
Percent	41.7	58.3		95.5	4.5			5.0	95.0		
High Int.	07:00 AM			07:15 AM			-	07:30 AM			
Volume	5	14	19	150	2	152	-	4	128	132	
Peak Factor			0.474			0.913	-			0.790	

TRAFFIC DATA, LLC

1409 Turnham Lane
Birmingham, AL 35216
205-824-0125

Columbiana, AL

File Name : columbiana02
Site Code : 00000000
Start Date : 12/03/2020
Page No : 1

Groups Printed- Unshifted

	INDUSTRIAL PKWY Southbound		HWY 70 Westbound		HWY 70 Eastbound		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
07:00 AM	3	4	109	6	11	85	218
07:15 AM	7	14	131	11	17	82	262
07:30 AM	4	13	137	8	15	109	286
07:45 AM	1	11	128	4	5	79	228
Total	15	42	505	29	48	355	994
08:00 AM	1	14	121	2	10	71	219
08:15 AM	2	7	96	3	3	63	174
08:30 AM	0	8	98	2	6	96	210
08:45 AM	0	5	94	4	9	64	176
Total	3	34	409	11	28	294	779
04:00 PM	4	11	91	1	2	101	210
04:15 PM	1	4	113	3	6	146	273
04:30 PM	4	4	133	6	10	144	301
04:45 PM	5	12	128	2	5	113	265
Total	14	31	465	12	23	504	1049
05:00 PM	1	7	129	1	5	117	260
05:15 PM	1	3	117	0	4	154	279
05:30 PM	2	3	76	0	4	144	229
05:45 PM	0	1	77	0	1	117	196
Total	4	14	399	1	14	532	964
Grand Total	36	121	1778	53	113	1685	3786
Apprch %	22.9	77.1	97.1	2.9	6.3	93.7	
Total %	1.0	3.2	47.0	1.4	3.0	44.5	

	INDUSTRIAL PKWY Southbound			HWY 70 Westbound				HWY 70 Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1											
Intersection	07:15 AM										
Volume	13	52	65	517	25	542	0	47	341	388	995
Percent	20.0	80.0		95.4	4.6			12.1	87.9		
07:30 Volume	4	13	17	137	8	145	0	15	109	124	286
Peak Factor											0.870
High Int.	07:15 AM			07:30 AM			6:45:00 AM	07:30 AM			
Volume	7	14	21	137	8	145	0	15	109	124	
Peak Factor			0.774			0.934				0.782	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1											
By Approach	07:15 AM			07:15 AM			07:00 AM	07:00 AM			
Volume	13	52	65	517	25	542	0	48	355	403	
Percent	20.0	80.0		95.4	4.6			11.9	88.1		
High Int.	07:15 AM			07:30 AM			-	07:30 AM			
Volume	7	14	21	137	8	145	-	15	109	124	
Peak Factor			0.774			0.934	-			0.813	

TRAFFIC DATA, LLC
1409 Turnham Lane
Birmingham, AL 35216
205-824-0125

File Name : columbiana02
Site Code : 00000000
Start Date : 12/03/2020
Page No : 2

	INDUSTRIAL PKWY Southbound			HWY 70 Westbound				HWY 70 Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1											
Intersection	04:30 PM										
Volume	11	26	37	507	9	516	0	24	528	552	1105
Percent	29.7	70.3		98.3	1.7			4.3	95.7		
04:30 Volume	4	4	8	133	6	139	0	10	144	154	301
Peak Factor											0.918
High Int.	04:45 PM			04:30 PM				05:15 PM			
Volume	5	12	17	133	6	139	0	4	154	158	
Peak Factor			0.544			0.928				0.873	
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1											
By Approach	04:00 PM			04:30 PM			04:00 PM	04:30 PM			
Volume	14	31	45	507	9	516	0	24	528	552	
Percent	31.1	68.9		98.3	1.7			4.3	95.7		
High Int.	04:45 PM			04:30 PM			-	05:15 PM			
Volume	5	12	17	133	6	139	-	4	154	158	
Peak Factor			0.662			0.928	-			0.873	

TRAFFIC DATA, LLC

1409 Turnham Lane
Birmingham, AL 35216
205-824-0125

Columbiana, AL

File Name : columbiana03
Site Code : 00000000
Start Date : 12/03/2020
Page No : 1

Groups Printed- Unshifted

	AL 25 Southbound			W COLLEGE ST Westbound			AL 25 Northbound			W COLLEGE ST Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	16	11	47	5	72	22	6	26	10	38	38	4	295
07:15 AM	23	25	48	9	82	37	6	25	14	40	51	5	365
07:30 AM	32	30	67	8	87	25	12	34	22	47	63	9	436
07:45 AM	24	26	65	1	73	19	8	23	18	36	61	2	356
Total	95	92	227	23	314	103	32	108	64	161	213	20	1452
08:00 AM	17	19	70	8	62	15	4	18	11	22	46	4	296
08:15 AM	19	11	32	8	70	13	4	22	5	21	52	4	261
08:30 AM	21	13	40	7	54	14	6	25	8	43	46	4	281
08:45 AM	18	18	42	7	59	14	7	18	10	20	43	7	263
Total	75	61	184	30	245	56	21	83	34	106	187	19	1101
04:00 PM	32	35	58	12	70	26	5	15	7	47	85	8	400
04:15 PM	32	17	60	6	59	30	4	22	11	47	79	10	377
04:30 PM	39	31	50	21	94	24	6	26	14	42	67	9	423
04:45 PM	30	36	42	20	84	19	8	24	15	54	85	11	428
Total	133	119	210	59	307	99	23	87	47	190	316	38	1628
05:00 PM	26	32	72	11	67	29	8	37	18	46	73	18	437
05:15 PM	30	36	64	16	56	20	5	24	8	60	80	9	408
05:30 PM	22	27	40	6	43	23	4	18	10	46	101	6	346
05:45 PM	20	33	48	2	38	16	6	19	10	46	76	2	316
Total	98	128	224	35	204	88	23	98	46	198	330	35	1507
Grand Total	401	400	845	147	1070	346	99	376	191	655	1046	112	5688
Apprch %	24.4	24.3	51.3	9.4	68.5	22.1	14.9	56.5	28.7	36.1	57.7	6.2	
Total %	7.0	7.0	14.9	2.6	18.8	6.1	1.7	6.6	3.4	11.5	18.4	2.0	

	AL 25 Southbound				W COLLEGE ST Westbound				AL 25 Northbound				W COLLEGE ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:15 AM																
Volume	96	100	250	446	26	304	96	426	30	100	65	195	145	221	20	386	1453
Percent	21.5	22.4	56.1		6.1	71.4	22.5		15.4	51.3	33.3		37.6	57.3	5.2		
07:30 Volume	32	30	67	129	8	87	25	120	12	34	22	68	47	63	9	119	436
Peak Factor																	0.833
High Int.	07:30 AM				07:15 AM				07:30 AM				07:30 AM				
Volume	32	30	67	129	9	82	37	128	12	34	22	68	47	63	9	119	
Peak Factor				0.864				0.832				0.717				0.811	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
By Approach	07:15 AM				07:00 AM				07:00 AM				07:00 AM				
Volume	96	100	250	446	23	314	103	440	32	108	64	204	161	213	20	394	
Percent	21.5	22.4	56.1		5.2	71.4	23.4		15.7	52.9	31.4		40.9	54.1	5.1		
High Int.	07:30 AM				07:15 AM				07:30 AM				07:30 AM				
Volume	32	30	67	129	9	82	37	128	12	34	22	68	47	63	9	119	
Peak Factor				0.864				0.859				0.750				0.828	

TRAFFIC DATA, LLC
1409 Turnham Lane
Birmingham, AL 35216
205-824-0125

File Name : columbiana03
Site Code : 00000000
Start Date : 12/03/2020

	AL 25 Southbound				W COLLEGE ST Westbound				AL 25 Northbound				W COLLEGE ST Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	125	135	228	488	68	301	92	461	27	111	55	193	202	305	47	554	1696
Percent	25.6	27.7	46.7		14.8	65.3	20.0		14.0	57.5	28.5		36.5	55.1	8.5		
05:00 Volume	26	32	72	130	11	67	29	107	8	37	18	63	46	73	18	137	437
Peak Factor																	0.970
High Int.	05:00 PM				04:30 PM				05:00 PM				04:45 PM				
Volume	26	32	72	130	21	94	24	139	8	37	18	63	54	85	11	150	
Peak Factor				0.938				0.829				0.766				0.923	
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
By Approach	04:30 PM				04:00 PM				04:15 PM				04:45 PM				
Volume	125	135	228	488	59	307	99	465	26	109	58	193	206	339	44	589	
Percent	25.6	27.7	46.7		12.7	66.0	21.3		13.5	56.5	30.1		35.0	57.6	7.5		
High Int.	05:00 PM				04:30 PM				05:00 PM				05:30 PM				
Volume	26	32	72	130	21	94	24	139	8	37	18	63	46	101	6	153	
Peak Factor				0.938				0.836				0.766				0.962	

TRAFFIC DATA, LLC
1409 Turnham Lane, Birmingham, AL 35216
205-824-0125

Location: : AL 70 east of PHILLIPS CIR
City, State: : COLUMBIANA, AL
Speed Limit: : 45 mph

Date: 12/1/2020
Tuesday

24 Hour Volume

	Begin	EB		WB		Combined	
	4:00 PM	130	514	73	389	203	903
	4:15 PM	129		90		219	
	4:30 PM	127		113		240	
	4:45 PM	128		113		241	
	5:00 PM	146	512	98	355	244	867
	5:15 PM	134		105		239	
	5:30 PM	139		88		227	
	5:45 PM	93		64		157	
	6:00 PM	92	336	53	185	145	521
	6:15 PM	99		49		148	
	6:30 PM	83		44		127	
	6:45 PM	62		39		101	
	7:00 PM	45	167	29	105	74	272
	7:15 PM	42		27		69	
	7:30 PM	35		23		58	
	7:45 PM	45		26		71	
	8:00 PM	29	123	20	78	49	201
	8:15 PM	40		20		60	
	8:30 PM	28		20		48	
	8:45 PM	26		18		44	
	9:00 PM	29	92	36	85	65	177
	9:15 PM	19		17		36	
	9:30 PM	18		17		35	
	9:45 PM	26		15		41	
	10:00 PM	15	58	7	38	22	96
	10:15 PM	13		10		23	
	10:30 PM	13		17		30	
	10:45 PM	17		4		21	
	11:00 PM	14	38	5	20	19	58
	11:15 PM	8		6		14	
	11:30 PM	7		8		15	
	11:45 PM	9		1		10	
12/2/2020	12:00 AM	7	15	7	15	14	30
	12:15 AM	2		3		5	
	12:30 AM	3		0		3	
	12:45 AM	3		5		8	
	1:00 AM	4	11	4	7	8	18
	1:15 AM	1		0		1	
	1:30 AM	4		3		7	
	1:45 AM	2		0		2	
	2:00 AM	1	12	0	14	1	26
	2:15 AM	6		2		8	
	2:30 AM	3		10		13	
	2:45 AM	2		2		4	
	3:00 AM	3	14	10	44	13	58
	3:15 AM	5		11		16	
	3:30 AM	2		10		12	
	3:45 AM	4		13		17	
	4:00 AM	8	35	6	75	14	110
	4:15 AM	6		17		23	
	4:30 AM	9		26		35	
	4:45 AM	12		26		38	
	5:00 AM	9	78	41	281	50	359
	5:15 AM	22		52		74	
	5:30 AM	21		94		115	
	5:45 AM	26		94		120	
	6:00 AM	23	184	110	437	133	621
	6:15 AM	36		104		140	
	6:30 AM	57		110		167	
	6:45 AM	68		113		181	
	7:00 AM	65	360	98	498	163	858
	7:15 AM	86		138		224	
	7:30 AM	113		133		246	
	7:45 AM	96		129		225	
	8:00 AM	58	255	115	380	173	635
	8:15 AM	67		92		159	
	8:30 AM	48		93		141	
	8:45 AM	82		80		162	
	9:00 AM	65	288	67	362	132	650
	9:15 AM	70		98		168	
	9:30 AM	79		92		171	
	9:45 AM	74		105		179	
	10:00 AM	77	297	101	360	178	657
	10:15 AM	72		89		161	
	10:30 AM	69		75		144	
	10:45 AM	79		95		174	
	11:00 AM	78	343	83	379	161	722
	11:15 AM	94		89		183	
	11:30 AM	83		112		195	
	11:45 AM	88		95		183	
	12:00 PM	91	388	109	396	200	784
	12:15 PM	101		111		212	
	12:30 PM	97		89		186	
	12:45 PM	99		87		186	
	1:00 PM	101	359	88	364	189	723
	1:15 PM	90		91		181	
	1:30 PM	79		95		174	
	1:45 PM	89		90		179	
	2:00 PM	92	445	104	385	196	830
	2:15 PM	109		94		203	
	2:30 PM	115		100		215	
	2:45 PM	129		87		216	
	3:00 PM	146	493	112	423	258	916
	3:15 PM	114		112		226	
	3:30 PM	128		112		240	
	3:45 PM	105		87		192	

	EB	WB	Combined
24 Hour Volume	5417 (48.8%)	5675 (51.2%)	11092

12:00 AM - 12:00 PM

	EB	WB	Combined
Count	1892	2852	4744
	39.9 %	60.1 %	
Peak Hour	7:00 AM	7:15 AM	7:15 AM
Volume	360	515	868
Factor	0.80	0.93	0.88

12:00 PM - 12:00 AM

EB	WB	Combined
3525	2823	6348
55.5 %	44.5 %	
4:45 PM	4:30 PM	4:30 PM
547	429	964
0.94	0.95	0.99

TRAFFIC DATA, LLC
1409 Turnham Lane, Birmingham, AL 35216
205-824-0125

Location:: AL 70 east of PHILLIPS CIR
City, State:: COLUMBIANA, AL
Speed Limit:: 45 mph

Date: 12/1/2020
Tuesday

24 Hour Speed
Combined Channels

mph	Total	0 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 200
4:00 PM	903	23	28	36	116	259	292	121	24	0	1	1	0	2
5:00 PM	867	24	39	91	172	246	193	79	21	0	0	0	1	1
6:00 PM	521	12	17	21	79	160	135	80	14	1	0	0	0	2
7:00 PM	272	5	6	9	20	69	83	63	16	0	0	1	0	0
8:00 PM	201	3	4	14	8	51	79	30	10	2	0	0	0	0
9:00 PM	177	0	0	2	5	23	72	62	12	0	1	0	0	0
10:00 PM	96	0	1	0	1	15	30	33	11	3	1	1	0	0
11:00 PM	58	0	1	0	2	9	16	21	5	2	2	0	0	0
12/2/2020														
12:00 AM	30	0	0	0	2	1	11	10	6	0	0	0	0	0
1:00 AM	18	0	0	0	0	0	6	8	3	1	0	0	0	0
2:00 AM	26	0	0	0	0	3	8	10	4	0	1	0	0	0
3:00 AM	58	0	0	0	0	8	11	29	8	2	0	0	0	0
4:00 AM	110	0	0	0	1	8	33	40	25	2	1	0	0	0
5:00 AM	359	2	1	1	2	25	130	136	52	7	2	0	0	1
6:00 AM	621	16	8	4	16	68	227	208	70	3	1	0	0	0
7:00 AM	858	22	20	19	20	139	310	251	68	5	0	1	0	3
8:00 AM	635	11	6	9	39	104	190	197	75	2	1	0	0	1
9:00 AM	650	11	17	9	36	152	236	150	37	2	0	0	0	0
10:00 AM	657	13	20	17	32	125	224	176	46	1	0	1	1	1
11:00 AM	722	21	12	14	47	148	265	168	44	2	0	0	1	0
12:00 PM	784	17	18	13	47	201	299	147	41	1	0	0	0	0
1:00 PM	723	17	18	26	43	161	261	153	38	3	2	0	1	0
2:00 PM	830	22	30	21	82	216	264	162	28	4	1	0	0	0
3:00 PM	916	29	41	64	115	230	288	124	22	3	0	0	0	0
Total	11092	248	287	370	885	2421	3663	2458	680	46	14	5	4	11
%		2.2	2.6	3.3	8.0	21.8	33.0	22.2	6.1	0.4	0.1	0.0	0.0	0.1

Percentile Speeds	10 %	15 %	50 %	85 %	90 %
(mph)	26.6	29.8	37.2	42.6	43.8

10 mph Pace Speed 33.9 - 43.9
Number in Pace 7126 (64.2 %)

Average 35.7 mph
Minimum 5.0 mph
Maximum 93.1 mph

Speeds Exceeded	35 mph	45 mph	55 mph
	62.0 %	6.9 %	0.3 %
Count	6881	760	34

TRAFFIC DATA, LLC
1409 Turnham Lane, Birmingham, AL 35216
205-824-0125

Location:: AL 70 east of PHILLIPS CIR
City, State:: COLUMBIANA, AL
Speed Limit:: 45 mph

Date: 12/1/2020
Tuesday

24 Hour Vehicle Classification
Combined Channels

Time	Total	Bike	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
4:00 PM	903	4	570	231	22	57	2	0	15	1	0	0	0	1
5:00 PM	867	2	523	257	16	54	0	0	15	0	0	0	0	0
6:00 PM	521	0	339	146	3	29	0	0	4	0	0	0	0	0
7:00 PM	272	0	192	68	1	10	0	0	1	0	0	0	0	0
8:00 PM	201	0	133	55	3	10	0	0	0	0	0	0	0	0
9:00 PM	177	0	138	34	0	5	0	0	0	0	0	0	0	0
10:00 PM	96	0	68	26	1	1	0	0	0	0	0	0	0	0
11:00 PM	58	0	44	10	0	4	0	0	0	0	0	0	0	0
12/2/2020														
12:00 AM	30	0	21	7	0	2	0	0	0	0	0	0	0	0
1:00 AM	18	0	12	5	0	1	0	0	0	0	0	0	0	0
2:00 AM	26	0	14	7	1	2	0	0	1	1	0	0	0	0
3:00 AM	58	0	31	15	1	5	1	0	0	5	0	0	0	0
4:00 AM	110	0	64	28	3	6	5	0	0	4	0	0	0	0
5:00 AM	359	1	163	138	6	31	6	0	6	8	0	0	0	0
6:00 AM	621	2	317	191	18	75	4	0	7	6	1	0	0	0
7:00 AM	858	2	495	225	28	59	9	1	24	10	4	0	0	1
8:00 AM	635	1	363	165	17	65	6	2	10	3	2	0	0	1
9:00 AM	650	1	340	191	16	64	11	2	17	5	3	0	0	0
10:00 AM	657	2	361	176	16	57	12	6	18	8	1	0	0	0
11:00 AM	722	5	366	228	23	65	6	2	19	5	2	0	0	1
12:00 PM	784	1	438	218	22	65	13	4	14	8	0	1	0	0
1:00 PM	723	4	395	203	17	73	8	3	15	5	0	0	0	0
2:00 PM	830	4	473	240	24	56	7	1	17	7	1	0	0	0
3:00 PM	916	6	535	256	22	65	9	1	17	5	0	0	0	0
Total	11092	35	6395	3120	260	861	99	22	200	81	14	1	0	4
%		0.3	57.7	28.1	2.3	7.8	0.9	0.2	1.8	0.7	0.1	0.0	0.0	0.0

TRAFFIC DATA, LLC
1409 Turnham Lane, Birmingham, AL 35216
205-824-0125

Location: : W COLLEGE ST east of AL 25
City, State: : COLUMBIANA, AL
Speed Limit: : 35 mph

Date: 12/1/2020 Tuesday

24 Hour Volume

	Begin	EB		WB		Combined	
	4:00 PM	115	431	77	363	192	794
	4:15 PM	112		82		194	
	4:30 PM	87		116		203	
	4:45 PM	117		88		205	
	5:00 PM	127	488	88	282	215	770
	5:15 PM	131		78		209	
	5:30 PM	121		61		182	
	5:45 PM	109		55		164	
	6:00 PM	95	339	51	164	146	503
	6:15 PM	89		51		140	
	6:30 PM	87		38		125	
	6:45 PM	68		24		92	
	7:00 PM	37	188	31	102	68	290
	7:15 PM	49		18		67	
	7:30 PM	49		28		77	
	7:45 PM	53		25		78	
	8:00 PM	43	124	19	81	62	205
	8:15 PM	30		19		49	
	8:30 PM	30		16		46	
	8:45 PM	21		27		48	
	9:00 PM	24	88	47	85	71	173
	9:15 PM	29		20		49	
	9:30 PM	18		12		30	
	9:45 PM	17		6		23	
	10:00 PM	15	51	8	26	23	77
	10:15 PM	11		8		19	
	10:30 PM	9		5		14	
	10:45 PM	16		5		21	
	11:00 PM	13	38	3	14	16	52
	11:15 PM	14		5		19	
	11:30 PM	4		6		10	
	11:45 PM	7		0		7	
12/2/2020	12:00 AM	4	11	2	7	6	18
	12:15 AM	2		1		3	
	12:30 AM	2		1		3	
	12:45 AM	3		3		6	
	1:00 AM	2	9	3	5	5	14
	1:15 AM	2		0		2	
	1:30 AM	4		1		5	
	1:45 AM	1		1		2	
	2:00 AM	1	4	0	8	1	12
	2:15 AM	1		1		2	
	2:30 AM	2		4		6	
	2:45 AM	0		3		3	
	3:00 AM	1	7	7	22	8	29
	3:15 AM	2		3		5	
	3:30 AM	2		8		10	
	3:45 AM	2		4		6	
	4:00 AM	3	12	8	55	11	67
	4:15 AM	2		10		12	
	4:30 AM	5		18		23	
	4:45 AM	2		19		21	
	5:00 AM	7	49	28	185	35	234
	5:15 AM	17		38		55	
	5:30 AM	14		51		65	
	5:45 AM	11		68		79	
	6:00 AM	21	131	66	288	87	419
	6:15 AM	22		70		92	
	6:30 AM	39		79		118	
	6:45 AM	49		73		122	
	7:00 AM	55	327	81	420	136	747
	7:15 AM	67		117		184	
	7:30 AM	118		108		226	
	7:45 AM	87		114		201	
	8:00 AM	64	226	72	274	136	500
	8:15 AM	62		72		134	
	8:30 AM	38		77		115	
	8:45 AM	62		53		115	
	9:00 AM	60	262	59	290	119	552
	9:15 AM	63		71		134	
	9:30 AM	84		90		174	
	9:45 AM	55		70		125	
	10:00 AM	57	240	71	278	128	518
	10:15 AM	58		61		119	
	10:30 AM	55		69		124	
	10:45 AM	70		77		147	
	11:00 AM	70	317	62	329	132	646
	11:15 AM	65		95		160	
	11:30 AM	90		94		184	
	11:45 AM	92		78		170	
	12:00 PM	97	375	93	344	190	719
	12:15 PM	82		97		179	
	12:30 PM	103		71		174	
	12:45 PM	93		83		176	
	1:00 PM	96	355	75	309	171	664
	1:15 PM	97		75		172	
	1:30 PM	75		91		166	
	1:45 PM	87		68		155	
	2:00 PM	73	367	91	336	164	703
	2:15 PM	92		82		174	
	2:30 PM	84		80		164	
	2:45 PM	118		83		201	
	3:00 PM	124	414	111	367	235	781
	3:15 PM	91		82		173	
	3:30 PM	100		92		192	
	3:45 PM	99		82		181	

	EB	WB	Combined
24 Hour Volume	4853 (51.2%)	4634 (48.8%)	9487

12:00 AM - 12:00 PM

	EB	WB	Combined
Count	1595	2161	3756
	42.5 %	57.5 %	
Peak Hour	7:15 AM	7:00 AM	7:00 AM
Volume	336	420	747
Factor	0.71	0.90	0.83

12:00 PM - 12:00 AM

EB	WB	Combined
3258	2473	5731
56.8 %	43.2 %	
4:45 PM	4:15 PM	4:30 PM
496	374	832
0.95	0.81	0.97

TRAFFIC DATA, LLC
1409 Turnham Lane, Birmingham, AL 35216
205-824-0125

Location:: W COLLEGE ST east of AL 25
City, State:: COLUMBIANA, AL
Speed Limit:: 35 mph

Date: 12/1/2020
Tuesday

24 Hour Speed
Combined Channels

mph	Total	0 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 200
4:00 PM	794	32	67	176	306	173	36	1	1	0	0	0	0	2
5:00 PM	770	35	75	145	311	173	28	1	1	1	0	0	0	0
6:00 PM	503	29	66	86	179	106	31	5	1	0	0	0	0	0
7:00 PM	290	14	19	32	96	92	33	4	0	0	0	0	0	0
8:00 PM	205	8	22	12	71	73	18	1	0	0	0	0	0	0
9:00 PM	173	8	7	17	55	64	22	0	0	0	0	0	0	0
10:00 PM	77	3	6	9	21	25	12	1	0	0	0	0	0	0
11:00 PM	52	4	9	3	12	15	7	1	1	0	0	0	0	0
12/2/2020														
12:00 AM	18	2	0	2	4	8	2	0	0	0	0	0	0	0
1:00 AM	14	0	0	0	2	5	6	1	0	0	0	0	0	0
2:00 AM	12	0	0	1	2	4	3	2	0	0	0	0	0	0
3:00 AM	29	0	0	3	5	14	7	0	0	0	0	0	0	0
4:00 AM	67	0	0	2	19	25	15	4	2	0	0	0	0	0
5:00 AM	234	1	0	9	56	106	49	13	0	0	0	0	0	0
6:00 AM	419	2	3	25	121	179	78	11	0	0	0	0	0	0
7:00 AM	747	22	31	83	218	288	91	8	2	0	0	2	1	1
8:00 AM	500	6	8	33	145	204	95	8	1	0	0	0	0	0
9:00 AM	552	5	25	48	167	244	56	6	1	0	0	0	0	0
10:00 AM	518	8	26	58	176	173	68	6	2	0	1	0	0	0
11:00 AM	646	32	39	105	221	203	38	6	1	0	0	0	0	1
12:00 PM	719	38	70	141	267	168	34	1	0	0	0	0	0	0
1:00 PM	664	20	48	98	240	219	34	4	0	0	0	0	0	1
2:00 PM	703	26	39	100	297	193	38	8	1	1	0	0	0	0
3:00 PM	781	38	59	148	299	191	39	5	1	0	1	0	0	0
Total	9487	333	619	1336	3290	2945	840	97	15	2	2	2	1	5
%		3.5	6.5	14.1	34.7	31.0	8.9	1.0	0.2	0.0	0.0	0.0	0.0	0.1

Percentile Speeds	10 %	15 %	50 %	85 %	90 %
(mph)	19.9	22.6	29.2	33.9	35.5

10 mph Pace Speed 24.8 - 34.8
Number in Pace 6392 (67.4 %)

Average 28.3 mph
Minimum 5.0 mph
Maximum 93.1 mph

Speeds Exceeded	25 mph	35 mph	45 mph
	75.9 %	10.2 %	0.3 %
Count	7199	964	27

TRAFFIC DATA, LLC
1409 Turnham Lane, Birmingham, AL 35216
205-824-0125

Location: : W COLLEGE ST east of AL 25
City, State: : COLUMBIANA, AL
Speed Limit: : 35 mph

Date: 12/1/2020
Tuesday

24 Hour Vehicle Classification
Combined Channels

Time	Total	Bike	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
4:00 PM	794	6	509	198	19	41	1	0	18	1	0	1	0	0
5:00 PM	770	2	490	196	12	48	1	0	19	1	0	1	0	0
6:00 PM	503	0	332	132	6	23	0	0	8	0	1	1	0	0
7:00 PM	290	0	201	67	2	13	0	0	7	0	0	0	0	0
8:00 PM	205	0	145	50	2	6	1	0	1	0	0	0	0	0
9:00 PM	173	0	129	42	0	2	0	0	0	0	0	0	0	0
10:00 PM	77	0	58	17	1	1	0	0	0	0	0	0	0	0
11:00 PM	52	0	36	13	0	2	0	0	1	0	0	0	0	0
12/2/2020														
12:00 AM	18	0	12	4	0	2	0	0	0	0	0	0	0	0
1:00 AM	14	0	11	3	0	0	0	0	0	0	0	0	0	0
2:00 AM	12	0	7	5	0	0	0	0	0	0	0	0	0	0
3:00 AM	29	0	19	9	0	1	0	0	0	0	0	0	0	0
4:00 AM	67	0	34	24	2	4	2	0	0	1	0	0	0	0
5:00 AM	234	0	103	107	2	16	2	0	4	0	0	0	0	0
6:00 AM	419	0	227	124	6	53	3	0	6	0	0	0	0	0
7:00 AM	747	1	453	186	37	55	4	0	9	2	0	0	0	0
8:00 AM	500	0	303	139	5	44	3	0	5	1	0	0	0	0
9:00 AM	552	0	328	156	13	45	1	0	9	0	0	0	0	0
10:00 AM	518	3	314	138	13	40	0	0	10	0	0	0	0	0
11:00 AM	646	2	383	183	12	50	0	0	16	0	0	0	0	0
12:00 PM	719	6	405	228	16	44	1	1	18	0	0	0	0	0
1:00 PM	664	6	387	195	9	55	2	0	9	1	0	0	0	0
2:00 PM	703	3	426	190	17	52	0	0	15	0	0	0	0	0
3:00 PM	781	3	481	202	28	47	2	0	16	0	0	1	0	1
Total	9487	32	5793	2608	202	644	23	1	171	7	1	4	0	1
%		0.3	61.1	27.5	2.1	6.8	0.2	0.0	1.8	0.1	0.0	0.0	0.0	0.0

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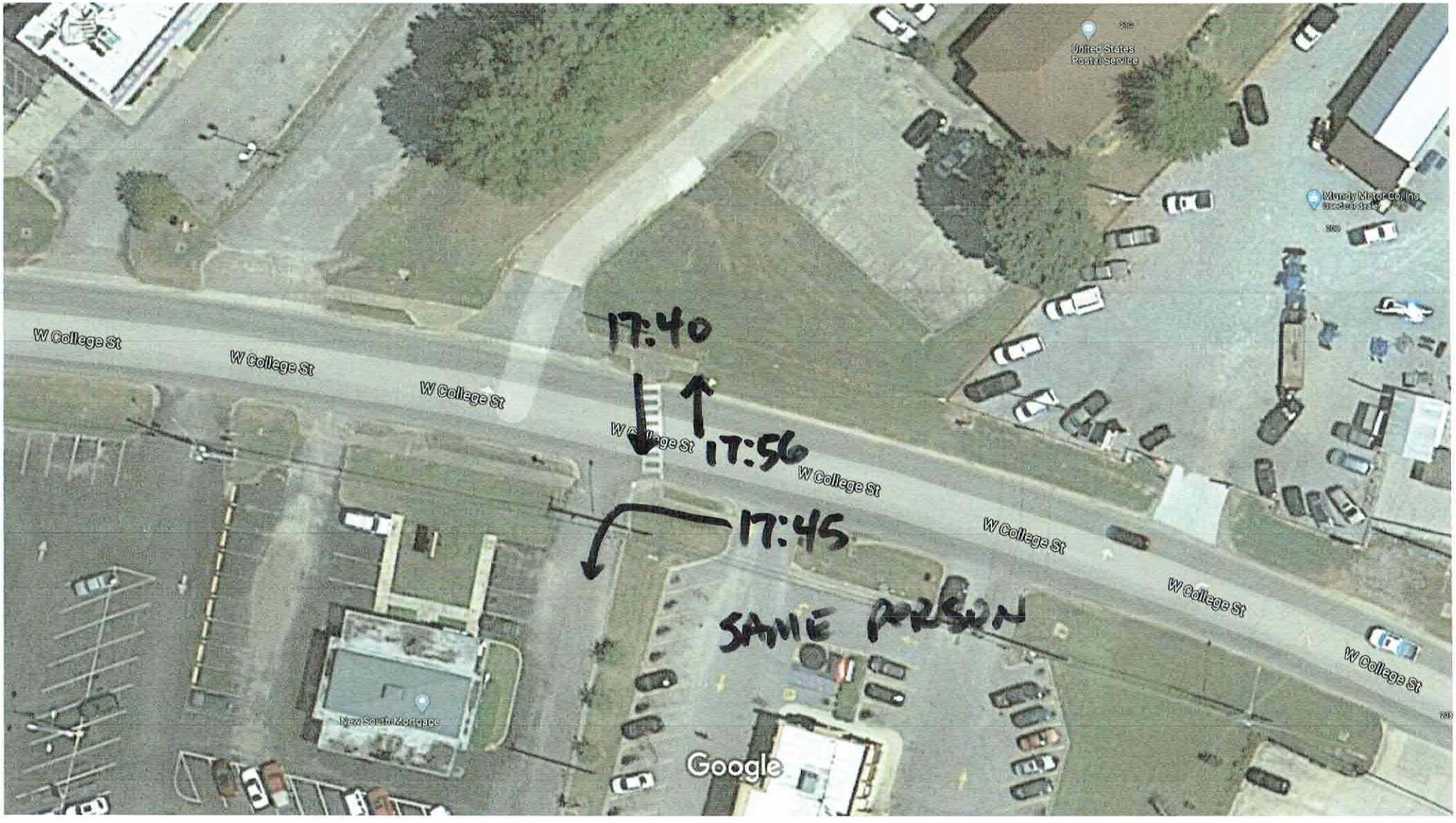

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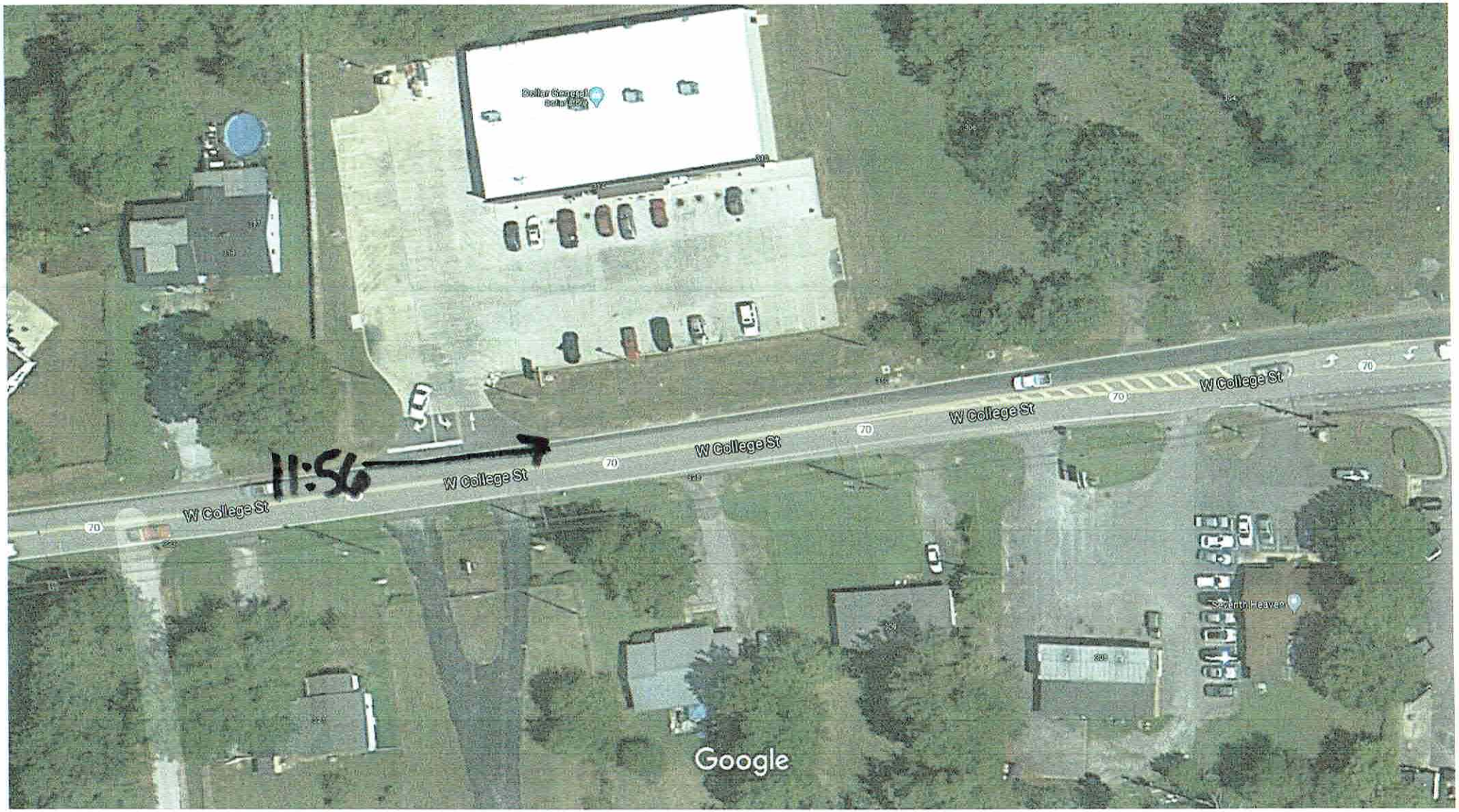

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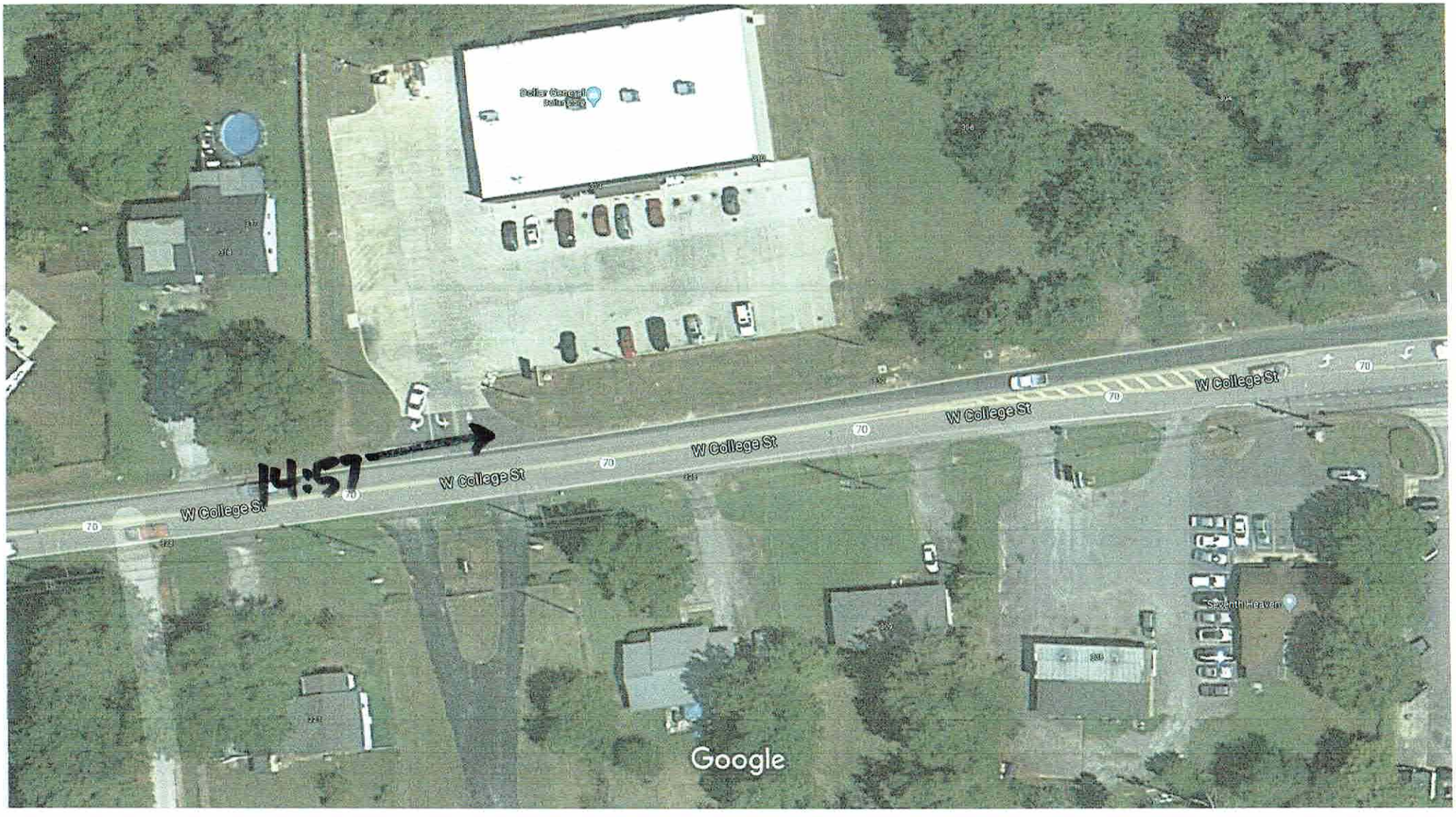

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Appendix C
Intersection Capacity Analysis – Existing Conditions

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	391	520	26	10	12
Future Vol, veh/h	23	391	520	26	10	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	300	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	90	90	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	501	578	29	14	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	607	0	-	0	1137	578
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	559	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	971	-	-	-	223	516
Stage 1	-	-	-	-	561	-
Stage 2	-	-	-	-	572	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	971	-	-	-	214	516
Mov Cap-2 Maneuver	-	-	-	-	214	-
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	572	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	17.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	971	-	-	-	314
HCM Lane V/C Ratio	0.03	-	-	-	0.102
HCM Control Delay (s)	8.8	0	-	-	17.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	341	517	25	13	52
Future Vol, veh/h	47	341	517	25	13	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	93	93	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	437	556	27	17	68

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	583	0	-	0	1127	570
Stage 1	-	-	-	-	570	-
Stage 2	-	-	-	-	557	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	991	-	-	-	226	521
Stage 1	-	-	-	-	566	-
Stage 2	-	-	-	-	574	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	991	-	-	-	208	521
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	521	-
Stage 2	-	-	-	-	574	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	16.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	991	-	-	-	400
HCM Lane V/C Ratio	0.061	-	-	-	0.211
HCM Control Delay (s)	8.9	0	-	-	16.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	221	20	26	304	96	30	100	65	96	100	250
Future Volume (veh/h)	145	221	20	26	304	96	30	100	65	96	100	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	179	273	0	31	366	0	42	139	0	112	116	0
Peak Hour Factor	0.81	0.81	0.81	0.83	0.83	0.83	0.72	0.72	0.72	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	480	758		519	642		318	221		315	280	
Arrive On Green	0.10	0.41	0.00	0.03	0.34	0.00	0.04	0.12	0.00	0.07	0.15	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	0	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	179	273	0	31	366	0	42	139	0	112	116	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	0	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	3.6	5.9	0.0	0.6	9.3	0.0	1.2	4.1	0.0	3.2	3.3	0.0
Cycle Q Clear(g_c), s	3.6	5.9	0.0	0.6	9.3	0.0	1.2	4.1	0.0	3.2	3.3	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	480	758		519	642		318	221		315	280	
V/C Ratio(X)	0.37	0.36		0.06	0.57		0.13	0.63		0.36	0.41	
Avail Cap(c_a), veh/h	769	1412		918	1412		396	1428		335	1428	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.8	12.1	0.0	11.6	15.6	0.0	21.1	24.5	0.0	20.5	22.5	0.0
Incr Delay (d2), s/veh	0.5	0.3	0.0	0.0	0.8	0.0	0.2	2.9	0.0	0.7	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.2	0.0	0.2	3.7	0.0	0.5	1.9	0.0	1.3	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.3	12.4	0.0	11.6	16.4	0.0	21.2	27.4	0.0	21.1	23.4	0.0
LnGrp LOS	B	B		B	B		C	C		C	C	
Approach Vol, veh/h		452	A		397	A		181	A		228	A
Approach Delay, s/veh		12.0			16.0			26.0			22.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.0	29.6	7.5	14.2	10.6	26.0	9.3	12.4
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	6.0	5.0	5.5
Max Green Setting (Gmax), s	15.0	44.0	5.0	44.5	15.0	44.0	5.0	44.5
Max Q Clear Time (g_c+I1), s	2.6	7.9	3.2	5.3	5.6	11.3	5.2	6.1
Green Ext Time (p_c), s	0.0	1.7	0.0	0.7	0.3	2.4	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	595	485	7	44	28
Future Vol, veh/h	8	595	485	7	44	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	300	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	89	89	64	64
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	640	545	8	69	44

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	553	0	-	0	1203	545
Stage 1	-	-	-	-	545	-
Stage 2	-	-	-	-	658	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1017	-	-	-	204	538
Stage 1	-	-	-	-	581	-
Stage 2	-	-	-	-	515	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1017	-	-	-	201	538
Mov Cap-2 Maneuver	-	-	-	-	201	-
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	515	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	28.1
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1017	-	-	-	266
HCM Lane V/C Ratio	0.008	-	-	-	0.423
HCM Control Delay (s)	8.6	0	-	-	28.1
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	2

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	528	507	9	11	26
Future Vol, veh/h	24	528	507	9	11	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	93	93	54	54
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	607	545	10	20	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	555	0	-	0	1213	550
Stage 1	-	-	-	-	550	-
Stage 2	-	-	-	-	663	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1015	-	-	-	201	535
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	512	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1015	-	-	-	193	535
Mov Cap-2 Maneuver	-	-	-	-	193	-
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	512	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	17.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1015	-	-	-	350
HCM Lane V/C Ratio	0.027	-	-	-	0.196
HCM Control Delay (s)	8.6	0	-	-	17.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	305	47	68	301	92	27	111	55	125	135	228
Future Volume (veh/h)	202	305	47	68	301	92	27	111	55	125	135	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	220	332	0	82	363	0	35	144	0	133	144	0
Peak Hour Factor	0.92	0.92	0.92	0.83	0.83	0.83	0.77	0.77	0.77	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	493	715		489	616		303	224		323	309	
Arrive On Green	0.11	0.38	0.00	0.06	0.33	0.00	0.04	0.12	0.00	0.08	0.17	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	0	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	220	332	0	82	363	0	35	144	0	133	144	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	0	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.7	8.1	0.0	1.8	9.8	0.0	1.0	4.5	0.0	3.9	4.2	0.0
Cycle Q Clear(g_c), s	4.7	8.1	0.0	1.8	9.8	0.0	1.0	4.5	0.0	3.9	4.2	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	493	715		489	616		303	224		323	309	
V/C Ratio(X)	0.45	0.46		0.17	0.59		0.12	0.64		0.41	0.47	
Avail Cap(c_a), veh/h	730	1356		819	1356		384	1371		323	1371	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.6	14.1	0.0	12.0	16.9	0.0	22.1	25.5	0.0	21.1	22.9	0.0
Incr Delay (d2), s/veh	0.6	0.5	0.0	0.2	0.9	0.0	0.2	3.1	0.0	0.8	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.1	0.0	0.7	4.0	0.0	0.4	2.1	0.0	1.6	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	14.6	0.0	12.2	17.8	0.0	22.2	28.6	0.0	21.9	24.0	0.0
LnGrp LOS	B	B		B	B		C	C		C	C	
Approach Vol, veh/h		552	A		445	A		179	A		277	A
Approach Delay, s/veh		13.6			16.8			27.3			23.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	29.2	7.2	15.5	11.9	26.0	10.0	12.8
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	6.0	5.0	5.5
Max Green Setting (Gmax), s	15.0	44.0	5.0	44.5	15.0	44.0	5.0	44.5
Max Q Clear Time (g_c+I1), s	3.8	10.1	3.0	6.2	6.7	11.8	5.9	6.5
Green Ext Time (p_c), s	0.1	2.2	0.0	0.8	0.4	2.4	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Appendix D
Turn Lane Warrant Evaluation Worksheets – Existing Conditions

Eastbound AL 70 at McDow Rd
AM Peak Hour

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

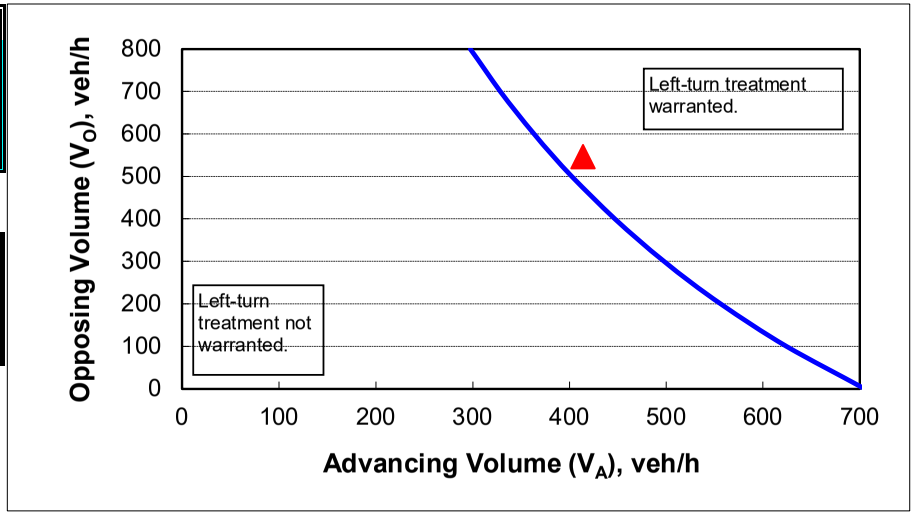
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	43
Percent of left-turns in advancing volume (V_A), %:	6%
Advancing volume (V_A), veh/h:	414
Opposing volume (V_O), veh/h:	546

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	384
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane , s:	1.9

Eastbound AL 70 at McDow Rd
PM Peak Hour

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

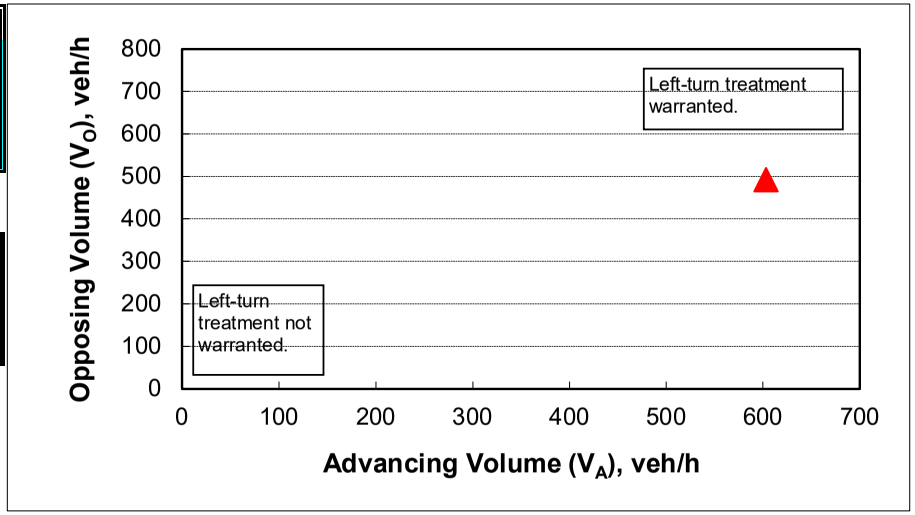
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	43
Percent of left-turns in advancing volume (V_A), %:	1%
Advancing volume (V_A), veh/h:	603
Opposing volume (V_O), veh/h:	492

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	969
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane , s:	1.9

Eastbound AL 70 at Industrial Pkwy
AM Peak Hour

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

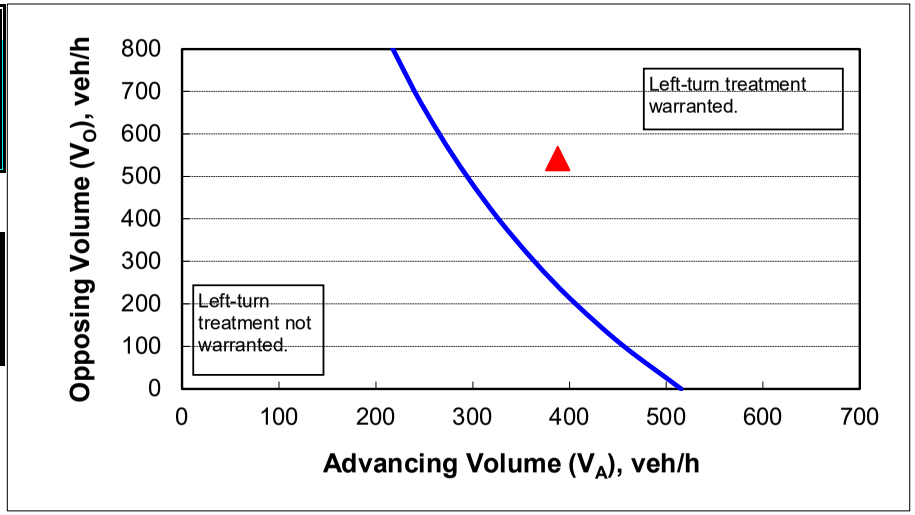
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	43
Percent of left-turns in advancing volume (V_A), %:	12%
Advancing volume (V_A), veh/h:	388
Opposing volume (V_O), veh/h:	542

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	282
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane , s:	1.9

Eastbound AL 70 at Industrial Pkwy
PM Peak Hour

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

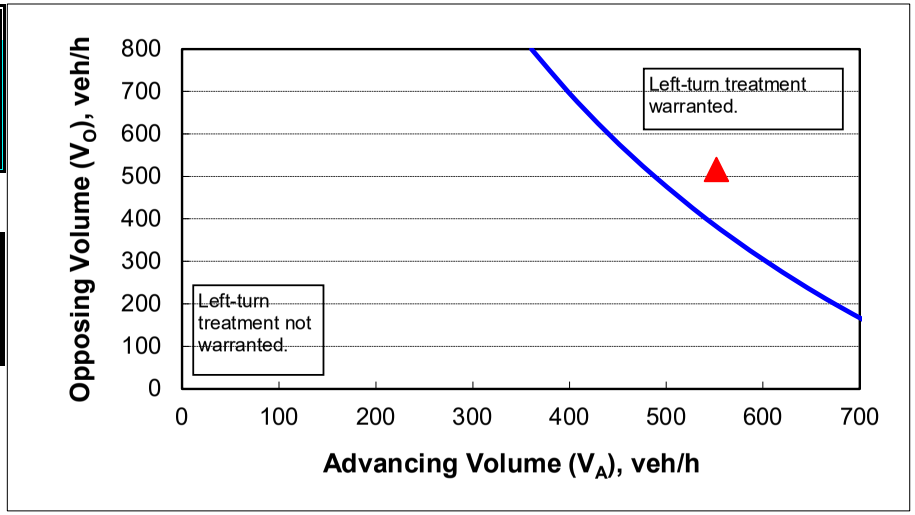
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	43
Percent of left-turns in advancing volume (V_A), %:	4%
Advancing volume (V_A), veh/h:	552
Opposing volume (V_O), veh/h:	516

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	480
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane , s:	1.9

Westbound AL 70 at Industrial Pkwy
AM Peak Hour

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

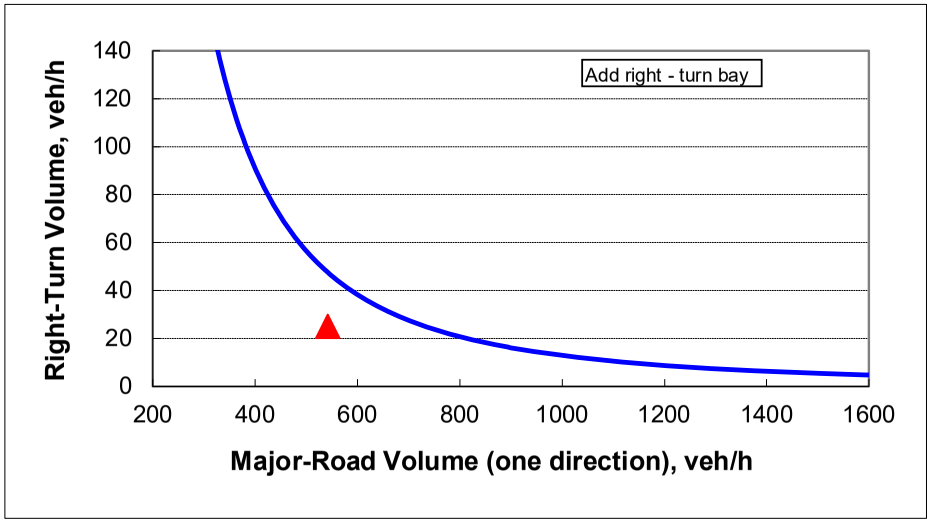
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	43
Major-road volume (one direction), veh/h:	542
Right-turn volume, veh/h:	25

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	48
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Westbound AL 70 at Industrial Pkwy
PM Peak Hour

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

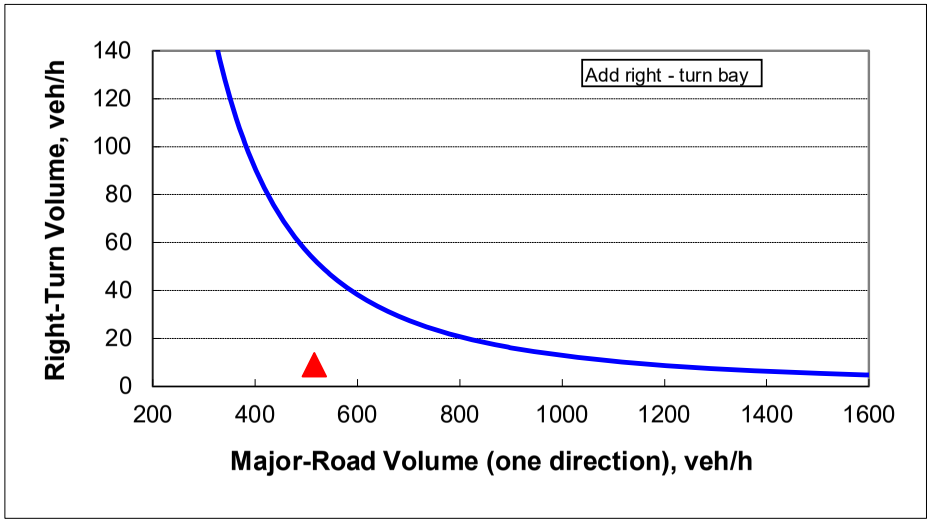
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	43
Major-road volume (one direction), veh/h:	516
Right-turn volume, veh/h:	9

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	53
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Westbound AL 70 at AL 25
AM Peak Hour

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

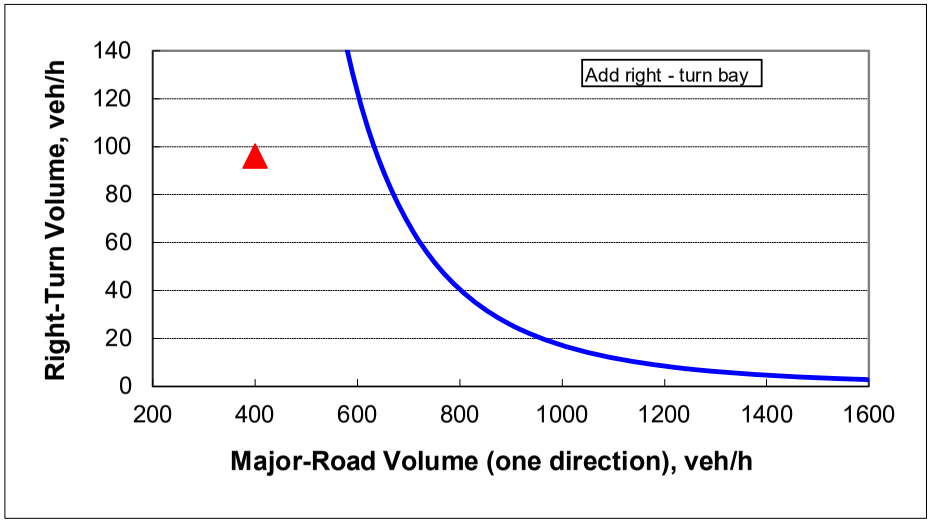
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	34
Major-road volume (one direction), veh/h:	400
Right-turn volume, veh/h:	96

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	586
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Westbound AL 70 at AL 25
PM Peak Hour

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

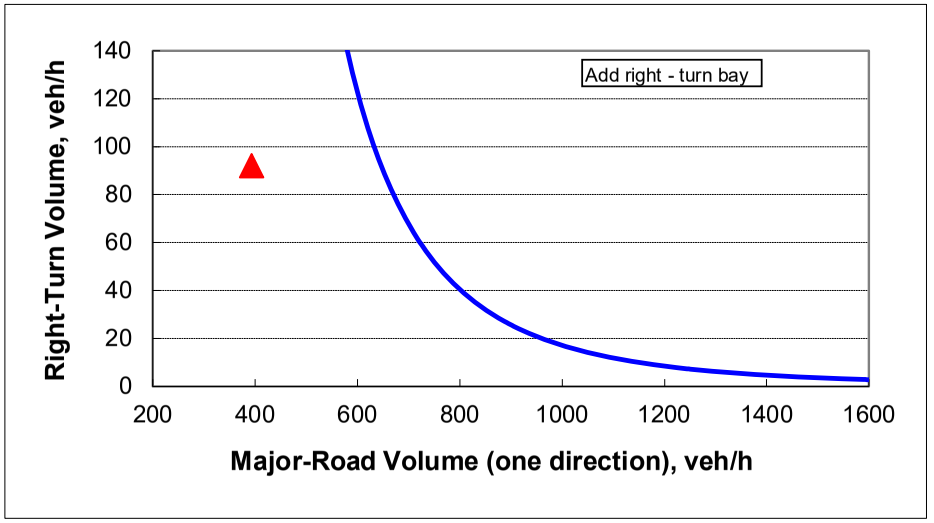
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	34
Major-road volume (one direction), veh/h:	393
Right-turn volume, veh/h:	92

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	627
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Appendix E
ALDOT Roadway Capacities and Levels of Service

ALDOT
Roadway Capacities
and
Levels of Service

FUNCTIONAL CLASSIFICATION	# OF LANES	LOS A	LOS B	LOS C	LOS D	LOS E	LOS F
Freeway	4	23,800	34,000	42,160	51,000	68,000	>68,000
	6	35,700	51,000	63,240	76,500	102,000	>102,000
	8	47,600	68,000	84,320	102,000	136,000	>136,000
	10	59,500	85,000	105,400	127,500	170,000	>170,000
Expressway	4	17,500	25,000	31,000	37,500	50,000	>50,000
	6	26,250	37,500	46,500	56,250	75,000	>75,000
	8	35,000	50,000	62,000	75,000	100,000	>100,000
Divided Principal Arterial	2	7,700	11,000	13,640	16,500	22,000	>22,000
	4	11,865	16,950	21,018	25,425	33,900	>33,900
	6	17,500	25,000	31,000	37,500	50,000	>50,000
	8	25,760	36,800	45,632	55,200	73,600	>73,600
Undivided Principal Arterial	2	6,230	8,900	11,036	13,350	17,800	>17,800
	4	10,850	15,500	19,220	23,250	31,000	>31,000
	6	16,030	22,900	28,396	34,350	45,800	>45,800
	8	22,085	31,550	39,122	47,325	63,100	>63,100
Divided Minor Arterial	2	7,350	10,500	13,020	15,750	21,000	21,000
	4	11,165	15,950	19,778	23,925	31,900	31,900
	6	15,960	22,800	28,272	34,200	45,600	45,600
Undivided Minor Arterial	2	6,230	8,900	11,036	13,350	17,800	17,800
	4	9,590	13,700	16,988	20,550	27,400	27,400
Divided Major Collector	2	7,280	10,400	12,896	15,600	20,800	>20,800
	4	9,975	14,250	17,670	21,375	28,500	>28,500
	6	14,700	21,000	26,040	31,500	42,000	>42,000
Undivided Major Collector	2	5,810	8,300	10,292	12,450	16,600	>16,600
	4	9,170	13,100	16,244	19,650	26,200	>26,200
	6	13,545	19,350	23,994	29,025	38,700	>38,700
Divided Minor Collector	2	6,930	9,900	12,276	14,850	19,800	>19,800
	4	9,485	13,550	16,802	20,325	27,100	>27,100
	6	13,965	19,950	24,738	29,925	39,900	>39,900
Undivided Minor Collector	2	5,215	7,450	9,238	11,175	14,900	>14,900
	4	8,260	11,800	14,632	17,700	23,600	>23,600
	6	11,900	17,000	21,080	25,500	34,000	>34,000

Appendix F
Turn Lane Warrant Evaluation Worksheets – Future 2031 Conditions

Westbound AL 70 at Industrial Pkwy
AM Peak Hour - Future 2031 Conditions

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

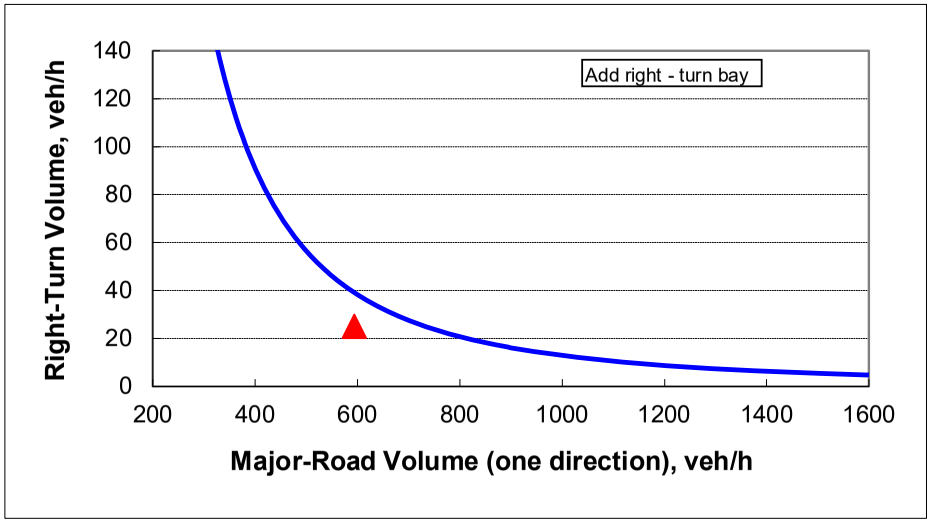
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	43
Major-road volume (one direction), veh/h:	594
Right-turn volume, veh/h:	25

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	39
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Westbound AL 70 at Industrial Pkwy
PM Peak Hour - Future 2031 Conditions

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

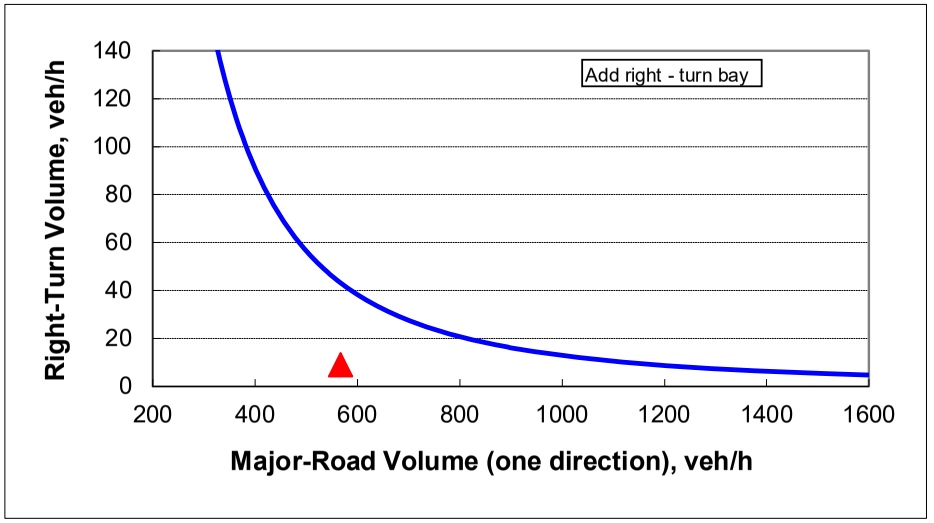
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	43
Major-road volume (one direction), veh/h:	567
Right-turn volume, veh/h:	9

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	43
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Westbound AL 70 at AL 25
AM Peak Hour - Future 2031 Conditions

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

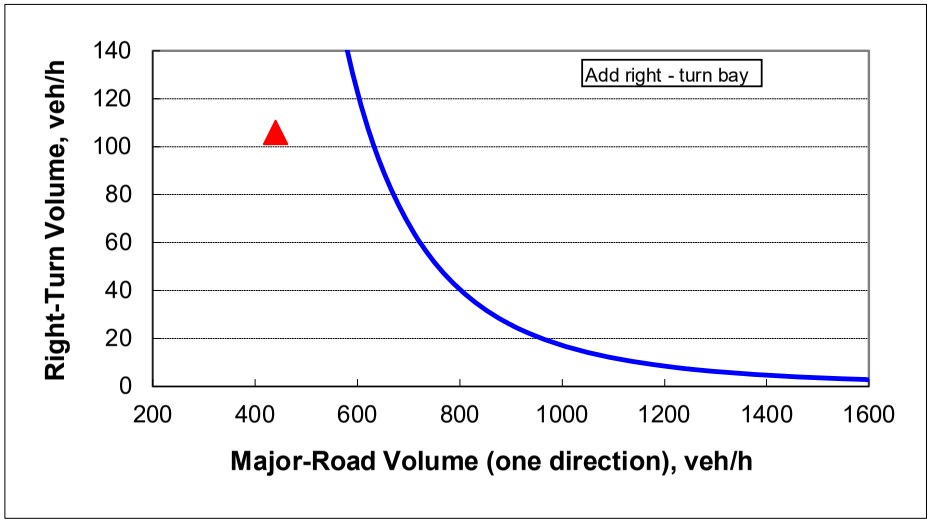
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	34
Major-road volume (one direction), veh/h:	440
Right-turn volume, veh/h:	106

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	405
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Westbound AL 70 at AL 25
PM Peak Hour - Future 2031 Conditions

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

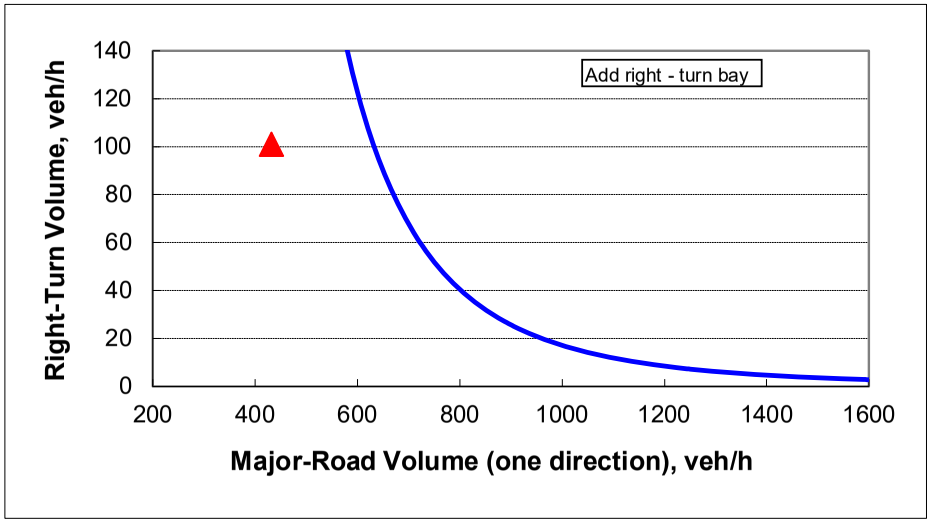
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	34
Major-road volume (one direction), veh/h:	432
Right-turn volume, veh/h:	101

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	435
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Appendix G
Intersection Capacity Analysis – Future 2031 Conditions

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	391	520	26	10	12
Future Vol, veh/h	23	391	520	26	10	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	300	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	90	90	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	551	636	29	14	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	665	0	-	0	1245	636
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	609	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	924	-	-	-	192	478
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	543	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	924	-	-	-	186	478
Mov Cap-2 Maneuver	-	-	-	-	186	-
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	543	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	19.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	924	-	-	-	279
HCM Lane V/C Ratio	0.032	-	-	-	0.114
HCM Control Delay (s)	9	-	-	-	19.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

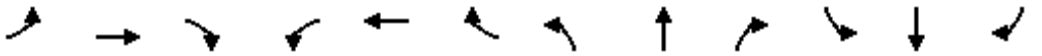
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	341	517	25	13	52
Future Vol, veh/h	47	341	517	25	13	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	93	93	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	481	612	27	17	68

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	639	0	-	0	1227	626
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	601	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	945	-	-	-	197	484
Stage 1	-	-	-	-	533	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	945	-	-	-	185	484
Mov Cap-2 Maneuver	-	-	-	-	185	-
Stage 1	-	-	-	-	499	-
Stage 2	-	-	-	-	547	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	17.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	945	-	-	-	366
HCM Lane V/C Ratio	0.064	-	-	-	0.231
HCM Control Delay (s)	9.1	-	-	-	17.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	221	20	26	304	96	30	100	65	96	100	250
Future Volume (veh/h)	145	221	20	26	304	96	30	100	65	96	100	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	197	300	0	34	403	0	46	153	0	123	128	0
Peak Hour Factor	0.81	0.81	0.81	0.83	0.83	0.83	0.72	0.72	0.72	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	451	748		492	623		325	235		322	302	
Arrive On Green	0.10	0.40	0.00	0.04	0.33	0.00	0.04	0.13	0.00	0.08	0.16	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	0	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	197	300	0	34	403	0	46	153	0	123	128	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	0	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.1	6.9	0.0	0.7	11.0	0.0	1.3	4.7	0.0	3.5	3.7	0.0
Cycle Q Clear(g_c), s	4.1	6.9	0.0	0.7	11.0	0.0	1.3	4.7	0.0	3.5	3.7	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	451	748		492	623		325	235		322	302	
V/C Ratio(X)	0.44	0.40		0.07	0.65		0.14	0.65		0.38	0.42	
Avail Cap(c_a), veh/h	712	1370		873	1370		394	1386		327	1386	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.6	12.9	0.0	12.3	17.0	0.0	21.2	25.0	0.0	20.5	22.7	0.0
Incr Delay (d2), s/veh	0.7	0.3	0.0	0.1	1.1	0.0	0.2	3.0	0.0	0.7	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.6	0.0	0.3	4.4	0.0	0.5	2.1	0.0	1.4	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	13.2	0.0	12.3	18.2	0.0	21.4	28.0	0.0	21.3	23.6	0.0
LnGrp LOS	B	B		B	B		C	C		C	C	
Approach Vol, veh/h		497	A		437	A		199	A		251	A
Approach Delay, s/veh		12.8			17.7			26.5			22.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	30.0	7.7	15.2	11.2	26.0	9.8	13.0
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	6.0	5.0	5.5
Max Green Setting (Gmax), s	15.0	44.0	5.0	44.5	15.0	44.0	5.0	44.5
Max Q Clear Time (g_c+I1), s	2.7	8.9	3.3	5.7	6.1	13.0	5.5	6.7
Green Ext Time (p_c), s	0.0	1.9	0.0	0.7	0.3	2.7	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	595	485	7	44	28
Future Vol, veh/h	8	595	485	7	44	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	300	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	89	89	64	64
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	704	599	8	69	44

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	607	0	-	0	1321	599
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	722	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	971	-	-	-	173	502
Stage 1	-	-	-	-	549	-
Stage 2	-	-	-	-	481	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	971	-	-	-	171	502
Mov Cap-2 Maneuver	-	-	-	-	171	-
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	481	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	34.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	971	-	-	-	230
HCM Lane V/C Ratio	0.009	-	-	-	0.489
HCM Control Delay (s)	8.7	-	-	-	34.8
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	2.5

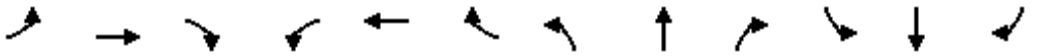
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	528	507	9	11	26
Future Vol, veh/h	24	528	507	9	11	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	93	93	54	54
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	668	600	10	20	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	610	0	-	0	1329	605
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	724	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	969	-	-	-	171	498
Stage 1	-	-	-	-	545	-
Stage 2	-	-	-	-	480	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	969	-	-	-	166	498
Mov Cap-2 Maneuver	-	-	-	-	166	-
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	480	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	19.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	969	-	-	-	312
HCM Lane V/C Ratio	0.028	-	-	-	0.22
HCM Control Delay (s)	8.8	-	-	-	19.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	305	47	68	301	92	27	111	55	125	135	228
Future Volume (veh/h)	202	305	47	68	301	92	27	111	55	125	135	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	242	365	0	90	399	0	39	159	0	146	158	0
Peak Hour Factor	0.92	0.92	0.92	0.83	0.83	0.83	0.77	0.77	0.77	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	471	713		464	603		300	240		317	316	
Arrive On Green	0.12	0.38	0.00	0.06	0.32	0.00	0.04	0.13	0.00	0.08	0.17	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	0	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	242	365	0	90	399	0	39	159	0	146	158	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	0	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	5.3	9.3	0.0	2.0	11.4	0.0	1.2	5.0	0.0	4.4	4.8	0.0
Cycle Q Clear(g_c), s	5.3	9.3	0.0	2.0	11.4	0.0	1.2	5.0	0.0	4.4	4.8	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	471	713		464	603		300	240		317	316	
V/C Ratio(X)	0.51	0.51		0.19	0.66		0.13	0.66		0.46	0.50	
Avail Cap(c_a), veh/h	683	1326		782	1326		373	1341		317	1341	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.2	14.8	0.0	12.6	18.1	0.0	22.0	25.8	0.0	21.4	23.4	0.0
Incr Delay (d2), s/veh	0.9	0.6	0.0	0.2	1.3	0.0	0.2	3.1	0.0	1.0	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.6	0.0	0.8	4.7	0.0	0.5	2.3	0.0	1.8	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	15.3	0.0	12.8	19.4	0.0	22.2	28.9	0.0	22.4	24.6	0.0
LnGrp LOS	B	B		B	B		C	C		C	C	
Approach Vol, veh/h		607	A		489	A		198	A		304	A
Approach Delay, s/veh		14.4			18.2			27.6			23.6	
Approach LOS		B			B			C			C	

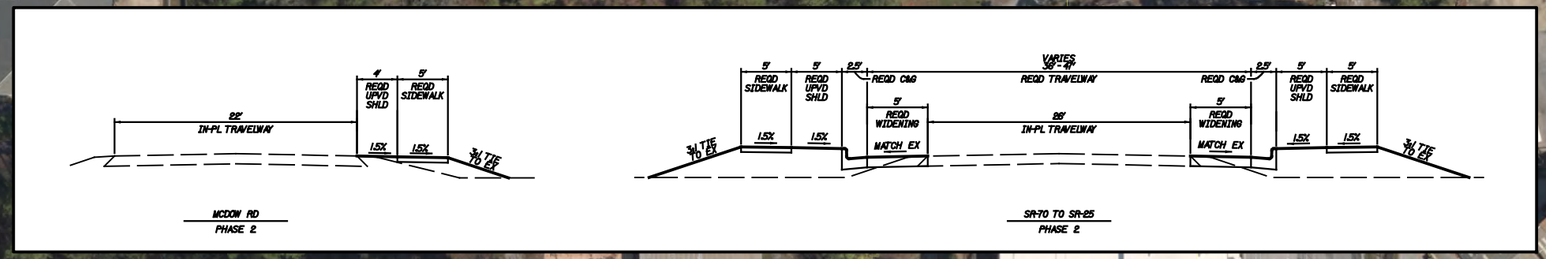
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	29.7	7.4	16.0	12.6	26.0	10.0	13.4
Change Period (Y+Rc), s	5.0	6.0	5.0	5.5	5.0	6.0	5.0	5.5
Max Green Setting (Gmax), s	15.0	44.0	5.0	44.5	15.0	44.0	5.0	44.5
Max Q Clear Time (g_c+I1), s	4.0	11.3	3.2	6.8	7.3	13.4	6.4	7.0
Green Ext Time (p_c), s	0.1	2.4	0.0	0.9	0.4	2.6	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Appendix B


4'
REQD UPVD SHLD
5'
REQD SIDEWALK
22'
IN-PL TRAVELWAY
1.5%
1.5%
3:1 TIE TO EX
MCDOW RD
PHASE 2
5'
REQD SIDEWALK
5'
REQD UPVD SHLD
2.5'
REQD CMB
VARIES 36'-41'
REQD TRAVELWAY
5'
REQD WIDENING
MATCH EX
26'
IN-PL TRAVELWAY
SR-70 TO SR-25
PHASE 2

REQD 5' SW
MCDOW RD
INDUSTRIAL PKWY
W11-2
W16-7p
AHEAD
100' TURN LANE
100' TAPER
SR-70
REQD 2' PVD SHLD
100' TRANSITION
100' TAPER
100' TURN LANE
REQD 5' SW
REQD 5' SW

PHASE 2 PHASE 1

NOTE: PHASE 2 DRAWINGS ARE APPROXIMATE
TCE'S TO BE DETERMINED

SR-25

21-7-28-2-001-041.000
MADDOX WALTER C
5481 CALDWELL MILL RD
BIRMINGHAM, AL 35242

21-7-28-2-001-040.000
MADDOX WALTER C
5481 CALDWELL MILL RD
BIRMINGHAM, AL 35242

21-7-28-2-001-042.000
NATIONAL RETAIL PROPERTIES
450 SOUTH ORANGE AVENUE
ORLANDO, FL 32801

21-7-28-2-001-048.000
O REILY AUTOMOTIVE STORES INC
PO BOX 9167
SPRINGFIELD, MO 65801

21-7-28-1-001-039.006
FIRST US BANK
4720 HWY 31
CALERA, AL 35040

21-7-28-1-001-046.006
FIRST US BANK
4720 HWY 31
CALERA, AL 35040

21-7-28-1-001-049.000
COLUMBIANA PROPERTIES LLC
PO BOX 894
COLUMBIANA, AL 35051

21-7-28-2-001-043.000
DIS 4666 AL LLC, ETON #4666
DR DRIVE
WOODSTOCK, GA 30189

21-7-28-2-001-044.000
MCDONALDS CORPORATION
PO BOX 182571
COLUMBUS, OH 43218

21-7-28-1-001-048.000
COLUMBIANA PROPERTIES LLC
PO BOX 894
COLUMBIANA, AL 35051

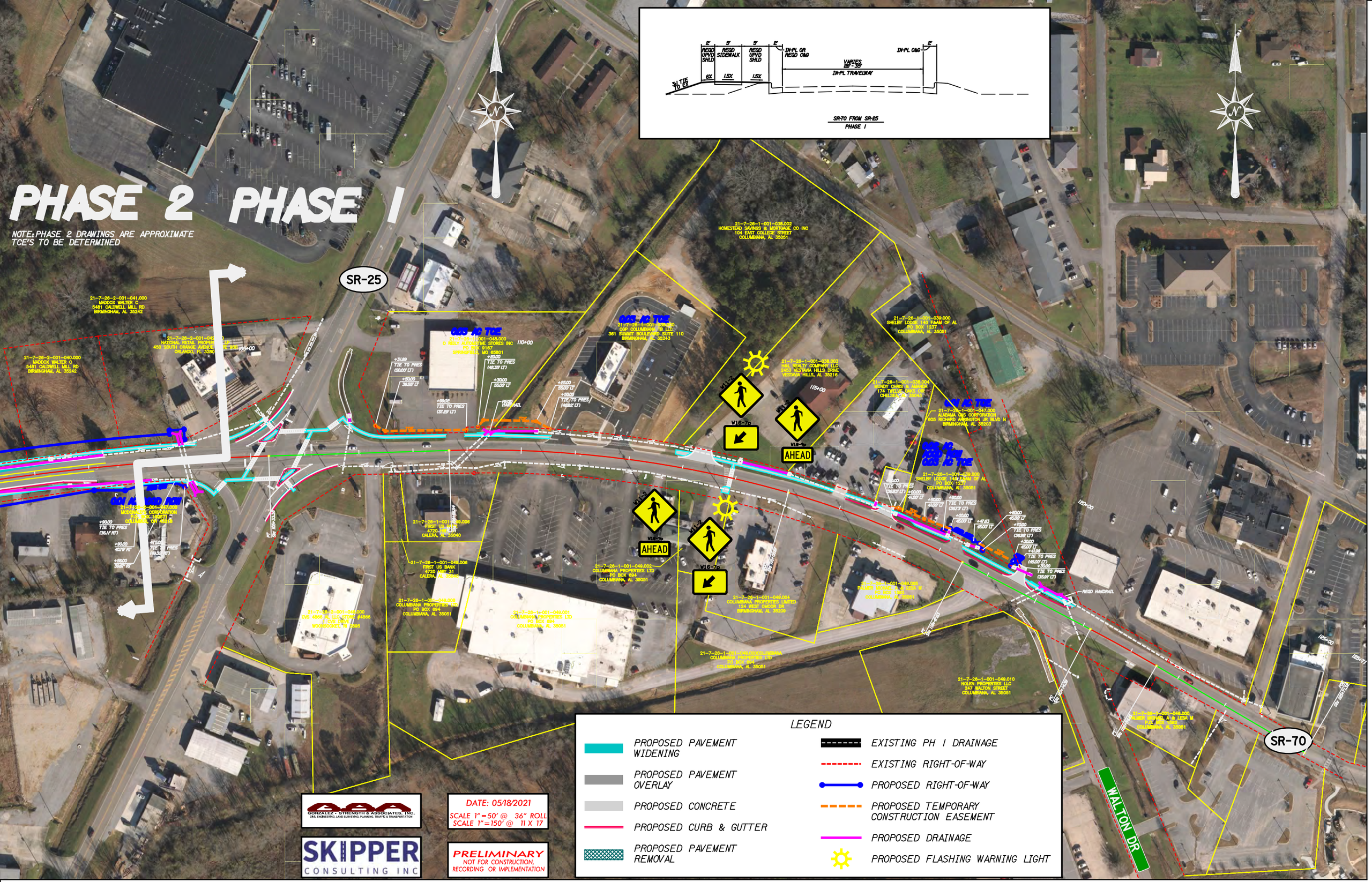
100+00
105+00
110+00

GONZALEZ • STRENGTH & ASSOCIATES, INC.
CIVIL ENGINEERING, LAND SURVEYING, PLANNING, TRAFFIC & TRANSPORTATION

SKIPPER CONSULTING INC

DATE: 05/18/2021
SCALE 1"=50' @ 36" ROLL
SCALE 1"=150' @ 11 X 17

PRELIMINARY
NOT FOR CONSTRUCTION,
RECORDING OR IMPLEMENTATION


PHASE 2
PHASE 1
NOTE: PHASE 2 DRAWINGS ARE APPROXIMATE
TCE'S TO BE DETERMINED
SR-25
SR-70
WALTON DR
2' REQD UPVD SHLD
5' REQD SIDEWALK
5' REQD UPVD SHLD
2' IN-PL OR REQD C&G
IN-PL C&G
VARIES 25'-35' IN-PL TRAVELWAY
3:1 TIE TO EX
6X
1.5X
1.5X
SR-70 FROM SR-25
PHASE 1
LEGEND
PROPOSED PAVEMENT WIDENING
PROPOSED PAVEMENT OVERLAY
PROPOSED CONCRETE
PROPOSED CURB & GUTTER
PROPOSED PAVEMENT REMOVAL
EXISTING PH I DRAINAGE
EXISTING RIGHT-OF-WAY
PROPOSED RIGHT-OF-WAY
PROPOSED TEMPORARY CONSTRUCTION EASEMENT
PROPOSED DRAINAGE
PROPOSED FLASHING WARNING LIGHT
AHEAD
GONZALEZ • STRENGTH & ASSOCIATES, INC.
SKIPPER CONSULTING INC
DATE: 05/18/2021
SCALE 1"=50' @ 36" ROLL
SCALE 1"=150' @ 11 X 17
PRELIMINARY
NOT FOR CONSTRUCTION, RECORDING OR IMPLEMENTATION

Appendix C

Preliminary Cost Estimate for SR-70 from SR-25 to Walton Street

Estimate 20-0391

Estimated Cost:$590,563.95

Contingency: 20.00%

Estimated Total: $708,676.74

0.03 AC ACQD ROW @ $653,400/AC = $19,602
0.10 AC TCE @ $435,600/AC = $43,560
TOTAL = $771,840

Base Date: 05/18/21

Spec Year: 18

Unit System: E

Work Type: Roadway Widening, Add'l Lanes, Pass Lane

Highway Type:

Urban/Rural Type: BIRMINGHAM

Season:

County: SHELBY

Latitude of Midpoint: 0

Longitude of Midpoint: 0

District:

Federal Project Number:

State Project Number:

Line #	Item Number / Description / *Supplemental Description*	Quantity	Units	Unit Price	Extension
Group 0001: Initial Group					
0005	201A002 Clearing And Grubbing (Maximum Allowable Bid $	1.000	LS	$4,000.00000	$4,000.00
0008	206C000 Removing Concrete Sidewalk	72.000	SQYD	$24.66579	$1,775.94
0009	206C002 Removing Concrete Slope Paving	33.000	SQYD	$50.25715	$1,658.49
0010	206D003 Removing Curb And Gutter	328.000	LF	$30.00000	$9,840.00
0011	206E001 Removing Inlets	1.000	Each	$2,500.00000	$2,500.00
0012	210A000 Unclassified Excavation	312.000	CUYD	$40.00000	$12,480.00
0013	210D000 Borrow Excavation	924.000	CUYD	$50.00000	$46,200.00
0014	424B284 Superpave Bituminous Concrete Upper Binder Layer, Patching, 3/4" Maximum Aggregate Size Mix, ESAL Range E	58.000	Ton	$250.00000	$14,500.00
0015	502A000 Steel Reinforcement	2,745.000	LB	$1.80922	$4,966.31
0016	517D000 Sidewalk Handrail	127.000	LF	$200.00000	$25,400.00
0017	524B011 Culvert Concrete Extension (Cast In Place)	16.000	CUYD	$1,000.00000	$16,000.00
0018	530B004 44" Span, 27" Rise Roadway Pipe (Class 3 R.C.)	12.000	LF	$350.00000	$4,200.00
0019	530B007 65" Span, 40" Rise Roadway Pipe (Class 3 R.C.)	14.000	LF	$500.00000	$7,000.00
0020	530B008 73" Span, 45" Rise Roadway Pipe (Class 3 R.C.)	10.000	LF	$750.00000	$7,500.00
0021	533A098 18" Storm Sewer Pipe (Class 3 R.C.)	166.000	LF	$125.00000	$20,750.00
0022	533A099 24" Storm Sewer Pipe (Class 3 R.C.)	165.000	LF	$175.00000	$28,875.00

Line #	Item Number / Description / *Supplemental Description*	Quantity	Units	Unit Price	Extension
0023	533A103 48" Storm Sewer Pipe (Class 3 R.C.)	16.000	LF	$350.00000	$5,600.00
0024	600A000 Mobilization	1.000	LS	$49,400.00000	$49,400.00
0025	614A000 Slope Paving	46.000	CUYD	$500.00000	$23,000.00
0026	618A000 Concrete Sidewalk, 4" Thick	843.000	SQYD	$75.00000	$63,225.00
0027	618B003 Concrete Driveway, 6" Thick (Includes Wire Mesh)	232.000	SQYD	$85.00000	$19,720.00
0028	619A002 18" Roadway Pipe End Treatment, Class 1	3.000	Each	$1,000.00000	$3,000.00
0029	619B019 44" Span, 27" Rise Roadway Pipe End Treatment, Class 1	1.000	Each	$2,500.00000	$2,500.00
0030	619B273 73" Span, 45" Rise Roadway Pipe End Treatment, Class 1 (Doub le Line)	1.000	Each	$7,000.00000	$7,000.00
0031	619B287 65" Span, 40" Rise Roadway Pipe End Treatment, Class 2 (Doub le Line)	1.000	Each	$7,000.00000	$7,000.00
0032	621A011 Junction Boxes, Type 1 Or 1P	8.000	Each	$5,000.00000	$40,000.00
0033	621A019 Junction Boxes, Type 1 Or 2P	1.000	Each	$5,000.00000	$5,000.00
0035	621C027 Inlets, Type C	4.000	Each	$3,500.00000	$14,000.00
0036	623B000 Concrete Curb, Type N	208.000	LF	$45.00000	$9,360.00
0037	623C003 Combination Curb & Gutter, Type C (Modified)	682.000	LF	$35.00000	$23,870.00
0038	640L009 Underground Utility Adjustment (Sewerage)	1.000	Each	$5,000.00000	$5,000.00
0039	650A000 Topsoil	198.000	CUYD	$50.00000	$9,900.00
0040	654A000 Solid Sodding	1,800.000	SQYD	$5.00000	$9,000.00

Line #	Item Number / Description / *Supplemental Description*	Quantity	Units	Unit Price	Extension
0041	665A000 Temporary Seeding	2.000	Acre	$750.00000	$1,500.00
0042	665B001 Temporary Mulching	6.000	Ton	$325.68659	$1,954.12
0043	665G000 Sand Bags	50.000	Each	$3.46617	$173.31
0044	665J002 Silt Fence	2,000.000	LF	$5.00000	$10,000.00
0045	665O001 Silt Fence Removal	2,000.000	LF	$1.00000	$2,000.00
0046	665P005 Inlet Protection, Stage 3 Or 4	10.000	Each	$367.21773	$3,672.18
0047	665Q002 Wattle	200.000	LF	$10.00000	$2,000.00
0048	680A001 Geometric Controls	1.000	LS	$6,700.00000	$6,700.00
0049	698A000 Construction Fuel (Maximum Bid Limited to $	1.000	LS	$25,500.00000	$25,500.00
0050	701G249 Solid White, Class 2, Type A Traffic Stripe	221.000	LF	$2.79232	$617.10
0051	703A002 Traffic Control Markings, Class 2, Type A	1,625.000	SQFT	$4.17866	$6,790.32
0052	710A126 Class 8, Aluminum Flat Sign Panels 0.08" Thick Or Steel Flat Sign Panels 14 Gauge (Type IX Background)	44.000	SQFT	$20.71124	$911.29
0053	730Y600 Furnishing And Installing Pedestal Pole And Foundation With LED Pedestrian Signal Head 4 Signals	1.000	LS	$20,000.00000	$20,000.00
0054	740B000 Construction Signs	45.000	SQFT	$35.00000	$1,575.00
0055	740D000 Channelizing Drums	50.000	Each	$50.00000	$2,500.00
0056	740I002 Warning Lights, Type B	2.000	Each	$224.94252	$449.89

Line #	Item Number	Quantity	Units	Unit Price	Extension
	Description ***Supplemental Description***				

Total for Group 0001:$590,563.95

Appendix D

form revised: 3/21/2011

SUMMARY OF ESTIMATED COST

PROJECT NO.: 20-0391
COUNTY: SHELBY
ALTERNATE NO.: PHASE 2
WORK DESCRIPTION: SIDEWALK IMPROVEMENTS ALONG MCDOW RD AND SR-70 TO SR-25
DATE PREPARED: 05/12/21
DATE PMS REVISED:
ALDOT OVERHEAD PERCENTAGE: 13.63%

ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	AMOUNT
ROADWAY:				
NOTE: ALL BASE AND PAVE COSTS ARE FOR BITUMINOUS PAVEMENT ONLY.				
BASE AND PAVEMENT	SY	4,415	90.00	397,350
PAVEMENT OVERLAY	SY	13,215	15.00	198,225
CURB & GUTTER	LF	7,790	15.00	116,850
SIDEWALK	SY	4,780	75.00	358,500
ROADWAY PIPE	LF	4,300	150.00	645,000
INLET	EA	30	5000.00	150,000
PIPE END TREATMENT	EA	9	2000.00	18,000
CULVERT EXTENSION	CY	15	1100.00	16,500
ROADWAY SUBTOTAL				$1,070,925
CONTINGENCIES (40 PERCENT)				$428,370
ROADWAY TOTAL				$1,499,295
ENGINEERING INSPECTION (15 PERCENT)				$224,894
ALDOT OVERHEAD (INPUT IN TITLE BLOCK)		13.63%		$235,007
CONSTRUCTION COST TOTAL (INPUT FOR CPMS)				$1,959,196
ACQUIRED RIGHT-OF-WAY/TCE COSTS	SF	94,880	15.00	$1,423,200
UTILITY RELOCATION				UNKNOWN
GRAND TOTAL				**$3,382,400**