ADDENDUM #1 ACKNOWLEDGEMENT

The bidder or proposer must complete and sign this form and submit it with the bid or proposal.

Solicitation – IFQ 26-002 Quick Win Project
Organization – North Fulton Community Improvement District (True North 400 CID)
Questions and Answers

The undersigned hereby acknowledges receipt of Addendum #1 and has taken the information contained therein into full consideration in the formulation of the bid or proposal. Failure to acknowledge receipt of this addendum may be cause for rejection of the proposal.

Company Name: _____

Printed Name: _____

Title: _____

Signature: _____

ADDENDUM #1

Questions and Answers

Solicitation – IFQ 26-002 Quick Win Project

Organization – North Fulton Community Improvement District (True North 400 CID)

No	Question/Answer
Q1	**Question: ICE** Are you able to provide the ICE documents submitted to GDOT? It does not appear to be in the IFQ along with the Traffic Memo. **Answer:** As part of Addendum #1 – The ICE document is attached.
Q2	**Question: GDOT Comment** Has GDOT provided comments regarding the Traffic Memo only showing that Warrant 2 is met? **Answer:** As part of Addendum #1 – GDOT District 7 completed an initial review of the traffic engineering study and noted that the intersection did not satisfy Warrants 1 and 7. GDOT Policy 6785-1 states 'It is the Department's preference that only signals that meet Warrants 1 (Eight-Hour Vehicular Volume) or 7 (Crash Experience) in the MUTCD at 100% be installed; however, other warrants may be evaluated if engineering judgment determines that other applications are appropriate.' The CID is continuing to coordinate with GDOT.
Q3	**Question: Adjacent Businesses** Have there been any discussions with adjacent businesses regarding potential access changes with the proposed signalization? If so, would the driveway design be expected to fall within the scope of this project? **Answer**: As part of Addendum #1 – There have not been any such discussions, and this is not part of the scope at this time.
Q4	**Question: Task 1** Should Task 1, under Attachment 3, include cost for counts, signal warrant, traffic memo, and ICE? **Answer:** As part of Addendum #1 – All of these have been completed, but the design consultant will be expected to modify warrant analysis, memo and ICE documentation as necessary per any comments from GDOT.
Q5	**Question: Section 11.1, Sub-Section F of the Sample Contract** In Section 11.1, Sub-Section F of the Sample Contract, it is requested that a $5,000,000 umbrella policy extend over the Professional Liability Insurance.

	Standard umbrella coverage does not extend over Professional Liability. Is your intent to have us carry more than the $1,000,000 Professional Liability coverage required in Section E? **Answer**: As part of Addendum #1 – Correct the language to require a $5,000,000.00 Professional Liability Insurance policy, as well as a $5,000,000.00 Umbrella over CGL and Auto Liability.

GDOT INTERSECTION CONTROL EVALUATION (ICE) TOOL

ICE Version 2.3| Revised 11/13/2023

GDOT PI#:	N/A	Request By:	True North 400
County:	Fulton	GDOT District:	7 - Metro Atlanta
Major Road:	SR 9	Road Class:	Principal Arterial
Speed Limit:	45 mph		
Crossing Road:	Mansell Place	Road Class:	Local
Speed Limit:	< 35 mph		
Major Rd Direction:	North/South	Area Type:	Urban
Intersection Control:	Conventional (Minor Stop)	Project ID:	-
Prepared By:	Kimley-Horn	Date:	3/3/2026
Project Purpose:	Improve intersection operations and safety by addressing side-street delay, inadequate gaps in major-street traffic, and angle crash trends		

Existing Data Year:	2025
Project Opening Year:	2030
Project Design Year:	2050
Annual Growth Rate:	0.5%
K Factor*:	8%

* K Factor = Proportion of average annual daily traffic occurring in the highest one hour of the day

APPROACH SPLITS:

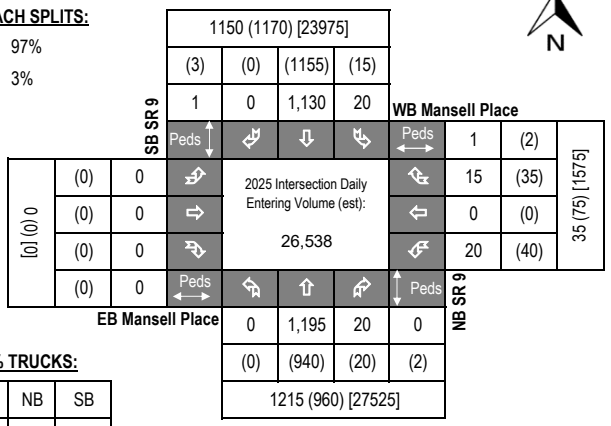
SR 9: 97%

Mansell Place: 3%

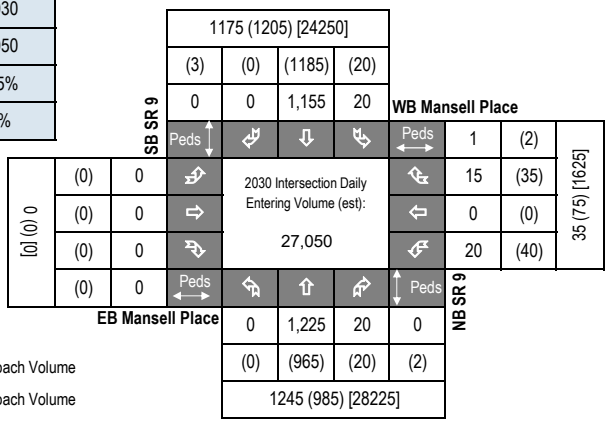
PEAK HR % TRUCKS:

EB	WB	NB	SB
1%	12%	3%	4%

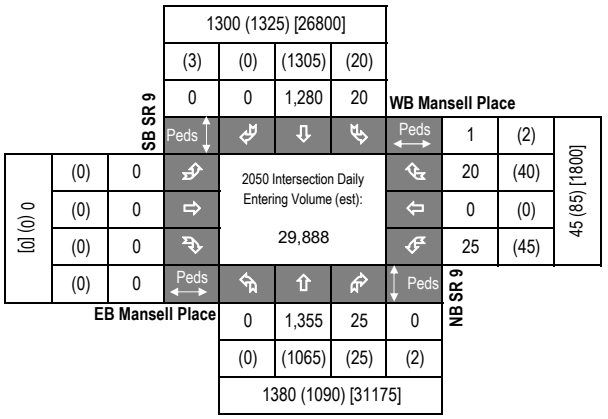
2025 EXISTING YEAR VOLUMES



2030 OPENING YEAR VOLUMES



2050 DESIGN YEAR VOLUMES



LEGEND:

000 = AM Peak Approach Volume

(000) = PM Peak Approach Volume

[000] = ADT Volume (Estimate)

Introduction: In 2005, SAFETEA-LU established the Highway Safety Improvement Program (HSIP) and mandated that each state prepare a Strategic Highway Safety Plan (SHSP) to prioritize safety funding investments. Intersections quickly became a common component of most states' SHSP emphasis areas and HSIP project lists, including Georgia's SHSP. Intersection Control Evaluation (ICE) policies and procedures represent a traceable and transparent procedure to streamline the evaluation of intersection control alternatives, and further leverage safety advancements for intersection improvements beyond just the safety program. Approximately one-third of all traffic fatalities and roughly seventy five percent of all traffic crashes in Georgia occur at or adjacent to intersections. Accordingly, the Georgia SHSP includes an emphasis on enhancing intersection safety to advance the *Toward Zero Deaths* vision embraced by the Georgia Governor's Office of Highway Safety (GOHS). This ICE tool was developed to support the ICE policy, developed and adopted to help ensure that intersection investments across the entire Georgia highway system are selected, prioritized and implemented with defensible benefits for safety towards those ends.

Tool Goal: The goal of this ICE tool is to provide a simplified and consistent way of importing traffic, safety, cost, environmental impact and stakeholder posture data to assess and quantify intersection control improvement benefits. The tool supports the ICE policy and procedures to provide traceability, transparency, consistency and accountability when identifying and selecting an intersection control solution that both meets project purpose and reflects overall best value in terms of specific performance-based criteria.

Requirements: An ICE is required for any intersection improvement (e.g. new or modified intersection, widening/reconstruction or corridor project, or work accomplished through a driveway or encroachment permit that affects an intersection) where: **1)** the intersection includes at least one roadway designated as a State Route (State Highway System) or as part of the National Highway System; or **2)** the intersection will be designed or constructed using State or Federal funding. In certain circumstances where an ICE would otherwise be required, the requirement may be waived based on appropriate evidence presented with a written request. (See the "**Waiver**" tab to review criteria that may make a project waiver eligible and for instructions to submit a waiver request to the Department). An ICE is not required when the proposed work does not include any changes to the intersection design, involves only routine traffic signal timing and equipment maintenance, or for driveway permits where the driveway is not a new leg to an already existing intersection on either 1) a divided, multi-lane highway with a closed median and only right-in/right-out access or 2) an undivided roadway where the development is not required to construct left and/or right turn lanes (as per the Driveway Manual and District Traffic Engineer).

Two-Stage Process: A complete ICE process consists of two (2) distinct stages, and it is expected that the respective level of effort for completing both stages of ICE will correspond to the magnitude and complexity of the intersection. Prior to starting an ICE, the District Traffic Engineer and/or State Traffic Engineer should be consulted for advice on an appropriate level of effort. The Stage 1 and Stage 2 ICE forms are designed minimize required data inputs using drop-down menu choices and limiting text entry. All fields shaded grey include drop down menu choices and all fields shaded blue require data entry. All other cells in the worksheet are locked.

Stage 1: Screening Decision Record Stage 1 should be conducted early in the project development process and is intended to inform which alternatives are worthy of further evaluation in Stage 2. Stage 1 serves as a screening effort meant to *eliminate* non-competitive options and identify which alternatives merit further considerations based on their practical feasibility. Users should use good engineering judgement in responding to the seven policy questions by selecting "Yes" or "No" in the drop-down boxes. Alternatives should not be summarily eliminated without due consideration, and reasons for eliminating or advancing an alternative should be documented in the "Screening Decision Justification" column.

Stage 2: Alternative Selection Decision Record Stage 2 involves a more detailed and familiar evaluation of the alternatives identified in Stage 1 in order to support the selection of a preferred alternative that may be advanced to detailed design. Stage 2 data entry may require the use of external analysis tools to determine costs, operations and/or safety data that, combined with environmental and stakeholder posture data, form the basis of the ICE evaluation. A separate "CostEst" worksheet tab helps users develop pre-planning-level cost estimates for each Stage 2 alternative evaluated, and a separate Users Guide has been prepared to give guidance on Stage 1 and Stage 2 data entry. Once all data is entered, each alternative is scored and ranked, with the results reported at the bottom of the Stage 2 worksheet to inform on the best of the intersection controls evaluated for project recommendation.

Documentation: A complete ICE document consists of the combination of the outputs from either a completed and signed waiver form or both Stage 1 and Stage 2 worksheets (along with supporting costing and/or environmental documentation), to be included in the approved project Concept Report (or equivalent) or as a stand-alone document.

GDOT ICE STAGE 1: SCREENING DECISION RECORD

ICE Version 2.3| Revised 11/13/2023

GDOT PI #	N/A
Project Location:	SR 9 @ Mansell Place
Existing Control:	Conventional (Minor Stop)
Prepared by:	Kimley-Horn
Date:	3/3/2026

Answer "Yes" or "No" to each policy question for each control type to identify which alternatives should be evaluated in the Stage 2 Decision Record; enter justification in the rightmost column

Note: Up to 5 alternatives may be selected and evaluated; Use this ICE Stage 1 to screen 5 or fewer alternatives to evaluate in Stage 2

	Intersection Alternative (see "Intersections" tab for detailed description of intersection/interchange type)	1. Does alternative address the project need in a balanced manner and in scale with the project?	2. Does alternative improve safety performance in terms of reducing severe crashes?	3. Does alternative incorporate safety, convenience and accessibility for pedestrians and/or bicyclists?	4. Does alternative improve (or preserve) traffic operations (congestion, delay, reliability, etc.)?	5. Does alternative appear feasible given the site characteristics, constrains & location context?	6. Does alternative appear feasible with respect to other project factors?	7. Overall feasible alternative (select alternative for further evaluation in Stage 2)?	**Screening Decision Justification:**
Unsignalized Intersections	Conventional (Minor Stop)	No	No	No	No	No	No	No	Existing condition
	Conventional (All-Way Stop)	No	No	No	No	No	No	No	Intersection TEV is too high and would cause excessive delay
	Mini Roundabout	No	No	No	No	No	No	No	ADT > 15,000; Minor street ADT is only 5% of ADT split
	Single Lane Roundabout	No	No	No	No	No	No	No	ADT > 25,000; Minor street ADT is only 5% of ADT split
	Multilane Roundabout	No	**Yes**	**Yes**	No	No	No	No	Minor street ADT is only 5% of ADT split; 180 ft diameter required
	RCUT (stop control)	**Yes**	**Yes**	No	No	No	No	No	U-turn radius of 45-90 ft would heavily impact 2 commercial properties
	RIRO w/down stream U-Turn	**Yes**	**Yes**	No	No	No	No	No	U-turn radius of 45-90 ft would heavily impact 2 commercial properties
	High-T (unsignalized)	No	No	No	No	No	No	No	Would not provide adequate gaps to address the operational need
	Offset-T Intersections	No	No	No	No	No	No	No	Existing three-leg intersection.
	Diamond Interch (Stop Control)	No	No	No	No	No	No	No	Interchange is out of context
	Diamond Interch (RAB Control)	No	No	No	No	No	No	No	Interchange is out of context
	No LT Lane Improvements Add one RT Lane on Mansell Place	**Yes**	**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	May improve side-street delay, though does not provide gaps
	Other unsignalized (provide description):	No	No	No	No	No	No	No	N/A
Signalized Intersections	Traffic Signal	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	Addresses operational need to provide gaps; No property impacts
	Median U-Turn (Indirect Left)	No	No	No	No	No	No	No	Not appropiate for intersection scale.
	RCUT (signalized)	**Yes**	**Yes**	**Yes**	No	No	No	No	U-turn radius of 45-90 ft would heavily impact 2 commercial properties
	Displaced Left Turn (CFI)	No	No	No	No	No	No	No	Out of scale for project and does not address needs
	Continuous Green-T	No	No	No	No	No	No	No	Out of scale for project and does not address needs
	Jughandle	No	No	No	No	No	No	No	Out of scale for project and does not address needs
	Quadrant Roadway	No	No	No	No	No	No	No	Out of scale for project and does not address needs
	Diamond Interch (Signal Control)	No	No	No	No	No	No	No	Interchange is out of context
	Diverging Diamond	No	No	No	No	No	No	No	Interchange is out of context
	Single Point Interchange	No	No	No	No	No	No	No	Interchange is out of context
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	N/A
	Other Signalized (provide description):	No	No	No	No	No	No	No	N/A

= Intersection type selected for more detailed analysis in Stage 2 Alternative Selection Decision Record

GDOT ICE STAGE 2: ALTERNATIVE SELECTION DECISION RECORD

ICE Version 2.3| Revised 11/13/2023

Project Location: SR 9 @ Mansell Place
Existing Intersection Control: Conventional (Minor Stop)
Type of Analysis: Conventional Non-Safety Funded Project

District: 7 - Metro Atlanta
County: Fulton
Area: Urban

GDOT PI #: N/A
Prepared by: Kimley-Horn
Date: 3/3/2026

Opening / Design Year Traffic Operations

Intersection meets signal/AWS warrants?	Meets Signal Warrants	
Traffic Analysis Measure of Effectiveness	Intersection Delay	
Traffic Analysis Software Used	Synchro	
Analysis Time Period	AM Peak Hr	PM Peak Hr
2030 Opening Yr No-Build Peak Hr Intersection Delay	25.8 sec	21.9 sec
2030 Opening Yr No-Build Peak Hr Intersection V/C	0.26	0.34
2050 Design Yr No-Build Peak Hr Intersection Delay	33.8 sec	26.7 sec
2050 Design Yr No-Build Peak Hr Intersection V/C ratio	0.39	0.43

Complete Streets Warrants Met?

- ☐ PEDESTRIANS
- ☐ BICYCLES
- ☐ TRANSIT

Crash Type

Crash Data: Enter most recent 5 years of crash data	Crash Severity K*	A*	B*	C*	O	Years: 5
Angle	0	0	3	2	3	35%
Head-On	0	0	0	0	0	0%
Rear End	0	0	0	1	1	9%
Sideswipe - same	0	0	0	0	6	26%
Sideswipe - opposite	0	0	0	0	1	4%
Not Collision w/Motor Veh	0	0	2	0	4	26%
TOTALS:	0	0	5	3	15	23

* Number of crashes resulting in injuries / fatalities, not number of persons

Alternatives Analysis:

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Proposed Control Type/Improvement:	Add Right Turn Lanes	Traffic Signal	N/A	N/A	N/A
Project Cost: (From CostEst Worksheet)	*Additional description here*	*Add LT bays all approaches*	*Additional description here*	*Additional description here*	*Additional description here*
Construction Cost	$144,000	$362,000			
ROW Cost	$400,000	$160,000			
Environmental Cost	$0	$0			
Reimbursable Utility Cost	$2,000	$7,000			
Design & Contingency Cost	$48,000	$163,000			
Cost Adjustment (justification req'd)	0%	0%			
Total Cost	$594,000	$692,000			
Traffic Operations:					
Traffic Analysis Software Used	Synchro	Synchro			
Analysis Period	AM Peak Hr / PM Peak Hr	AM Peak Hr / PM Peak Hr			
2050 Design Yr Build Intersection Delay	28.5 sec / 21.6 sec	27.8 sec / 25.6 sec			
2050 Design Yr Build Intersection V/C	0.29 / 0.29	0.43 / 0.39			
Safety Analysis:					
Predefined CRF: PDO	0%	39%			
Predefined CRF: Fatal/Inj	0%	40%			
Predefined CRF Source:	FHWA Clearinghouse #s 285 / 288	FHWA Clearinghouse #s 7982 / 7984			
User Defined CRF: PDO					
User Defined CRF: Fatal/Inj					
User Defined CRF Source (write in if applicable):					
Environmental Impacts:[1]					
Historic District/Property	None	None			
Archaeology Resources	None	None			
Graveyard	None	None			
Stream	None	None			
Underground Tank/Hazmat	None	None			
Park Land	None	None			
EJ Community	None	None			
Wooded Area	None	None			
Wetland	None	None			
Stakeholder Posture:	*Note: If environmental impact is significant (**RED**), provide justification impact won't jeopardize project delivery using "Env" worksheet*				
	[1] *Environmental impacts are only preliminary estimates; detailed environmental impact documentation will be included with project concept report*				
Local Community Support	Unknown	Unknown			
GDOT Support	Unknown	Unknown			
Final ICE Stage 2 Score:	**5.3**	**6.4**			
Rank of Control Type Alternatives:	**2**	**1**			
Final Intersection Control Selection:	**1 - Traffic Signal**				

Note: Stage 2 score is not given (shown as "-") if signal or AWS is selected as control type but respective warrants are not met

Provide additional comments and/or explain any unique analysis inputs, or results (as necessary):

GDOT ICE TOOL: COST ESTIMATING AID

ICE Version 2.3| Revised 11/13/2023

Project Information

Location:	SR 9 @ Mansell Place	County:	Fulton	Project#:	N/A
Existing Intersection Control:	Conventional (Minor Stop)	GDOT District:	7 - Metro Atlanta	Date:	3/3/2026
Type of Analysis:	Conventional Non-Safety Funded Project	Area Type:	Urban	Preparer:	Kimley-Horn

Table 1: Existing Conditions

	NB SR 9			SB SR 9			EB Mansell Place			WB Mansell Place		
Movement	Left Turn	Thru	Right Turn	Left Turn	Thru	Right Turn	Left Turn	Thru	Right Turn	Left Turn	Thru	Right Turn
Number of Lanes	0	2	1	0	2	0	0	0	0	0	1	0
Lane Widths*	0'	12'	12'	0'	12'	0'	0'	0'	0'	0'	14'	0'
Bay Length**	0'		0'	0'		0'	0'		0'	0'		0'
Median Width		0'			0'			0'			0'	
Right-of-Way	85'						60'					

Table 2: Proposed Conditions

	Add Right Turn Lanes	Traffic Signal	N/A	N/A	N/A
Proposed Pavement Type	F.D. Asphalt	F.D. Asphalt	F.D. Asphalt	F.D. Asphalt	None
Reimbursable Utility:	Minimal	Minimal	Minimal	Minimal	Minimal
# of Driveway(s) Impacted	1	0	0	0	0
Modify/Replace Traffic Signal*	0	0	0	0	0
Lighting Poles (ea)	0	2	0	0	0
Flashing Beacons (ea)	0	0	0	0	0
RFB/PHB Ped Crossings (ea)	0	0	0	0	0
New/Replace Sidewalks (LF)	150'	0'	0'	0'	0'
New/Replace Cross Drains (LF)	0'	0'	0'	0'	0'
New/Replace Guardrail (LF)	0'	0'	0'	0'	0'
New Retaining Wall (LF)	0'	0'	0'	0'	0'
Bridge:New/Widen/Replace (sqft)	0	0	0	0	0
Add'l ROW/Easements/Demolition	$250,000	$100,000	$0	$0	$0

Site Context

Topography:	Level
Traffic Mgmt Plan:	Maintain Traffic
Project Size:	Single Intersection

Intersections

Signal Poles	Wood Pole
Design Vehicle	WB-67
Existing Interchange?	No

Roundabouts

Inscribed DIA - Mini	80
Inscribed DIA - Single	140
Inscribed DIA - Multi	200
Circulating Lane Width	18

Cost Multipliers

Grading Complete:	15%
Reimbursable Utility:	2%
Traffic Control:	20%
Project Size:	0%
Prelim Engineering:	15%
Project Contingency:	30%

ROW Costs

Prevalent ROW Type:	Agricultural
ROW Cost/Acre:	$464,336
ROW Multiplier:	1.6

Table 3: Control Type Cost Breakdown

Pay Item	Per Ln Mi Unit Cost	Unit Cost	Add Right Turn Lanes		Traffic Signal		N/A		N/A		N/A	
			Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost
New Construction (Base & Pave)	$500K/LM	$9.47/sqft	4,500	$42,614	16,000	$151,515						
Roadway Mill and Overlay	$64K/LM	$1.21/sqft	0	$0	0	$0						
Urban C&G/Drainage - both sides	441-6720	$22.00/LF	1000	$22,000	4,000	$88,000						
Rural Typ Drainage - both sides	$150K/LM	$2.84/LF	0	$0	0	$0						
Concrete Island (sqyd)	n/a	$75.49/syd	0	$0	0	$0						
Median Landscaping	$100K/LM	$1.89/LF	0	$0	0	$0						
Typical Driveways Impacted (ea)	n/a	$7,500 ea	1	$7,500	0	$0						
Typical E&S Control Temp/Perm	$150K/LM	$34.09/LF	500	$17,045	2,000	$68,182						
Roundabout Truck Apron (sqft)	n/a	$23.00/sqft	0	$0	0	$0						
Signing & Marking	$0	$22.73/LF	500	$11,365	2,000	$45,460						
Flashing Beacon (ea)	n/a	$20,000 ea	0	$0	0	$0						
New Traffic Signal (Wood Poles)	674-1000	$73,030	0	$0	0	$0						
Lighting (per pole)	n/a	$4,700 ea	0	$0	2	$9,400						
Signalized Ped Crossings (ea)	n/a	$5,782 ea	0	$0	0	$0						
6' Sidewalk (LF)	n/a	$41.95/LF	150	$6,293	0	$0						
New/replace cross drains (LF)	n/a	$56.37/LF	0	$0	0	$0						
Typical Guardrail (LF)	n/a	$70.00/LF	0	$0	0	$0						
Retaining Wall (LF)	n/a	$633.25/LF	0	$0	0	$0						
Bridge widen/replace (SF)	n/a	$210/sqft	0	$0	0	$0						
Env Costs (from Stage 2 impacts)	n/a	n/a	0	$0	0	$0						
Grading Complete - 15%	n/a	n/a		$16,022		$0						
Traffic Control - 20%	n/a	n/a		$21,363		$0						
Reimbursable Utility	n/a	n/a		$2,136		$7,251						
Preliminary Engineering - 15%	n/a	n/a		$16,022		$54,384						
Contigency - 30%	n/a	n/a		$32,045		$108,767						
ROW Cost/Acre: Agricultural	n/a	$464,336ac		$0		$0						
Add'l ROW / Displacement / Demo	n/a	n/a		$250,000		$100,000						
ROW Multiplier - 1.6	n/a	n/a		$150,000		$60,000						
Project Scale Reduction - 0.0%	n/a	n/a		$0		$0						
Grand Total Costs				**$594,000**		**$693,000**						

Table 4: Assumption Adjustments/Quantity Overrides

Alternative Evaluated	Assumptions:	Pavement	Calculated ROW (ac)	User Override*	Calculated Pavement	User Override*	Major ST Const Limits	User Override*	Minor ST Const Limits	User Override*
Add Right Turn Lanes	N/A	F.D. Asphalt	0.00	0.0	4,500	0.0	500	0.0	0	0.0
Traffic Signal	No Paving	F.D. Asphalt	0.00	0.0	16,000	0.0	1,000	0.0	1,000	0.0
N/A	#N/A	F.D. Asphalt	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N/A	#N/A	F.D. Asphalt	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
N/A	#N/A	None	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Attachment A:

Crash Data Table

Attachment A: Crash Data Table

No	Crash No	Date	Time	Location	Severity	Crash Type	# of Vehicles	Direction 1	Direction 2	Lighting	Surface
1	7502988	1/2/2020	16:08	SR 9 at Mansell Pl	O	Angle	2	West	North	Daylight	Wet
2	7524919	1/22/20	22:49	SR 9 at Mansell Pl	O	Run off the Road	1	South	N/A	Dark-Lighted	Dry
3	7656574	6/4/20	17:08	SR 9 at Mansell Pl	B	Angle	2	West	North	Daylight	Dry
4	7660278	6/8/20	10:35	SR 9 at Mansell Pl	O	ideswipe - Opposite Directio	2	North	North	Daylight	Dry
5	7878760	12/4/20	11:52	SR 9 at Mansell Pl	C	Angle	2	West	North	Daylight	Wet
6	7949156	2/9/21	15:51	SR 9 at Mansell Pl	B	Run off the Road	1	North	0	Daylight	Dry
7	8094836	6/9/21	9:25	SR 9 at Mansell Pl	O	Sideswipe - Same Direction	2	North	North	Daylight	Dry
8	8151265	7/25/21	20:52	SR 9 at Mansell Pl	B	Run off the Road	1	North	0	Daylight	Dry
9	8614921	7/11/22	20:53	SR 9 at Mansell Pl	O	Sideswipe - Same Direction	2	North	North	Daylight	Dry
10	8917577	3/2/23	16:00	SR 9 at Mansell Pl	O	Angle	2	West	North	Daylight	Wet
11	9016348	5/19/23	15:00	SR 9 at Mansell Pl	O	Run off the Road	1	South	0	Daylight	Dry
12	9035508	6/7/23	17:55	SR 9 at Mansell Pl	B	Angle	2	West	North	Daylight	Dry
13	9120030	8/23/23	8:33	SR 9 at Mansell Pl	O	Sideswipe - Same Direction	2	North	North	Daylight	Dry
14	9137993	9/6/23	20:26	SR 9 at Mansell Pl	C	Rear End	2	North	North	Dark-Lighted	Dry
15	9153056	9/16/23	14:32	SR 9 at Mansell Pl	O	Sideswipe - Same Direction	2	North	North	Daylight	Wet
16	9335064	2/13/24	17:34	SR 9 at Mansell Pl	O	Run off the Road	1	East	N/A	Daylight	Dry
17	9379185	3/19/24	14:04	SR 9 at Mansell Pl	C	Angle	2	West	North	Daylight	Dry
18	9494358	6/28/24	11:05	SR 9 at Mansell Pl	O	Rear End	2	North	North	Daylight	Dry
19	9507115	7/11/24	12:09	SR 9 at Mansell Pl	B	Left Turn	3	South	North	Daylight	Dry
20	9594323	9/14/24	12:15	SR 9 at Mansell Pl	O	Angle	2	West	South	Daylight	Dry
21	9600123	9/20/24	11:41	SR 9 at Mansell Pl	O	Sideswipe - Same Direction	2	South	South	Daylight	Dry
22	9673628	11/13/24	19:00	SR 9 at Mansell Pl	O	Hit Animal	1	North	N/A	Dark-Not Lighted	Dry
23	9692982	11/26/24	14:00	SR 9 at Mansell Pl	O	Sideswipe - Same Direction	2	South	South	Daylight	Dry

Attachment B:

Operational Analysis Reports

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	15	1195	20	20	1130
Future Volume (vph)	20	15	1195	20	20	1130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		200	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Link Speed (mph)	25		45			45
Link Distance (ft)	503		1447			944
Travel Time (s)	13.7		21.9			14.3
Confl. Peds. (#/hr)		1		1	1	
Peak Hour Factor	0.57	0.56	0.94	0.86	0.69	0.96
Heavy Vehicles (%)	12%	11%	3%	4%	0%	5%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	20	15	1195	20	20	1130
Future Volume (Veh/h)	20	15	1195	20	20	1130
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.57	0.56	0.94	0.86	0.69	0.96
Hourly flow rate (vph)	35	27	1271	23	29	1177
Pedestrians	1					1
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1919	638			1272	
vC1, stage 1 conf vol	1272					
vC2, stage 2 conf vol	647					
vCu, unblocked vol	1919	638			1272	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)	6.0					
tF (s)	3.6	3.4			2.2	
p0 queue free %	81	93			95	
cM capacity (veh/h)	187	398			552	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	62	636	636	23	29	589	589
Volume Left	35	0	0	0	29	0	0
Volume Right	27	0	0	23	0	0	0
cSH	243	1700	1700	1700	552	1700	1700
Volume to Capacity	0.26	0.37	0.37	0.01	0.05	0.35	0.35
Queue Length 95th (ft)	25	0	0	0	4	0	0
Control Delay (s/veh)	24.8	0.0	0.0	0.0	11.9	0.0	0.0
Lane LOS	C				B		
Approach Delay (s/veh)	24.8	0.0			0.3		
Approach LOS	C						

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	35	940	20	15	1155
Future Volume (vph)	40	35	940	20	15	1155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		200	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Link Speed (mph)	25		45			45
Link Distance (ft)	503		1447			944
Travel Time (s)	13.7		21.9			14.3
Confl. Peds. (#/hr)	2	3		2	2	
Peak Hour Factor	0.72	0.64	0.90	0.67	0.59	0.95
Heavy Vehicles (%)	2%	2%	4%	0%	0%	2%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	40	35	940	20	15	1155
Future Volume (Veh/h)	40	35	940	20	15	1155
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.72	0.64	0.90	0.67	0.59	0.95
Hourly flow rate (vph)	56	55	1044	30	25	1216
Pedestrians	2		2			3
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1706	527			1046	
vC1, stage 1 conf vol	1046					
vC2, stage 2 conf vol	660					
vCu, unblocked vol	1706	527			1046	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	89			96	
cM capacity (veh/h)	254	494			672	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	111	522	522	30	25	608	608
Volume Left	56	0	0	0	25	0	0
Volume Right	55	0	0	30	0	0	0
cSH	334	1700	1700	1700	672	1700	1700
Volume to Capacity	0.33	0.31	0.31	0.02	0.04	0.36	0.36
Queue Length 95th (ft)	35	0	0	0	3	0	0
Control Delay (s/veh)	21.0	0.0	0.0	0.0	10.6	0.0	0.0
Lane LOS	C				B		
Approach Delay (s/veh)	21.0	0.0			0.2		
Approach LOS	C						

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	20	15	1225	20	20	1155
Future Volume (vph)	20	15	1225	20	20	1155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		200	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Link Speed (mph)	25		45			45
Link Distance (ft)	503		1447			944
Travel Time (s)	13.7		21.9			14.3
Confl. Peds. (#/hr)		1		1	1	
Peak Hour Factor	0.57	0.56	0.94	0.86	0.69	0.96
Heavy Vehicles (%)	12%	11%	3%	4%	0%	5%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	20	15	1225	20	20	1155
Future Volume (Veh/h)	20	15	1225	20	20	1155
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.57	0.56	0.94	0.86	0.69	0.96
Hourly flow rate (vph)	35	27	1303	23	29	1203
Pedestrians	1					1
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1964	654			1304	
vC1, stage 1 conf vol	1304					
vC2, stage 2 conf vol	660					
vCu, unblocked vol	1964	654			1304	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)	6.0					
tF (s)	3.6	3.4			2.2	
p0 queue free %	81	93			95	
cM capacity (veh/h)	180	388			537	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	62	652	652	23	29	602	602
Volume Left	35	0	0	0	29	0	0
Volume Right	27	0	0	23	0	0	0
cSH	234	1700	1700	1700	537	1700	1700
Volume to Capacity	0.26	0.38	0.38	0.01	0.05	0.35	0.35
Queue Length 95th (ft)	26	0	0	0	4	0	0
Control Delay (s/veh)	25.8	0.0	0.0	0.0	12.1	0.0	0.0
Lane LOS	D				B		
Approach Delay (s/veh)	25.8	0.0			0.3		
Approach LOS	D						

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	40	35	965	20	20	1185
Future Volume (vph)	40	35	965	20	20	1185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		200	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Link Speed (mph)	25		45			45
Link Distance (ft)	503		1447			944
Travel Time (s)	13.7		21.9			14.3
Confl. Peds. (#/hr)	2	3		2	2	
Peak Hour Factor	0.72	0.64	0.90	0.67	0.59	0.95
Heavy Vehicles (%)	2%	2%	4%	0%	0%	2%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	40	35	965	20	20	1185
Future Volume (Veh/h)	40	35	965	20	20	1185
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.72	0.64	0.90	0.67	0.59	0.95
Hourly flow rate (vph)	56	55	1072	30	34	1247
Pedestrians	2		2			3
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1768	541			1074	
vC1, stage 1 conf vol	1074					
vC2, stage 2 conf vol	694					
vCu, unblocked vol	1768	541			1074	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	77	89			95	
cM capacity (veh/h)	243	483			656	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	111	536	536	30	34	624	624
Volume Left	56	0	0	0	34	0	0
Volume Right	55	0	0	30	0	0	0
cSH	322	1700	1700	1700	656	1700	1700
Volume to Capacity	0.34	0.32	0.32	0.02	0.05	0.37	0.37
Queue Length 95th (ft)	37	0	0	0	4	0	0
Control Delay (s/veh)	21.9	0.0	0.0	0.0	10.8	0.0	0.0
Lane LOS	C				B		
Approach Delay (s/veh)	21.9	0.0			0.3		
Approach LOS	C						

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	20	1355	25	20	1280
Future Volume (vph)	25	20	1355	25	20	1280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		200	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Link Speed (mph)	25		45			45
Link Distance (ft)	503		1447			944
Travel Time (s)	13.7		21.9			14.3
Confl. Peds. (#/hr)		1		1	1	
Peak Hour Factor	0.57	0.56	0.94	0.86	0.69	0.96
Heavy Vehicles (%)	12%	11%	3%	4%	0%	5%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	20	1355	25	20	1280
Future Volume (Veh/h)	25	20	1355	25	20	1280
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.57	0.56	0.94	0.86	0.69	0.96
Hourly flow rate (vph)	44	36	1441	29	29	1333
Pedestrians	1					1
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2167	723			1442	
vC1, stage 1 conf vol	1442					
vC2, stage 2 conf vol	725					
vCu, unblocked vol	2167	723			1442	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)	6.0					
tF (s)	3.6	3.4			2.2	
p0 queue free %	71	90			94	
cM capacity (veh/h)	151	349			476	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	80	721	721	29	29	667	667
Volume Left	44	0	0	0	29	0	0
Volume Right	36	0	0	29	0	0	0
cSH	203	1700	1700	1700	476	1700	1700
Volume to Capacity	0.39	0.42	0.42	0.02	0.06	0.39	0.39
Queue Length 95th (ft)	44	0	0	0	5	0	0
Control Delay (s/veh)	33.8	0.0	0.0	0.0	13.1	0.0	0.0
Lane LOS	D				B		
Approach Delay (s/veh)	33.8	0.0			0.3		
Approach LOS	D						

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	40	1065	25	20	1305
Future Volume (vph)	45	40	1065	25	20	1305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		200	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Link Speed (mph)	25		45			45
Link Distance (ft)	503		1447			944
Travel Time (s)	13.7		21.9			14.3
Confl. Peds. (#/hr)	2	3		2	2	
Peak Hour Factor	0.72	0.64	0.90	0.67	0.59	0.95
Heavy Vehicles (%)	2%	2%	4%	0%	0%	2%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	45	40	1065	25	20	1305
Future Volume (Veh/h)	45	40	1065	25	20	1305
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.72	0.64	0.90	0.67	0.59	0.95
Hourly flow rate (vph)	62	62	1183	37	34	1374
Pedestrians	2		2			3
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1942	597			1185	
vC1, stage 1 conf vol	1185					
vC2, stage 2 conf vol	757					
vCu, unblocked vol	1942	597			1185	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	71	86			94	
cM capacity (veh/h)	213	445			595	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	124	592	592	37	34	687	687
Volume Left	62	0	0	0	34	0	0
Volume Right	62	0	0	37	0	0	0
cSH	288	1700	1700	1700	595	1700	1700
Volume to Capacity	0.43	0.35	0.35	0.02	0.06	0.40	0.40
Queue Length 95th (ft)	52	0	0	0	5	0	0
Control Delay (s/veh)	26.7	0.0	0.0	0.0	11.4	0.0	0.0
Lane LOS	D				B		
Approach Delay (s/veh)	26.7	0.0			0.3		
Approach LOS	D						

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	20	1355	25	20	1280
Future Volume (vph)	25	20	1355	25	20	1280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Link Speed (mph)	25		45			45
Link Distance (ft)	503		1447			944
Travel Time (s)	13.7		21.9			14.3
Confl. Peds. (#/hr)		1		1	1	
Peak Hour Factor	0.57	0.56	0.94	0.86	0.69	0.96
Heavy Vehicles (%)	12%	11%	3%	4%	0%	5%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	25	20	1355	25	20	1280
Future Volume (Veh/h)	25	20	1355	25	20	1280
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.57	0.56	0.94	0.86	0.69	0.96
Hourly flow rate (vph)	44	36	1441	29	29	1333
Pedestrians	1					1
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)		8				
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2167	723			1442	
vC1, stage 1 conf vol	1442					
vC2, stage 2 conf vol	725					
vCu, unblocked vol	2167	723			1442	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)	6.0					
tF (s)	3.6	3.4			2.2	
p0 queue free %	71	90			94	
cM capacity (veh/h)	151	349			476	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	80	721	721	29	29	667	667
Volume Left	44	0	0	0	29	0	0
Volume Right	36	0	0	29	0	0	0
cSH	275	1700	1700	1700	476	1700	1700
Volume to Capacity	0.29	0.42	0.42	0.02	0.06	0.39	0.39
Queue Length 95th (ft)	29	0	0	0	5	0	0
Control Delay (s/veh)	28.5	0.0	0.0	0.0	13.1	0.0	0.0
Lane LOS	D				B		
Approach Delay (s/veh)	28.5	0.0			0.3		
Approach LOS	D						

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	40	1065	25	20	1305
Future Volume (vph)	45	40	1065	25	20	1305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	200		200	100	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Link Speed (mph)	25		45			45
Link Distance (ft)	503		1447			944
Travel Time (s)	13.7		21.9			14.3
Confl. Peds. (#/hr)	2	3		2	2	
Peak Hour Factor	0.72	0.64	0.90	0.67	0.59	0.95
Heavy Vehicles (%)	2%	2%	4%	0%	0%	2%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	45	40	1065	25	20	1305
Future Volume (Veh/h)	45	40	1065	25	20	1305
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.72	0.64	0.90	0.67	0.59	0.95
Hourly flow rate (vph)	62	62	1183	37	34	1374
Pedestrians	2		2			3
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)		8				
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1942	597			1185	
vC1, stage 1 conf vol	1185					
vC2, stage 2 conf vol	757					
vCu, unblocked vol	1942	597			1185	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	71	86			94	
cM capacity (veh/h)	213	445			595	

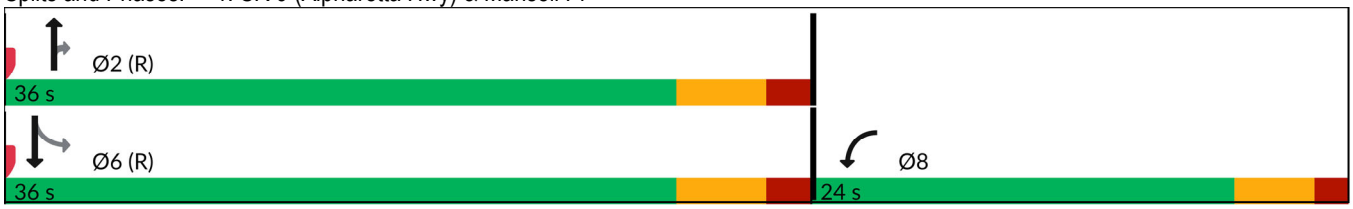
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	124	592	592	37	34	687	687
Volume Left	62	0	0	0	34	0	0
Volume Right	62	0	0	37	0	0	0
cSH	425	1700	1700	1700	595	1700	1700
Volume to Capacity	0.29	0.35	0.35	0.02	0.06	0.40	0.40
Queue Length 95th (ft)	30	0	0	0	5	0	0
Control Delay (s/veh)	21.6	0.0	0.0	0.0	11.4	0.0	0.0
Lane LOS	C				B		
Approach Delay (s/veh)	21.6	0.0			0.3		
Approach LOS	C						

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	20	1355	25	20	1280
Future Volume (vph)	25	20	1355	25	20	1280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		200	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		45			45
Link Distance (ft)	503		1447			944
Travel Time (s)	13.7		21.9			14.3
Confl. Peds. (#/hr)		1		1	1	
Peak Hour Factor	0.57	0.56	0.94	0.86	0.69	0.96
Heavy Vehicles (%)	12%	11%	3%	4%	0%	5%
Shared Lane Traffic (%)						
Turn Type	Prot		NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases				2	6	
Detector Phase	8		2	2	6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	24.0		22.0	22.0	22.0	22.0
Total Split (s)	24.0		36.0	36.0	36.0	36.0
Total Split (%)	40.0%		60.0%	60.0%	60.0%	60.0%
Yellow Time (s)	3.6		4.0	4.0	4.0	4.0
All-Red Time (s)	1.5		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1		6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max	C-Max	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: SR 9 (Alpharetta Hwy) & Mansell Pl



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	25	20	1355	25	20	1280
Future Volume (vph)	25	20	1355	25	20	1280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1		6.0	6.0	6.0	6.0
Lane Util. Factor	1.00		0.95	1.00	1.00	0.95
Frpb, ped/bikes	0.99		1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.94		1.00	0.85	1.00	1.00
Flt Protected	0.97		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1548		3505	1519	1805	3438
Flt Permitted	0.97		1.00	1.00	0.16	1.00
Satd. Flow (perm)	1548		3505	1519	301	3438
Peak-hour factor, PHF	0.57	0.56	0.94	0.86	0.69	0.96
Adj. Flow (vph)	44	36	1441	29	29	1333
RTOR Reduction (vph)	20	0	0	8	0	0
Lane Group Flow (vph)	60	0	1441	21	29	1333
Confl. Peds. (#/hr)		1		1	1	
Heavy Vehicles (%)	12%	11%	3%	4%	0%	5%
Turn Type	Prot		NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases				2	6	
Actuated Green, G (s)	5.5		43.4	43.4	43.4	43.4
Effective Green, g (s)	5.5		43.4	43.4	43.4	43.4
Actuated g/C Ratio	0.09		0.72	0.72	0.72	0.72
Clearance Time (s)	5.1		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	141		2535	1098	217	2486
v/s Ratio Prot	c0.04		c0.41			0.39
v/s Ratio Perm				0.01	0.10	
v/c Ratio	0.43		0.57	0.02	0.13	0.54
Uniform Delay, d1	25.8		3.9	2.3	2.5	3.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1		0.9	0.0	1.3	0.8
Delay (s)	27.8		4.8	2.4	3.8	4.6
Level of Service	C		A	A	A	A
Approach Delay (s/veh)	27.8		4.8			4.6
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.1
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	40	1065	25	20	1305
Future Volume (vph)	45	40	1065	25	20	1305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		200	100	
Storage Lanes	1	0		1	1	
Taper Length (ft)	25				25	
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		45			45
Link Distance (ft)	503		1447			944
Travel Time (s)	13.7		21.9			14.3
Confl. Peds. (#/hr)	2	3		2	2	
Peak Hour Factor	0.72	0.64	0.90	0.67	0.59	0.95
Heavy Vehicles (%)	2%	2%	4%	0%	0%	2%
Shared Lane Traffic (%)						
Turn Type	Prot		NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases				2	6	
Detector Phase	8		2	2	6	6
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	4.0
Minimum Split (s)	21.1		22.0	22.0	22.0	22.0
Total Split (s)	22.0		38.0	38.0	38.0	38.0
Total Split (%)	36.7%		63.3%	63.3%	63.3%	63.3%
Yellow Time (s)	3.6		4.0	4.0	4.0	4.0
All-Red Time (s)	1.5		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1		6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		C-Max	C-Max	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: SR 9 (Alpharetta Hwy) & Mansell Pl

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	45	40	1065	25	20	1305
Future Volume (vph)	45	40	1065	25	20	1305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1		6.0	6.0	6.0	6.0
Lane Util. Factor	1.00		0.95	1.00	1.00	0.95
Frpb, ped/bikes	0.99		1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.93		1.00	0.85	1.00	1.00
Flt Protected	0.98		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1682		3471	1577	1804	3539
Flt Permitted	0.98		1.00	1.00	0.22	1.00
Satd. Flow (perm)	1682		3471	1577	413	3539
Peak-hour factor, PHF	0.72	0.64	0.90	0.67	0.59	0.95
Adj. Flow (vph)	62	62	1183	37	34	1374
RTOR Reduction (vph)	48	0	0	11	0	0
Lane Group Flow (vph)	78	0	1183	26	34	1374
Confl. Peds. (#/hr)	2	3		2	2	
Heavy Vehicles (%)	2%	2%	4%	0%	0%	2%
Turn Type	Prot		NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases				2	6	
Actuated Green, G (s)	7.2		41.7	41.7	41.7	41.7
Effective Green, g (s)	7.2		41.7	41.7	41.7	41.7
Actuated g/C Ratio	0.12		0.70	0.70	0.70	0.70
Clearance Time (s)	5.1		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	201		2412	1096	287	2459
v/s Ratio Prot	c0.05		0.34			c0.39
v/s Ratio Perm				0.02	0.08	
v/c Ratio	0.39		0.49	0.02	0.12	0.56
Uniform Delay, d1	24.4		4.2	2.8	3.0	4.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2		0.7	0.0	0.8	0.9
Delay (s)	25.6		5.0	2.9	3.9	5.5
Level of Service	C		A	A	A	A
Approach Delay (s/veh)	25.6		4.9			5.4
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.1
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Attachment C:

Volume Development Worksheet

VOLUME DEVELOPMENT WORKSHEET

SR 9 (Alpharetta Highway) at Mansell Place

AM PEAK HOUR

	Mansell Place			SR 9 (Alpharetta Hwy)				SR 9 (Alpharetta Hwy)			
	Westbound			**Northbound**				**Southbound**			
Description	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
7:30 AM	8	-	5	0	-	333	6	0	6	317	-
7:45 AM	2	-	8	0	-	319	7	0	4	326	-
8:00 AM	4	-	2	0	-	321	4	0	4	311	-
8:15 AM	11	-	3	0	-	354	7	0	8	297	-
2025 Peak Hour Traffic	**25**	**-**	**18**	**0**	**-**	**1,327**	**24**	**0**	**22**	**1,251**	**-**
Monthly Factor	*0.98*	-	*0.98*	*0.98*	-	*0.97*	*0.97*	*0.98*	*0.97*	*0.97*	-
Daily Factor	*0.88*	-	*0.88*	*0.88*	-	*0.93*	*0.93*	*0.88*	*0.93*	*0.93*	-
2025 Existing Volumes	**20**	**-**	**15**	**0**	**-**	**1,195**	**20**	**0**	**20**	**1,130**	**-**
PHF	0.57	-	0.56	0.00	-	0.94	0.86	0.00	0.69	0.96	-
Single Unit Trucks (4-7)	3	-	0	0	-	34	1	0	0	47	-
Combination Trucks (8-13)	0	-	2	0	-	8	0	0	0	9	-
Heavy Vehicle %	12.0%	-	11.1%	0.0%	-	3.2%	4.2%	0.0%	0.0%	4.5%	-
2030 Annual Growth Rate	*0.50%*	-	*0.50%*	*0.50%*	-	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*	-
2030 Projected Traffic	**20**	**-**	**15**	**0**	**-**	**1,225**	**20**	**0**	**20**	**1,155**	**-**
2050 Annual Growth Rate	*0.50%*	-	*0.50%*	*0.50%*	-	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*	-
2050 Projected Traffic	**25**	**-**	**20**	**0**	**-**	**1,355**	**25**	**0**	**20**	**1,280**	**-**

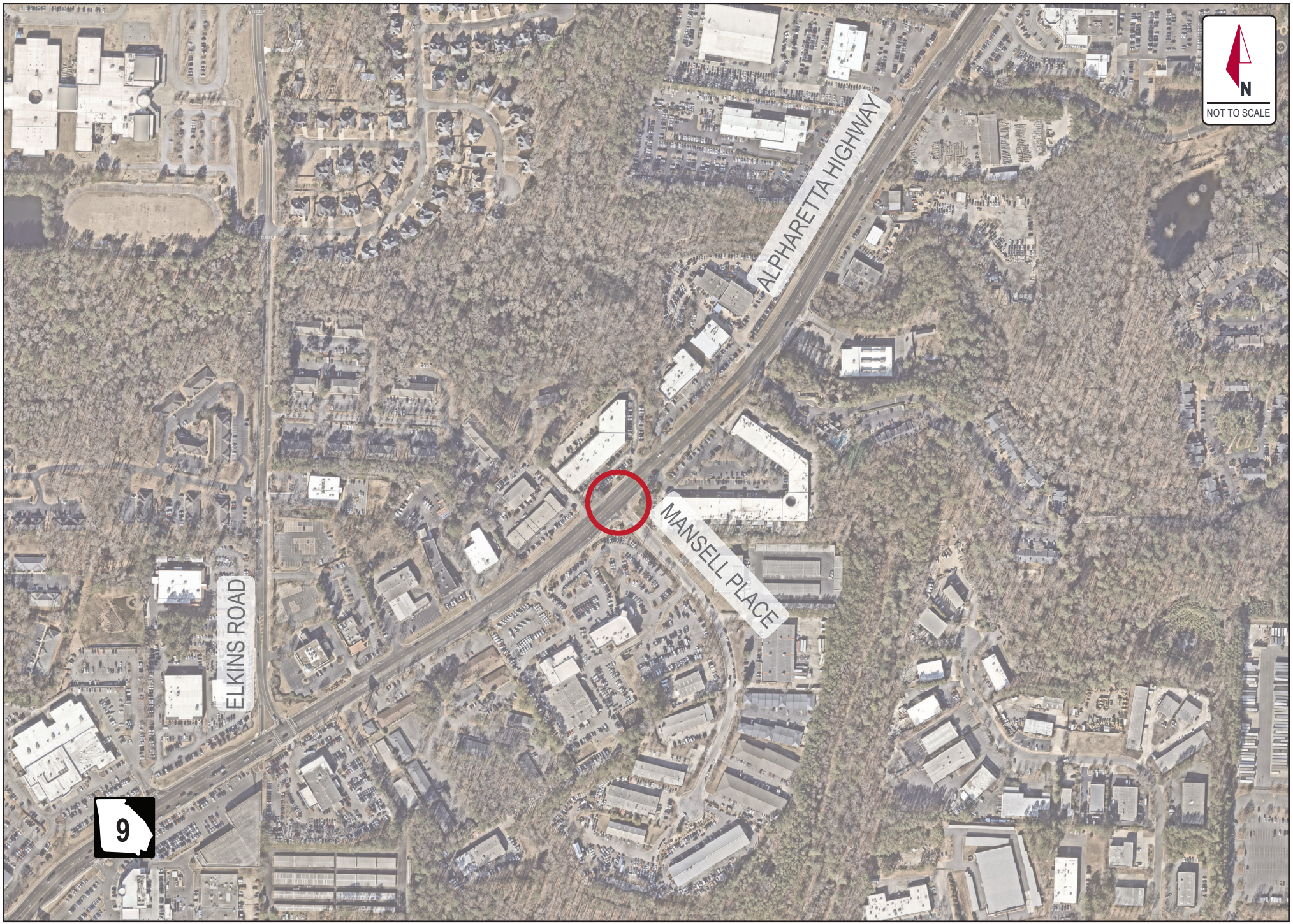
PM Peak Hour

	Mansell Place			SR 9 (Alpharetta Hwy)				SR 9 (Alpharetta Hwy)			
	Westbound			**Northbound**				**Southbound**			
Description	Left	Through	Right	U-Turn	Left	Through	Right	U-Turn	Left	Through	Right
4:30 PM	10	-	8	0	-	254	6	0	8	335	-
4:45 PM	11	-	6	0	-	227	9	0	5	313	-
5:00 PM	16	-	16	0	-	288	5	0	1	316	-
5:15 PM	9	-	11	0	-	272	4	0	5	315	-
2025 Peak Hour Traffic	**46**	**-**	**41**	**0**	**-**	**1,041**	**24**	**0**	**19**	**1,279**	**-**
Monthly Factor	*0.98*	-	*0.98*	*0.98*	-	*0.97*	*0.97*	*0.98*	*0.97*	*0.97*	-
Daily Factor	*0.88*	-	*0.88*	*0.88*	-	*0.93*	*0.93*	*0.88*	*0.93*	*0.93*	-
2025 Existing Volumes	**40**	**-**	**35**	**0**	**-**	**940**	**20**	**0**	**15**	**1,155**	**-**
PHF	0.72	-	0.64	0.00	-	0.90	0.67	0.00	0.59	0.95	-
Single Unit Trucks (4-7)	0	-	1	0	-	37	0	0	0	17	-
Combination Trucks (8-13)	1	-	0	0	-	6	0	0	0	8	-
Heavy Vehicle %	2.2%	-	2.4%	0.0%	-	4.1%	0.0%	0.0%	0.0%	2.0%	-
2030 Annual Growth Rate	*0.50%*	-	*0.50%*	*0.50%*	-	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*	-
2030 Projected Traffic	**40**	**-**	**35**	**0**	**-**	**965**	**20**	**0**	**20**	**1,185**	**-**
2050 Annual Growth Rate	*0.50%*	-	*0.50%*	*0.50%*	-	*0.50%*	*0.50%*	*0.50%*	*0.50%*	*0.50%*	-
2050 Projected Traffic	**45**	**-**	**40**	**0**	**-**	**1,065**	**25**	**0**	**20**	**1,305**	**-**

Kimley-Horn and Associates, Inc.

Attachment D:

Project Location Map



Kimley»Horn

ATTACHMENT D: PROJECT LOCATION MAP

SR 9 AT MANSELL PL

Attachment E:

Intersection Aerial

Kimley»Horn

ATTACHMENT E: INTERSECTION AERIAL

SR 9 AT MANSELL PL